Relationship between Immigrants Characteristics and Assimilation Pattern:

The Case of China-Hong Kong Migration

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Abstract

This paper aims to investigate how the years since migration affect the earnings of Chinese immigrants in Hong Kong. This study does not presume that the assimilation hypothesis is valid. Rather, it proposes that the validity of this hypothesis depends upon economic circumstances. The major contribution of this paper is to find out in what particular situation the assimilation hypothesis is true, and in what situation it is not. Borjas’ approach (1985) is used to construct a quasi-panel dataset and test the assimilation effect using different subsamples of Hong Kong census data. The subsampling is performed based on different dimensions: gender, marital status, occupation and industry. The validity of the assimilation is expected to be different between males and females, amongst different marital statuses, occupations and industries. For gender, the results show that male immigrants assimilate similarly to female immigrants, but the general consensus is that the self-selected male group is more productive. New immigrants almost always suffer from an earning disadvantage. Regarding the assimilation hypothesis, the results show that immigrants’ assimilation exists, but the income gaps are still widening which implies that immigrants’ earning is increasing with their years of residence, but the increasing rate is less than that of natives, thus, income gaps between them are widening. In addition, married immigrants have a higher assimilation rate than single immigrants, regardless of gender; married male immigrants assimilate similarly to married females. Moreover, the relationship between the importance of work experience and the assimilation rate

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tends to be negative. Furthermore, a polarisation of the assimilation rate was discovered in the occupational analysis; employees working in professional and elementary occupations assimilate much worse than in other occupations. Last but not least, the result confirmed an inverse relationship between assimilation rate and interpersonal skills requirements in different kinds of job. The above findings are essential, as they suggest various guidelines to Hong Kong immigration policymakers regarding the approaches of facilitating immigrants to adapt the life in Hong Kong. For instance, the Quality Migrant Admission Scheme mostly attracts professional immigrants to participate in the Hong Kong labour market, empirical results showed the professionals’ assimilation rate is low that imply their earnings are not greatly affected by their year of duration in Hong Kong. In addition, family reunification is always used to justify the priority of granting a one-way permit to Chinese immigrants, empirical results show that married immigrants have a higher assimilation rate than single immigrants, regardless of gender; married male immigrants assimilate similarly to married females and married females do assimilate better than single females. Consequently, policymakers need to take these factors into account in order to refine a correct entry arrangement of dependents in the future.

Keywords: Immigration; Assimilation; Human Capital Theory
1. Introduction

How well do Chinese immigrants get used to the Hong Kong labour market? Do Chinese immigrants who have low initial earnings suffer from continuous labour market disadvantages, or do they experience growth in earning? Labour economists have discussed whether immigrants assimilate into the destination country and how the quality of their life changes over time. This paper analyses the assimilation patterns of Chinese immigrants in the Hong Kong labour market. Table 1 shows the proportion of three different groups of people in Hong Kong, namely, Hong Kong natives, Chinese immigrants and immigrants from elsewhere. On average, almost 40 percent of Hong Kong’s population is born outside of the country. The proportion of Hong Kong natives always forms the largest group, which has effectively remained at approximately 60 percent in the past 15 years. Concurrently, there was a slight decrease in the number of Chinese immigrants, from 39.3 percent to 32.6 percent. The moderate change in the place-of-birth proportions over the last 15 years can be explained by the large inflow from China during the period of 1978 to 1980.

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<th>Table 1</th>
<th>Place of Birth (%)</th>
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The study of the assimilation of Chinese immigrants is of particular interest for three
reasons: 1) In the last decade, Hong Kong has been undergoing a major economic structural change (Li 2005), with the handover of Hong Kong sovereignty to the People’s Republic of China in 1997 and the Asian Financial Crisis in 1998; it is interesting to study how well the Chinese immigrants can adapt to Hong Kong’s life style, given the increasing integration between Hong Kong and China. The assimilation experiences of Chinese immigrants can be a useful reference for the assimilation pattern of immigrants in other receiving countries. 2) Before 1997, mainland residents were able to settle in Hong Kong through the One-way Permit Scheme, which mainly facilitates family reunification. This scheme effectively regulates the entry of mainland residents into Hong Kong for settlement so that the prosperity and stability of Hong Kong society can be maintained. Since Hong Kong is moving towards a knowledge-based and high value-added economy supported by a high-skilled workforce, its economic competitiveness hinges greatly on whether it can attract talented individuals to live and work in Hong Kong. Hence, the Hong Kong government has proposed several new immigration schemes to attract mainland and overseas talent since 2003. The immigrants’ characteristics are inherently essential to Hong Kong’s economic development, as different assimilation patterns are expected under several new immigration policy arrangements. 3) In the past, most Chinese immigrants were illegal immigrants who came to Hong Kong without permission;
they are self-selected and generally recognised as a more productive labour force compared to non-self-selected immigrants. However, Hong Kong immigration policy focuses on attracting mainland talent who are also expected to be highly productive. Consequently, investigating which groups, self-selected immigrants versus mainland talent, are relatively more productive can benefit future immigration policy formulation. In short, addressing the assimilation problem is not only interesting but also important, as the immigrants’ economic success will greatly influence their overall economic contribution to Hong Kong’s economy.

