



Research Report

Zhuoni Zhang and Xiaogang Wu

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Immigrants in Hong Kong, 1991-2006

Report 10-711
June 2010

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Zhuoni Zhang
(zhzhni@ust.hk)

Xiaogang Wu
(sowu@ust.hk)

Social Science Division
The Hong Kong University of Science and Technology
Clear Water Bay, Kowloon
Hong Kong SAR

Population Studies Center Research Report 10-711

June 2010

An earlier version of this paper was presented at the International Sociological Association, Research Committee on Social Stratification and Mobility (ISA-RC28) Spring Meeting in Florence, Italy, May 15-18th, 2008, and the Population Association of America annual meeting in Dallas, April 15-17th, 2010.

We are grateful for the comments and suggestions from participants of these two conferences, and the financial support from the Research Grants Council via a Public Policy Research Fund (HKUST6003-PPR20051) and a Strategic Public Policy Research Fund (HKUST6001-SPPR-08). Direct all correspondence to Zhuoni Zhang (zhzhni@ust.hk), Social Science Division, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong SAR.

ABSTRACT

This paper analyzes a series of population census and by-census data from 1991 to 2006 to examine the economic assimilation of Chinese immigrants in Hong Kong, focusing on their employment, occupational and earnings attainments. We pay particular attention to the assimilation of immigrants over time, and the effect of changes in the (overall) quality of the immigration cohort as a result of the immigration policy shift after Hong Kong's reunification with China in 1997. Results show that at the time of entry, mainland immigrants were less likely to be employed, more likely to be trapped in elementary occupations, and earned much less than the natives. As they stayed longer, the gaps tended to decrease, but most immigrants were unable to reach parity with the natives with respect to earnings throughout their working lives. The pattern differed by gender in that men generally assimilated at a faster pace than women. No evidence suggests any significant effects on overall income inequality due to changes in the (overall) quality of the immigrant cohort after 1997.

INTRODUCTION

Immigrants' disadvantages in the labor markets of host countries have been well documented, as they usually arrived with a lack of human capital, labor market skills and fluency in the dominant language of their destinations (Chiswick 1979). However, scholars have not reached a consensus on the experience of immigrants after their arrivals, in particular the process of how they are assimilated into the local labor markets. A large body of literature based on analyses of cross-sectional data have shown that the relative earnings of immigrants tend to increase with the number of years after their immigration (e.g., Borjas 1982; Borjas and Tienda 1985; Carliner 1980; Chiswick, 1979; DeFreitas 1980). Some scholars argue that the earnings convergence is due to the immigrants becoming more assimilated as they acquire more country-specific skills such as the local language, culture and knowledge of labor markets. Other scholars (Borjas 1985, 1995) contend that the revealed convergence based on cross-sectional analyses may have misconstrued the effects of changing immigrant cohorts as the assimilation effects. They argue that earlier immigrants earn more than recent arrivals not because they are more assimilated as time elapses but because they differ from recent arrivals in cohort quality, mainly as a result of immigration policy changes (Baker and Benjamin 1994; Bloom and Gunderson 1991; Bloom et al. 1995; LaLonde and Topel 1992). This debate has continued to haunt the literature on immigration over the years (Constant and Massey 2005; Green 1999).

Against this context, Hong Kong provides a unique case to re-examine these controversies. The majority of the population in the territory is ethnic Chinese, of which one third emigrated from mainland China in the past 50 years. Most of the new arrivals then were from the neighboring Guangdong province who spoke the same dialect (Cantonese) as the natives in Hong Kong. Yet the process of cross-border migration from China to Hong Kong, the former British colony and now the Special Administrative Region under the principle of "one country, two systems", to a large extent imitated the international migration between two countries. However, mainland immigrants in Hong Kong faced minimal barriers in culture, life-style, and ethnic identity when trying to assimilate both economically and socially. The biggest hurdles are language (English and also Cantonese for immigrants coming from outside of the Guangdong province), education, and work experience specific to the local bilingual labor markets. These disadvantages, however, is relatively easier to alleviate over time than those faced by typical immigrants to Europe and North America.