Figure 1 shows the earnings ratio between Chinese immigrants and natives. When it is less than 100 percent, it means that immigrants earn less than their native counterparts, whereas higher than 100 percent signifies the opposite. Obviously, the earning gap between Chinese immigrants and natives is widening. Lam and Liu (2002b) study the earnings divergence of Chinese immigrants in Hong Kong and find that it is very unusual compared to other receiving countries. They argue that this disparity is mainly due to divergence between skill prices for the education of immigrants and for natives.

Figure 1 Income Differentials
– Ratio between Chinese Immigrant and Hong Kong Native
This paper aims to study how the change of earnings differential between Chinese immigrants and natives relates to the year of duration. In other words, this research investigates the assimilation patterns of Chinese immigrants and how these patterns change over time. This paper is structured as follows. Section 1 presents a brief introduction of Chinese immigration history in Hong Kong, while Section 2 is a literature review. Section 3 describes the research hypotheses for this study. The data and descriptive statistics will be discussed in Section 4, and Section 5 and 6 present the empirical model and empirical results, respectively. Section 7 concludes.

2. Literature Review

The process of immigrant assimilation to the host country labour market has obtained a great deal of attention in economic literature. Economic assimilation is defined as the change of income differentials between immigrants with a similar background who have stayed longer periods of time and shorter periods of time. In general, immigrants who remain longer in the host country are expected to have a better living standard, as their life style converges with that of the natives once they adapt their skills to the ones demanded in the host country. Year of residence or duration refers to the number of years since migration, and it has been regarded as a major indicator in the study of the economic adjustment of immigrants. The pioneering work of
immigrants’ assimilation was done by Chiswick (1978), who used cross-sectional data to study the effect of Americanisation on the earnings of foreign-born men, found that immigrants earn less than natives at the time of arrival, but their earnings overtake the corresponding natives’ earnings within 15 years. In other words, the earnings of new immigrants may eventually equal to or even exceed those of corresponding natives’ that may attribute to their accumulation of destination country-specific skills after arrival. Long (1980) expanded on Chiswick’s work to estimate the relative earnings of foreign-born females, and the results indicate that their earnings are approximately 14 percent higher than those of their native-born counterparts, in which a foreign-born earnings advantage is relatively higher for females and the pattern of the earnings differential seems to vary by sex. Borjas (1982) studied the earning differential amongst male Hispanic immigrants in the United States. He hypothesised and validated that political refugees have greater incentives than economic immigrants to adapt rapidly to the United States labor market. However, this positive correlation between immigrants’ earning and year of duration has been criticised and challenged. Borjas (1985) identifies the potential bias and problem of using cross-sectional data to analyse immigrants’ behavior. He argues that the cross-section regressions disregard the quality disparity of the prospective immigrants and conclude with a positive correlation between immigrants’ earning and year of duration, which yields erroneous
insight into the adaptive process experienced by immigrants. In addition, he emphasises that different immigration cohorts in the United States have a different level of skills and labour qualities. Earlier immigrants earn more than later immigrants because they have a higher skill level, not necessarily because of assimilation. These innate differences in ability and skills across cohorts may arise as a result of an immigration policy change, or they may be attributed to a change in economic or political conditions in the source and/or host countries. The best data analysis strategy to address this potential bias is to use longitudinal or panel data, that is, to follow the same immigrants and natives over time. However, in practice, longitudinal datasets are scarce or only contain very few pieces of immigrant information. Borjas (1985) proposes a second-best strategy that involves tracking specific immigrant waves across cross-sections and then creating artificial cohorts for immigrants. Beenstock _et al._ (2005) called this strategy a “synthetic cohort methodology”; this approach enables researchers to create a quasi-panel dataset using cross-sectional data. He adopted this approach and re-estimated the United States assimilation rate. The results showed that the quality of immigrants relative to natives was declining, and this cohort effect suggests that Chiswick's convergence and assimilation results should be much lower than expected. Lalonde and Topel (1992) challenged Borjas’s (1985) thesis to hold schooling and experience constant, using
United States data to find significant evidence of a positive correlation between year of duration and immigrants’ earnings. The assimilation rate is higher than two percent in the first ten years of work experience in the United States labour market; however, they found Borjas’s (1985) argument about immigrant cohort effect insignificant.

The literature has focused on measuring the assimilation rate using either panel data or quasi-panel data, which is constructed using the synthetic cohort methodology proposed by Borjas (1985). For the empirical studies that employ panel data, Dustmann’s (1993) studies of economic assimilation for migrants in Germany emphasise the importance of differentiating between permanent and temporary migrants when analysing economic assimilation. Due to the different level of incentives to invest in host country-specific skills between permanent and temporary migrants, the former are expected to be more willing to invest in host-country specific skills. Thus, by employing the German socioeconomic panel collected in 1984, the results show that the “year since migration” coefficients for both permanent and temporary migrants have the expected sign. Even though the coefficient for temporary migrants is not significantly different from zero, it indicates that the year of duration in the host country does not have a narrowing impact on the earnings gap between German nationals and temporary workers. Hu (2000) adopted the standard regression
model to analyse a panel dataset, the Health and Retirement Survey, which is an ongoing longitudinal survey of the population born between 1931 and 1941. The longitudinal data analysis results suggest a strong degree of earnings convergence. That is, immigrants who start at lower earnings quickly catch up to their counterparts.

Hum and Simpson (2000) investigate the wage growth of immigrants in Canada by employing the master file of the Survey of Labour and Income Dynamics panel; the results suggest that the Canadian panel dataset does not support the usual assimilation hypothesis. Duleep and Dowhan (2002) use longitudinal data on earnings from a Social Security Administration database matched to the 1994 March Current Population Survey to address the issue of whether the earnings of foreign-born men converge with that of United Stated natives. The results show that immigrant cohorts generally indicate higher earnings growth than natives. Constant and Massey (2003) used German Socioeconomic Panel data for the period of 1984 to 1997 to address the question of how selective emigration affects cross-sectional earnings. The results suggest an ongoing process of economic assimilation that consistent with the prediction of human capital theory, and that wages of immigrants slowly increase with each additional year since migration, and only after the first fifteen years of residence in Germany. Hum and Simpson (2004) employed a panel dataset of Canadian households, the Survey of Labour and Income Dynamics, to investigate the wage
performance of male immigrants to Canada relative to native-born men; they found that assimilation effects are never statistically significant and do not imply a convergence of earnings between immigrants and natives. Beenstock et al. (2005) use a large panel sample of immigrants in Israel observed in 1983 and 1995 to make a comparison between the original cross-section methodology and synthetic cohort methodology. They performed a panel data analysis which resulted in the assimilation hypothesis, other things being equal, the growth of earnings between 1983 and 1995 should be greater for immigrants who spent less time in Israel in 1983, this hypothesis was confirmed by the first two methodologies, although it is not supported by the panel data.

For the empirical studies using quasi-panel data, Friedberg (1992) shows that age at arrival is an important determinant of immigrant earnings in the United States, and he presents corrected estimates of the assimilate rate at which the earnings of immigrants catch up to those of comparable natives with years since arrival. However, the assimilation rates are lower than uncorrected estimates performed by other previous studies, particularly for migrants who immigrated at a young age. Baker and Benjamin (1994) validate quasi-panel techniques and indicate that the cross-sectional inference of the assimilation rate provides a distorted view of immigrant integration.
They found that the entry earnings are falling across successive immigrant cohorts, while their assimilation rates are consistently lower. Borjas (1995) uses the 1970, 1980 and 1990 Public Use Samples of the U.S. Census and applies synthetic cohort methodology to construct a quasi-panel dataset, he documents how the contribution of immigrants to the skill endowment of the labor force changed during the 1980s and found the relative decline in wages across successive immigrant waves continued into the 1980s, also evidence of immigrants reaching wage parity with their native counterparts during their working lives is very insignificant. Moreover, Mexican and Asian immigrants are found to be unlikely to reach wage parity with their ethnically similar native counterparts. Friedberg (2000) employed the Census of Population in Israel, which precisely dates the timing of immigration to study the assimilation rate of immigrants in Israel. He focuses on the transferability and compatibility of skills acquired in the origin country, emphasising that a different impact on earnings is expected if the transferability and compatibility of skills are not perfect between the origin and host country. The empirical results show the positive effect of “year since migration” towards earnings, and hence support the assimilation hypothesis. Longva and Raaum (2003) present new estimates of the earnings assimilation of immigrants in Norway using the 1980 and 1990 Norwegian Population Census. They discovered that the earnings assimilation of immigrants in Norway from 1980 to 1990 differed
considerably between cohorts and by country of origin. The earnings of the 1970 to 1979 immigrant cohort improved by almost six percent over the decade. Furthermore, they showed that previous Norway assimilation studies using cross-sectional estimates exaggerate the assimilation of immigrants. Card (2005) emphasised that a major constraint in the United States literature of immigrant assimilation has been the absence of true panel data. He employed quasi-panel data and found that only a few of the 40 percent of immigrants who arrive to the United States without completing a high school education will ever catch up with the average earnings of natives. Nevertheless, most second-generation immigrants will catch up with the children of natives due to their relatively strong educational progress.