Hong Kong's handover to China in 1997 has led to certain changes in the immigration policies toward Chinese immigrants. On the other hand, the 1990s has witnessed a stagnant economy

with exacerbating income inequality in Hong Kong. The new immigrants were particularly disadvantaged, often trapped in unemployment and poverty. Some scholars even claimed that the disadvantages faced by low-skilled new immigrants and their families were major factors contributing to the rising income inequality in Hong Kong (e.g., Lam and Liu 1998; Lui 1997).

Previous studies of Chinese mainland immigrants in Hong Kong, based on cross-sectional data, have revealed the disadvantages they faced in their initial class positions, subsequent mobility and income attainment (Chiu et al. 2005; Lam and Liu 1998; Lui 1997). These studies, however, have not extended to the immigrants arriving after 1997 under the new immigration policy, and tended to focus on men only, whereas women are in fact the main beneficiary of the new policy. Moreover, empirical findings on how immigrants fared over time compared to natives are not consistent with each other. For example, while some scholars reported that the duration of residence in Hong Kong has no effect on the immigrants' labor market outcomes (Chiu et al. 2005), other scholars show that the socioeconomic gap between immigrants and natives has been even widening over time (Lam and Liu 2002); still another research claims that, as immigrants stayed longer, they tended to converge with the natives in socioeconomic status, at least in respect to occupational attainment (Liu et al. 2004).

The inconsistent findings, we suspect, may be due to two factors. First, empirical analyses often confused the time effect with the (immigration) cohort effect, the former referring to the variation in the same immigrant cohort over time, the latter referring to the variation in the groups arriving in Hong Kong at different times. Second, these analyses employed different measures of labor market outcomes, ranging from employment status to occupational attainment and earnings. The determinants of these three major measures of economic assimilation are likely not identical.

In this paper, we attempt to examine the Chinese immigrants' economic assimilation in Hong Kong's labor market from 1991 to 2006, using employment, occupational attainment, and earnings as the three major indicators. Based on four waves of repeated cross-sectional data from population censuses and by-censuses, we differentiate the effects of changes in cohort quality from assimilation effects over time, and assess the impact of immigration policy changes since the handover on rising inequality and poverty in Hong Kong. We also estimate the number of years to immigrants' equality in terms of earnings vis-à-vis natives to gauge the process of their economic assimilation. Because the immigration policy changes toward family reunion are highly biased towards women, we conduct the analyses for men and women separately.

BACKGROUND: CHINESE IMMIGRANTS IN HONG KONG SINCE 1991

Chinese immigrants have formed a significant portion of Hong Kong's population over the past century. Hong Kong has witnessed several phases of immigrant influxes from China under different immigration policies (Chan et al. 2003). The first tidal wave of Chinese immigrants to Hong Kong could be dated back to the 1930s and 1940s when China was caught in the Anti-Japanese War and the Civil War. Around 1.9 million Chinese people moved to Hong Kong as refugees (Wan 2001).