Table 2 summarises various country-specific assimilation studies using a quasi-panel and panel dataset. It seems that the assimilation results using the panel and quasi-panel dataset are not contradictory in these countries.

Table 2 Empirical Studies of Assimilation Hypothesis

Regarding the assimilation study for Chinese immigrants, Chiswick (1979) and Borjas (1987) regard Chinese immigrants as a homogeneous group, regardless of their country of origin. Borjas (1994) distinguishes Chinese immigrants from Mainland
China and Taiwan, but excludes Chinese immigrants from Hong Kong. Since these three areas have different political systems and are on different levels of economic development, Borjas (1987) suggests that the assimilation rates and wages levels of immigrants in host countries are significantly affected by the economic and political characteristics of sending countries. Hence, these three types of immigrants should differ in their level of assimilation rates and qualities. Lam and Liu (1993, 2002a) used Hong Kong 1981, 1986 and 1991 census data to analyse the assimilation rate. However, Borjas (1985)’s suggestion of an unobservable quality change in immigrants’ lives is ignored in Lam and Liu’s (1993, 2002a) studies, as there is no valid reason to justify this omitted variable bias. Therefore, in this paper, I take Borjas’ (1985) suggestion into account, even panel or longitudinal data is the best data source to perform assimilation rate estimation, but such a valuable dataset is rare, and Hong Kong is no exception. Thus, this paper adopts a quasi-panel dataset constructed by using Borjas (1985) strategy and original Hong Kong census data. The details of the quasi-panel dataset construction will be discussed in Section 4.

3 Research Hypotheses

The investigation target of this paper is Chinese immigrants whose assimilation pattern will be examined in four different but related dimensions: gender, marital
status, occupation and industry. For example, since Chinese immigrants with a family reunion purpose are granted preferential status in prioritising One-way permit registration while a family reunion implies that family members have been living in Hong Kong, these first-coming family members can either be male or female, although historical records show they are mainly male, it is interesting to study if the assimilation rate pattern is different between males and females. The hypothesis is that male immigrants should have a higher assimilation rate than female immigrants when other factors remain constant, this is due to most male immigrants are self-selected, whereas females are more often reunified after their spouse is granted permanent Hong Kong residency. In effect, male immigrants are self-selected, but female immigrants are somewhat passive in migration, it implies that male immigrants tend to be more adaptable in their workplace, hence, they reveal a higher assimilation rate.

Most people, including immigrants, find it easier to learn job-specific skills that have less emphasis on hands-on work experience, for instance, sales and services elementary occupations; transport and other service workers; metal and machinery trade workers; handicraft or printing and related trade workers; industrial plant operators; stationary machine operators and assemblers; and drivers and mobile machine operators. The following empirical analysis aims to examine the hypothesis
that the assimilation rate is higher for occupations with less emphasis on work experience and vice versa.

Moreover, before becoming indistinguishable from Hong Kong natives, Chinese immigrants are presumed to sacrifice their unique language, cultural and social characteristics. This adaptation process is of particular important for those immigrants who want to work in Hong Kong, as successful bargains always favour persons who are ethnically similar, thus linguistic and cultural differences can be one of the hurdles that immigrants need to overcome in order to succeed in the job market. Different industries or jobs have varying degrees of interpersonal contact. For example, insurance agents and front-line bankers are required to give presentations on different financial products, while for those employees who work in the manufacturing and construction industries, the interpersonal contact requirements are relatively lower.

This difference in the degree of interpersonal contact requirement may partially explain the assimilation rate difference across industries. This empirical analysis is going to examine the hypothesis that the assimilation rate should be lower in those industries that require more personal contact or interaction, and in which communication skills are essential. In other words, industries that require less interpersonal interaction should have a higher assimilation rate. Lam and Liu (1993) argued due to the country-specific nature of human capital required in the expanding
service sector, they expected new immigrants in the 1990s encounter more difficulties with their assimilation into the Hong Kong economy.

4. Data and Descriptive Statistics

The main data source is the Hong Kong census data collected by the Hong Kong Census and Statistics Department. These census datasets are a large-scale sample enquiry of a broad range of demographic and socio-economic characteristics of the population. Population censuses were conducted in 1981, 1991 and 2001, and a complete headcount of all persons and their age and sex information was also collected. The detailed socio-economic characteristics of the population were conducted on the basis of a large sample in these three censuses. A population by-census is conducted between two censuses; thus in 1986, 1996 and 2006, population by-censuses were conducted. A by-census differs from a full census in not taking a complete headcount of the population, but simply enquiring about the detailed characteristics of the population on the basis of a large sample. The size and characteristics of the entire population are inferred from the sample results in accordance with appropriate statistical theory. As a result, the statistics obtained from a by-census may be slightly less precise than those from a full census. Table 3 shows the census years and the number of persons recorded.
A census involves a complete enumeration of the elements of a population. The population parameters can be calculated directly in a straightforward way after the census is enumerated. The main advantage of census data is the large number of observations they provide. The quality of census data is high, and the data are often extremely detailed.

Table 3 Data Source

As mentioned in section 2, the presence of omitted variables bias and “cohort effect” would distort the assimilation rate estimation if cross-sectional data are used. Hence, Borjas (1984) suggests a way to construct a quasi-panel dataset using cross-sectional data. In this empirical study, Borjas’ approach is adopted and quasi-panel dataset construction procedures are as follows: The first step is to select all Chinese immigrants from the census dataset and use the census year minus the year of residence to estimate the approximate year of arrival for immigrants. Using “place of birth” as a categorical variable to select those respondents who born in China, the following formula is applied to estimate the year of arrival in the 1991, 1996, 2001 and 2006 censuses.
Estimated Year of Arrival = Census Year – Duration of Residence

For example: Estimated Year of Arrival for 1991 census equals 1991 minus duration of residence in Hong Kong reported in 1991 census. It is important to note that for the 1981 census, a variable called “Year of Arrival in Hong Kong” was recorded. However, there were only six years of arrival records, namely, 1976, 1977, 1978, 1979, 1980 and 1981. This dataset can be employed to supplement other census data. For the 1986 census, the variable ‘Duration of residence in Hong Kong’ is not available; therefore, the corresponding years of arrival cannot be estimated.

During the second step, after subsampling each of the census datasets by year of arrival, one open-ended group can be found in each subsample. For instance, in the 1991 census, there was an open-ended category called “Ten years or above”, and the corresponding year of arrival is “1981 or before”. This includes a number of possibilities for the year of arrival that cannot be estimated without further information. As the characteristics of immigrants who arrived in 1981 or before can be investigated using other census data, simply disregarding this open-ended subsample in the 1991 census should not lead to a measurement and other statistical errors. This data cleansing method can also be applied to other census data. After
discarding the open-ended subsamples, the third step involves combining the remaining subsamples with the same year of arrival, and as a result, a quasi-panel dataset is constructed. In the combination process, some interesting variables are extracted for further investigation and hypothesis testing.

5 Empirical Model

Borjas (1985) suggests a possible unobserved estimation bias in modeling the assimilation effect. In the essence of econometrics, the omitted variable bias is the bias in the ordinary least square (OLS) estimator that arises when one or more included predictors are correlated with an omitted variable. This bias arises when the omitted variables are one of the determinants of the dependent variable, and at least one of the included predictors is correlated with the omitted variables. Due to the possible presence of an unobserved omitted variables bias, the Fixed Entity and Time Effects Regression Model is selected to model the assimilation effect. One cannot presume that different immigrant cohorts are homogeneous in terms of their skills profile as well as earning powers. However, these are unobservable and can be easily omitted in the econometrics model. Hence, the time fixed effects model is required to handle this problem. Moreover, the performance of immigrants relative to natives varies across different industries and job rankings. Thus, an entity fixed effect model
helps to fix this unobservable variable omission problem in econometrics modeling.

**Empirical Model**

\[ \text{Income} = \text{Income Determinants Effects} + \text{Entity Fixed Effects} + \text{Time Fixed Effects} \]

The income determinants effect refers to conventional human capital components, which include years of schooling and work experience. The entity fixed effect aims to control for omitted variables, which vary across entities or states but do not change over time. One for each entity can be represented by a set of dummy variables, which represent the effects of all omitted variables that differ from one entity to the next but remain constant over time. For instance, entities represent different places of birth, whether the immigrants are new immigrants, different industries, and job rankings, etc. Last but not least, the time fixed effect is used to control the unobserved effects that change over time but remain constant across entities or states. It is appropriate to assume that different Chinese immigrant cohorts may change in terms of skills as well as migration intentions over different years of arrival. The empirical model for testing assimilation effect on earning is as follow:
\[ \ln Y_{ij} = A_1 + B_1(S_{ij}) + B_2(\text{EXP}_{ij}) + B_3(\text{EXP2}_{ij}) + B_4(D1_{ij}) + B_5(D1_{ij} \times \text{NEW}_{ij}) + B_6(D1_{ij} \times S_{ij}) + B_7(D1_{ij} \times \text{EXP}_{ij}) + B_8(D1_{ij} \times \text{EXP2}_{ij}) + B_9(D1_{ij} \times YD_{ij}) + B_{10}(D1_{ij} \times YD2_{ij}) + \sum B_k(D1_{ij} \times \text{Cohort}_{ij}) + \varepsilon \]

Table 4, 5 and 6 illustrate the meanings of the subscripts used, variables concerned as well as parameters respectively.