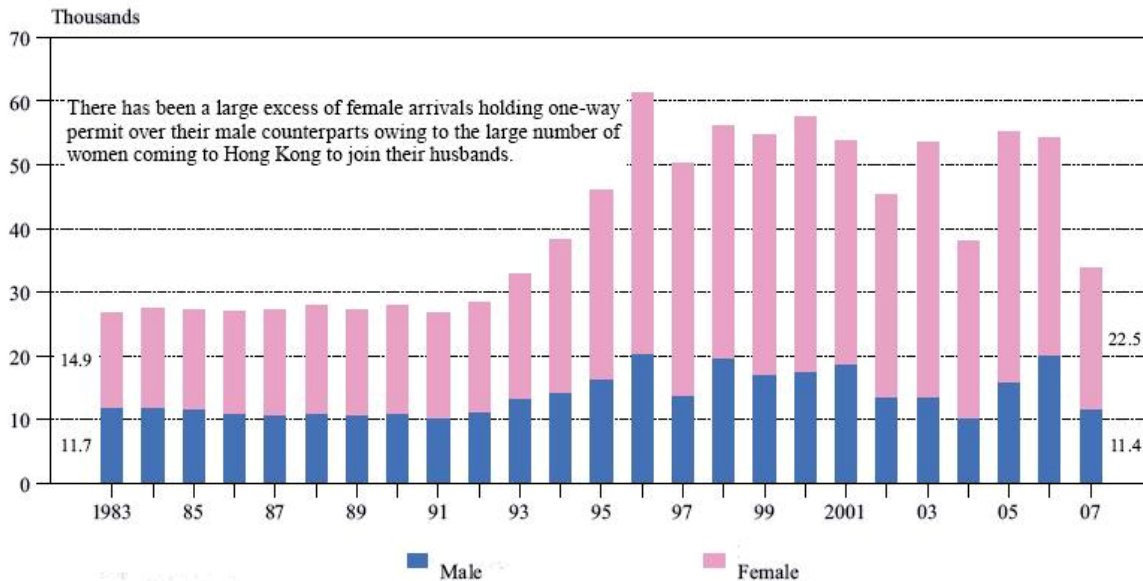
The second phase occurred from the early 1960s to the late 1970s. A very strict policy was implemented before the mid-1960s to prevent the surge of refugees escaping from the 1959-1961 Great Famine in China, according to which illegal immigrants would be repatriated immediately once caught; however, this strict policy was abandoned in 1967 due to labor shortage and immigrants were granted permanent residency once they set foot in Hong Kong. From 1974 to 1980, the immigration policy became what was known as the "touch-base" policy — as long as they could escape and managed to reach an urban area in Hong Kong, they would be allowed to apply for an identification card and to reside and work. Although the immigration policy changed several times during this period, a great number of people had moved from mainland China to Hong Kong, legally or illegally, with roughly half of the Hong Kong residents originating from the mainland in the 1970s (Chan et al. 2003).

The third phase of Chinese immigrant inflow began in the early 1980s and last till recently. The immigration policy was underpinned by a consistent principle toward illegal immigrants, known as the "once caught immediately repatriated", and a one-way permit quota system for potential legal immigrants for family reunions. As a result, it became difficult for mainlanders to cross the border illegally. Even if they succeeded in reaching Hong Kong, they could only stay as illegal residents and would not be granted legitimate rights for education and employment. Hence, the number of illegal immigrants from mainland China decreased dramatically.

On the other hand, as Hong Kong approached its return to China, the government started to deal with potential legal immigrants who had the right of abode in Hong Kong but were still in the mainland. According to the Sino-British Joint Declaration, Hong Kong permanent residents include those Chinese citizens born in Hong Kong before or after the establishment of the Hong Kong Special Administrative Region, Chinese citizens who have ordinarily resided in Hong Kong for a continuous period of not less than seven years before or after the establishment of the Hong Kong Special Administrative Region, and their children born outside Hong Kong who have Chinese nationality. This definition allows a remarkably huge number of people in mainland China to apply for the right of abode in Hong Kong. For instance, over 310,000 children of Hong Kong permanent residents still lived in mainland China in 1991. The one-way

permit quota system was thus launched in 1983 to enable qualified mainlanders to come to Hong Kong for family reunion in an orderly manner. As Figure 1 shows, the total number of new arrivals from mainland China via a one-way permit increased drastically since the early 1990s, reaching the peak of 60,000 per year in 1996, and staying at around 50,000 per year thereafter.

Figure 1. New Arrivals from Mainland China who Held One-way Permits



Source: Census and Statistics Department (CSD). 2008. *A Graphic Guide on Hong Kong's Development (1967-2007)*. Hong Kong: Government Printer.

Hong Kong's handover in 1997 has facilitated the changes in the daily quota system with a larger proportion of the quota allocated for family reunions. Before the handover, at least half of the daily quota had no restrictions on family reunion, but the number decreased to only 8% from the beginning of 1998, with 138 out of the daily quota of 150 limited to Hong Kong residents' spouses and qualified children. The qualified spouses have either been separated from their husbands/wives for more than ten years or have a child under age 14 in the mainland. The number of immigrants coming under the other schemes which target talents and professionals are much smaller than those coming for family reunion. For example, only 405 applications were approved based on the Admission Scheme for Mainland Talents and Professionals in the entire year of 2006 (Immigration Department 2006).