Table 4 Meaning of subscripts in the empirical model.

Table 5 Meaning of variables in the empirical model.

Table 6 Meaning of parameters in the empirical model.

There are several statistical assumptions in this empirical model. Firstly, the error term has a zero conditional mean, given all \( N \) values of \( I \) for that entity, which implies that there is no omitted variable bias. Second, the variable for one entity or state is distributed independently of, but identically to, the variables for another entity or state. In other words, it assumes that the variables are i.i.d. across entities. This assumption is valid if entities or states are selected by random sampling from the population. Third, one assumes it is impossible that one of the independent variables is a perfect linear function of the other independent variables, that is, there is no existence of
perfect multicollinearity. Fourth, the errors ($\varepsilon$) in the fixed effects regression model are uncorrelated over time and conditional on the independent variables. The errors ($\varepsilon$) consist of time-varying factors that are determinants of the dependent variable but not included as independent variables. If the errors ($\varepsilon$) consist of random factors that are uncorrelated from one year to the next and are conditional on the independent variables and the entity or state fixed effects, then the error ($\varepsilon$) is uncorrelated from year to year and conditional on the independent variables, and this assumption holds. If the errors are correlated over time for a given entity or state, this error is said to be auto-correlated or serially correlated.

Regarding the estimation, given that the data structure and nature has validated the aforementioned assumptions, ordinary least square (OLS) estimation can be used. However, this model has its own limitations, since the Fixed Entity Regression model aims to control for unobserved omitted variables that differ across entities but remain constant over time. In other words, if the unobserved variable does not change over time, then any changes in the dependent variable must be due to influences other than these fixed characteristics. On the other hand, the Fixed Time Effects Regression Model controls the omitted variables that vary over time but remain constant across entities. Despite these merits, the Fixed Entity and Time Effects Regression Model
cannot control for unobserved omitted variables that vary across entities and over time, for example, if the immigrants have changed their marital status or occupation. The impact of this change on the assimilation rate cannot be estimated in this model.

6 Empirical Results

6.1 Gender

Table 7 shows the human capital estimation results for males and females, and as usual, the overall effects of schooling and work experience on earnings are positive. On average, one additional year of schooling and work experience contributes to a 12.12 and 6.85 percent increase in earnings, respectively, the results are similar to the previous studies conducted by Lam and Liu (1993, 2002a). There are no significant differences between males and females in terms of the effect of schooling and work experience on earnings. For Chinese immigrants with a comparable background in terms of years of schooling and work experience, the general consensus is that natives are able to earn more than their counterparts, which the empirical results strongly support. The earnings of Chinese immigrants are normally lower than natives, for instance, Chinese immigrants’ earnings are 40.23 percent below their native counterparts. While this earning disadvantage is worse for females than males, both immigrants’ earnings are 71.75 percent and 26.46 percent less than their counterparts,
respectively. New Chinese immigrants refer to those have resided in Hong Kong for less than five years, and their earnings are expectedly worse than natives to a greater extent. For example, the earnings of all new immigrants are 47.48 percent lower than natives, while new male immigrants only earn 50.23 percent of natives’ income. However, there is no significant difference between ‘old’ and new female Chinese immigrants; both ‘old’ and new earn 71.75 percent less than their native counterparts. Due to the different qualities of schooling between China and Hong Kong (Lui and Suen 1998) as well as non-transferrable skills and work experience, the earning power of individuals with schooling and work experience obtained in China is typically lower than native. On average, for each additional year of schooling and work experience, Chinese immigrants earn 5.3 percent and 4.98 percent less than natives. In short, the assimilation effect is valid, regardless of gender, whereas male immigrants assimilate similarly to female immigrants.

6.2 Assimilation Hypothesis

For the assimilation rate estimation, the year of duration is employed and the assimilation hypothesis is not strongly supported by empirical evidence. Given one additional year of duration, the earnings of Chinese immigrants increase by 5.72 percent. Female immigrants assimilate slightly better than male immigrants; the
assimilation rate for females and males is 5.42 percent and 5.13 percent, respectively.

Based on these estimates, the number of years of duration for which immigrants’ earnings can converge with their native counterparts can be approximated in the following ways:

First of all, if the initial income for natives is assumed to be $10,000, regardless of gender, the earnings of old and new Chinese immigrants are computed based on the estimation results in Table 7, with the results shown in Table 8.