Cross-border marriages are popular between Hong Kong locals and mainland Chinese. Because cross-border marriages have been dominated by Hong Kong grooms-mainland brides (Census and Statistics Department, 2007), the increase in recent arrivals from mainland China for family reunion via a one-way permit is mostly due to the women coming to join their husbands in Hong

Kong. Female immigrants are characterized by several distinctions that set them apart from their male counterparts. Typically they are less educated, come from rural areas of the neighboring Guangdong province, and possess few skills applicable to/demanded by Hong Kong's labor markets. They are bound to a more social than economic role with a large proportion being economically inactive after their arrival. According to a survey on persons from the mainland who had resided in Hong Kong for less than 7 years in 2005, 74% of them were female and the median age of these female immigrants was 34. Among all the adult immigrants (age \geq 15), only 5% had attained tertiary education, significantly lower than the corresponding rate for the entire population of Hong Kong (23%); 75% were married and 35% were home-makers. Around half of all the new arrivals were from households with monthly household income of less than 10,000 Hong Kong dollars while the corresponding rate for the entire population was 21% (Census and Statistics Department 2006).

Hence, the influx of immigrants under the family reunion policy has raised concerns about whether the decline in cohort quality has worsened the local labor markets and lowered the wages of unskilled labor in Hong Kong, increased government welfare expenditure, and contributed to the rising poverty and inequality since the 1990s (Lam and Liu 1998).¹ Within this context, we examine how the mainland immigrants' socioeconomic disadvantages in labor markets have changed from 1991 to 2006 in Hong Kong.

RESEARCH DESIGNS AND HYPOTHESES

Similar to immigrants elsewhere, mainland immigrants in Hong Kong, tend to be at disadvantaged positions compared to natives upon their arrival. Social scientists term the difference as the "entry effect." The entry effect exists because immigrants need time to transfer the human capital they've accumulated in the mainland, learn the skills and languages that are relevant to the local labor markets, and adapt themselves to new environments for upward social mobility. Therefore, we propose to test the following hypothesis:

Hypothesis 1: *Upon their arrivals, Chinese immigrants are less likely to be employed, and tend to have lower occupational status and earnings than Hong Kong natives.*

Despite the disadvantages (the entry effects) upon arrival, new immigrants from the mainland have a good chance of assimilating into the labor market over time, as the cultural barriers between immigrants and natives are minimal. Indeed, a series of government/non-profit organization services, free of charge, are in place for new immigrants (officially defined as those who have been living in Hong Kong for less than 7 years) to facilitate their integration into the

¹ The Gini coefficient, a common measure of household income inequality, has increased from 0.476 in 1991 to 0.535 in 2006 (Census and Statistics Department 2007).

local community. It is believed that, as they stayed longer, the socioeconomic gap between immigrants and their native counterparts would decrease and even disappear.

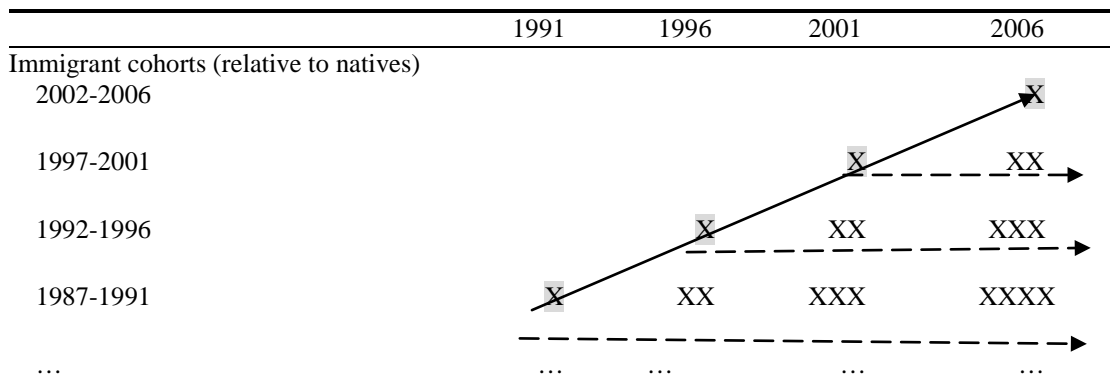
Indeed, many empirical studies in other countries have also found positive effects on immigrants' labor market outcomes as a result of a longer stay (Borjas 1985; Chiswick 1979; Lalonde and Topel 1992). Immigrants' earnings grow more rapidly over time than those of the native-born citizens and will at some stage reach parity with the natives' earnings (Bloom et al. 1995; Constant and Massey 2005). In Hong Kong, analysis also shows that the occupational segregation of Chinese immigrants diminished over time. As the duration of residence in Hong Kong increased from less than 5 years to more than 20 years, the occupational segregation of Chinese immigrants decreased from 22% to 5%; and for immigrants who came to Hong Kong before they reached 10 years of age, the occupational segregation did not even exist (Liu et al. 2004). This is likely true also for earnings. We therefore propose to test the second hypothesis on the assimilation effect:

Hypothesis 2: The gaps in employment, occupational and earnings attainments between Chinese immigrants and Hong Kong natives tend to decrease over time.

Conventionally, we compare immigrants arriving in different years with Hong Kong natives. If earlier immigrants fared better than more recent immigrants, the evidence would suggest the existence of assimilation effects. However, assimilation effects or entry effects could be confounded with the change in the quality of immigration cohorts, as suggested in the previous section. The change in the cohort quality suggests that new arrivals from after 1997 would fare much worse than those from before 1997, as the requirements were somehow lowered after 1997. Therefore, we propose the third hypothesis on the effect of immigrant cohort quality.

Hypothesis 3: The gaps in employment, occupational attainment and earnings between the newly arrived immigrants and natives are larger after 1997 than before.

Ideally, we would need to follow the same group of individuals in a longitudinal study to examine the process of economic assimilation for immigrants. This type of data, as far as we know, is not available in Hong Kong. Instead, we employed a series of cross-sectional data from population censuses and by-censuses that allowed us to construct a set of synthetic cohorts of immigrants and examine their labor market experiences over time (Borjas 1987). As illustrated in Figure 2, the columns represent immigrants arriving in different years (immigrant cohort), and the rows represent different years of reference (time). All immigrant cohorts are compared to Hong Kong natives.

Figure 2. Analytical Strategies to Identify Cohort and Time Effects

Conventional analysis based on cross-sectional data typically compares columns, namely, immigrants arriving in different years (residence duration in Hong Kong), in which the cohort effect and the time effect cannot be separated from each other. With the repeated cross-sectional data, we can compare rows and diagonal cells as in Figure 2. Row comparisons show how much the same immigrant cohorts have improved over the years (assimilation effects), whereas diagonal cell comparisons show how well different cohorts have been performing in the labor market upon their arrivals. If the argument on the declining cohort quality holds true, we would expect new immigrants from after 1997 to do significantly worse than those from before 1997 (cohort effect). Whether the entry effect exists can be obtained through column comparisons.

DATA, VARIABLES AND METHODS

We use five percent samples of the 1991, 1996, 2001, and 2006 population censuses and by-censuses in Hong Kong, which contain detailed and consistent measurements of employment, occupation and earnings, language, education, duration of stay in Hong Kong, birth place, ethnicity and nationality, as well as other demographic characteristics. We exclude full-time students and retired people and restrict the analysis to individuals aged between 25 and 64.

We divide all Chinese immigrants into five cohorts based on the year they arrived in: pre-1987, 1988-1991, 1992-1996, 1997-2001, and 2002-2006. The pre-1987 cohort includes those immigrants who had resided in Hong Kong for more than 4 years in the 1991 census data, 9 years in the 1996 by-census data, 14 years in the 2001 census data, and 19 years in the 2006 by-census data. The 1988-1991 cohort includes the most recent immigrants who had been residents for less than 4 years in 1991, 5-9 years in 1996, 10-14 years in 2001, and 15-19 years in 2006. While individuals in the same cohort are not identical across different census/by-census years, they are all representative samples of the same immigration population who entered Hong Kong within a certain period.

As we cannot identify the exact number of years an immigrant had been in Hong Kong in the 1991 data for those who had stayed for 10 years or more, nor can we identify the same in the 1996, 2001, and 2006 data for those who had stayed for 20 years or longer, we aggregated these immigrants into the pre-1987 cohort. Given the large variation in the years of residency in Hong Kong within this cohort, we estimated the coefficients of this cohort in the model but will not interpret them in the text. For the same reason, we cannot capture the effect of age at arrival, although it has been recognized as an important factor in determining the assimilation outcomes of immigrants (Stevens 1999; Myers et al. 2009).