Table 8 Hypothetical example of earnings between natives and immigrants

The traditional way to interpret the convergence of the income or assimilation effect only focuses on the sign of the year of duration coefficient (Friedberg 1992; Dustmann 1993; Baker and Benjamin 1994; Borjas 1995; Friedberg 2000; Hu 2000; Hum and Simpson 2000; Duleep and Dowhan 2002; Longva and Raaum 2003; Constant and Massey 2003; Hum and Simpson 2004; Beenstock et al. 2005; Card 2005). However, when one considers the effect of the year of duration on immigrants’ income, the work experience effect on income for natives occurs simultaneously. In
other words, if natives’ work experience effect on income is relatively higher than immigrants’ assimilation effect on income, even if the sign of the year of duration coefficient is positive, one should expect an income divergence rather than convergence. Table 7 results indicate that even though the assimilation rate for immigrants is positive, one should expect that income convergence has been occurring in this economy. However, the fact is that the work experience effect on income for natives is even stronger, thus one should expect that income divergence exists. Figure 2 show the income differentials of pattern changes based on estimation results. It is obvious that income differentials, defined as natives’ income minus immigrants’ income, are increasing at a decreasing rate, and after almost thirty years of duration, the income differentials start to decline. Nonetheless, it is still a positive differential, in other words, immigrants’ assimilation exists and income gaps are widening.

Figure 2 Income Differentials (Natives’ Income – Immigrants’ Income)

6.3 Marital Status

Another interesting finding can be seen in Table 8, which shows the assimilation pattern between single and married immigrants. The standard human capital
determinants such as schooling and experience yield similar results in Table 7, in which immigrants’ earnings are generally lower than their comparable native counterparts. However, this earning disadvantage is worse for married Chinese immigrants than single immigrants, regardless of gender. For instance, the earnings of married male and female immigrants are 42.93 and 66.22 percent lower than their native counterparts, whereas these figures are only 11.54 and 14.44 percent for single males and single females, respectively. With regard to assimilation rate, married male immigrants (6.2 percent) are assimilating more or less the same as married female immigrants (6.3 percent), whilst single male immigrants (4.39 percent) are also assimilating in nearly indistinguishable manner as single female immigrants (4.43 percent). On average, married immigrants are assimilating better than single immigrants. This can be attributed to the fact that a different marital status implies a variety of responsibilities; married persons are generally more willing to learn and work harder than single persons. Thus, if earnings reflect productivity, it is sensible that married immigrants assimilate better than single immigrants. In other words, regardless of gender, married immigrants assimilate better than single immigrants, whereas immigrants with the same marital status assimilate similarly.
6.4 Occupation

Lam and Liu (1997) defined economic assimilation as a process whereby an immigrant who stays longer in the receiving country earns more than an equivalent immigrant who stays for a shorter time period. When one discourses on economic assimilation, earnings are used as major indicator for measuring the economic performance of immigrants compared to natives. However, previous studies estimated the assimilation rate of immigrants without considering the fundamental earning differentials amongst different occupations. For instance, it is generally believed that the income level of managers and administrators is higher than workers in elementary occupations. Hence, if samples are simply combined without justifying the ignorance of possible occupational earnings variations, the estimation results may be biased toward the occupation, of which labour employment is relatively large and remunerations are comparatively high. One solution is to subsample the dataset by occupation; this approach enables us to examine the assimilation patterns amongst different occupations, the results of which are shown in Table 9. The consensus of the immigrants’ earning disadvantage did not occur for all occupations. Chinese immigrants whose occupation is manager, administrator, professional, or associate professional earn more than natives; these earning premiums are approximately 30.63, 26.47 and 27.27 percent, respectively. Nevertheless, the earning disadvantage can still
be found in two other occupations: craft and related workers, and plant and machine operators and assemblers. For other occupations such as clerks, service workers, shop sales workers and elementary occupations, there is no significant evidence to support an earning disadvantage. In addition, new immigrants earned less on average than natives, regardless of occupation. Lam and Liu (1997) conclude that the earning power of immigrants’ schooling and work experience is significantly lower than that of natives, Table 9 shows that Lam and Liu’s (1997) conclusion is partially supported by the empirical results and cannot be generalised amongst occupations. For instance, the earning power of schooling is lower than natives’ coefficients only in occupations such as managers and administrators, associate professionals, and clerks, whereas the earning power of work experience is also lower than natives’ coefficients in occupations such as managers and administrators, associate professionals, clerks, service workers, shop sales workers and elementary occupations. The different occupation requirements may largely account for these results. Normally, an earning disadvantage for immigrants cannot be found in those occupations which fully recognise the immigrants’ qualifications and work experience obtained in China or simply do not require any school training or relevant work experience.
Figure 3 shows the assimilation rates amongst different occupations, and the average rate is 4.5 percent. The first two and the last occupations yield an exceptionally low assimilation rate. For the first two occupations, managers and administrators and professionals, the job requirements normally consist of professional qualifications, which are internationally recognized, in addition, country-specific skills are relatively less important than other occupations, which explains why the year of duration may account for immigrants’ earning increments, even though the assimilation effects are less than that of other occupations. The assimilation rate of elementary occupations such as mining, construction manufacturing, agriculture and fishing is similar to the first two occupations. Given that the nature of these occupations certainly differs from each other, elementary occupations are typical jobs that do not require much hands-on experience or country-specific skills. Thus, even labourers who accumulate a number of residence years in Hong Kong find that their earnings in elementary occupations increase at a lower rate. To conclude, a conventional earning disadvantage cannot be found in all occupations, and assimilation rates also differ amongst occupations. The key issue is whether employers in such occupations recognise immigrants’
qualifications and work experience obtained in the sending country. It is much depending on the human resources policies of different occupations, and no particular type of occupation in which immigrants work must suffer in this regard. In short, the relationship between the importance of work experience and the assimilation rate tends to be negative. Furthermore, a polarisation of the assimilation rate was discovered in this occupational analysis; employees of professional and elementary occupations assimilate much worse than in other occupations.

6.5 Industry

The assimilation rates for immigrants working in different industries are also estimated and shown in Table 10. As indicated in this table, the earning discrimination for immigrants is not applicable to all industries; Table 10 also shows a comparable pattern to different industries. Wholesale, retail and import or export trades, and transport, storage and communication industries normally require labours to possess proficient communication skills and a certain level of country-specific skills. The job requirement nature of these industries partly explains why Chinese immigrants suffer a 46.25 percent and 54.64 percent ‘discount’ on earnings, respectively. As usual, new immigrants, defined as Chinese immigrants who have been living in Hong Kong for
less than five years, are always paid unfairly compared to natives; on average, new immigrants suffer from a pay reduction of 10.55 percent. Table 10 also indicates a different apparent assimilation pattern amongst industries. Most immigrants are confident about using their mother language (such as Mandarin or Putonghua) in daily communication, and language is the primary cornerstone for developing efficient and effective interpersonal skills. However, the employees of most Hong Kong companies communicate in Cantonese and English. Only some of them communicate in Cantonese, English and Putonghua. This may explain the results that one can summarise from Figure 4; industries such as wholesale, retail and import or export trades, restaurants or transport, storage and communication or financing, insurance, real estate and business services or community, social and personal services that require labourers to possess proficient communication skills yield a lower assimilation rate, while industries such as manufacturing and construction, which mainly require physical involvement rather than interaction with others, enable immigrants to assimilate better than other industries. These results can be attributed to the accumulation of country-specific communication and interpersonal skills.

Figure 4 Assimilation Rate (By Industry)
To conclude, immigrants assimilate better in industries with lower work experience and interpersonal skills requirements. Immigrants also assimilate better in occupations in which the importance of work experience and interpersonal skills requirements are lower.

7 Conclusion

This paper aims to investigate how the years since migration affect the earnings of Chinese immigrants in Hong Kong. This study does not presume that the assimilation hypothesis is valid. Rather, it proposes that the validity of this hypothesis depends on circumstances. The major contribution of this paper is to find out in what particular situation the assimilation hypothesis is true, and in what situation it is not. Borjas’ approach (1985) is used to construct a quasi-panel dataset and test the assimilation effect using different subsamples. The subsampling is performed based on different dimensions: gender, marital status, occupation and industry. The validity of the assimilation is expected to be different between males and females, amongst different marital statuses, occupations and industries. For gender, the results show that male immigrants assimilate similarly to female immigrants, but the general consensus is that the self-selected male group is more productive. New immigrants almost always
suffer from an earning disadvantage. Regarding the assimilation hypothesis, it was found that immigrants’ assimilation exists, but the income gaps are still widening, it implies that immigrants’ earning is increasing with their years of residence, but the increasing rate is less than that of natives, thus, income gaps between them are widening. In addition, married immigrants have a higher assimilation rate than single immigrants, regardless of gender; married male immigrants assimilate similarly to married females. Moreover, the relationship between the importance of work experience and the assimilation rate tends to be negative and polarisation of the assimilation rate was discovered in the occupational analysis; employees of professional and elementary occupations assimilate much worse than in other occupations. Last but not least, the result confirmed an inverse relationship between assimilation rate and interpersonal skills requirements. The above findings are essential, as they suggest several guidelines to Hong Kong immigration policymakers regarding methods of facilitating immigrants to adapt the life in Hong Kong. For instance, the Quality Migrant Admission Scheme mostly attracts professional immigrants to participate in the Hong Kong labour market, empirical results showed their assimilation rate is low that imply their earnings are not greatly affected by their year of duration in Hong Kong. In addition, family reunion is always used to justify the priority of granting a one-way permit to Chinese immigrants, empirical results
show that married immigrants have a higher assimilation rate than single immigrants, regardless of gender; married male immigrants assimilate similarly to married females and married females do assimilate better than single females. Consequently, policymakers need to take these results into account in order to refine a correct entry arrangement of dependants in the future.