We wanted to examine the inequality in employment, occupational attainment and earnings between Chinese immigrants and Hong Kong natives, and to show how the gaps change over time and across immigrant cohorts. Employment denotes whether one has a job or not at the time of interview, and is a dummy variable (yes=1). Among those who have a job, we also coded their occupation into a dummy, indicating whether the respondent is employed in an elementary occupation (yes=1), including as street vendors and related workers, domestic helpers, cleaners and related workers, messengers, guards and security workers, transport laborers, other elementary service occupations, mining and construction laborers, manufacturing laborers, and agricultural and fishery laborers. Among the nine broad classifications of occupations in Hong Kong, elementary occupations are ranked the lowest.² Income, another measure of labor market outcomes, is a continuous variable. We took the natural logarithm of monthly income from main employment as the dependent variable in regression analysis.

Other independent variables include language skills, marital status, age, and education. Language skills consist of two dummy variables, English and Mandarin. English is coded 1 if the person can speak English and 0 otherwise, and similarly for Mandarin. Marital Status is a dummy variable with 1 representing married and 0 otherwise. Education is measured by the level attained, including primary school or below, middle school, high school, and college or above.³

² A broad classification of occupations in Hong Kong includes (1) managers and administrators, (2) professionals, (3) associate professionals, (4) clerks, (5) service workers and shop sales workers, (6) skilled agricultural and fishery workers, (7) craft and related workers, (8) plant and machine operators and assemblers, and (9) elementary occupations.

³ While age at arrival has been recognized as an important factor in determining the assimilation outcomes of immigrants (Stevens 1999; Myers et al. 2009), the data is incomplete for immigrants who arrived earlier before 1987. Early immigrants whose exact year of arrival in Hong Kong cannot be identified accounted for 38.8%, 21.13%, 24.07%, and 20.08% of the sample, respectively, in the 1991, 1996, 2001, and 2006 census and by-census data.

Occupation is also used as an explanatory variable for earnings attainment, with four categories: 1=white-collar workers, 2=service and sales workers, 3=elementary occupations and 4=others. They are coded into a set of dummy variables in our regression analysis.

We used binary logit models to analyze the likelihood of being employed and the likelihood of being in elementary occupations if employed, and Ordinary Least Square (OLS) regressions to analyze earnings inequality. To illustrate the assimilation process, we also used the method proposed by Bloom et al. (1995) to calculate the number of years to equality in earnings between immigrants and natives, based on OLS regression results for different immigrant cohorts by language skills.

DESCRIPTIVE STATISTICS

Table 1 presents descriptive statistics for the three major dependent variables: employment rate, occupations and income, and select independent variables. The sample sizes are different for the three variables. For the analysis of employment, the entire working-age population except full-time students and retirees are included; for the analysis of occupation, only those who have a job are included, and for the analysis of income, only those who have a job and income are included.

As the table shows, irrespective of when the cohorts arrived, immigrants are less likely to be employed than Hong Kong natives, for both men and women and for all years. The gaps are much larger among women than among men. For instance, 97.2% of men born in Hong Kong were employed in 1991, with the percentage declining slightly in 2006. In contrast, 83.9% of immigrant men who have been residing in Hong Kong for less than five years (1987-1991) were employed in 1991, with the percentage increasing to 89.4% in 2006. For women born in Hong Kong, the employment rate increased from 64.1% in 1991 to 72.0% in 2006, whereas the employment rates for immigrant women declined from 57.6% in 1991 to 43.5% in 2006 during the first five years of residence. Hence, the gaps between new immigrants and natives in employment rate had decreased from 13.3% in 1991 to 4.6% in 2006 for men, but had in fact increased from 6.5% in 1996 to 28.5% in 2006 for women.

Among all those who were employed, the percentages in elementary occupations are much higher for immigrants than for natives, both at the time of entry into Hong Kong and over the years. Only about 10% of natives were in elementary occupations whereas the percentages are as high as 25% for male and 45% for female immigrants upon their arrivals. Again, the immigrants-natives gaps are much greater for women than for men. In general, the gaps between new arrivals and natives are also larger after Hong Kong's handover than before, although there is no monotonic trend across the four years under study.

Table 1. Employment, Occupation and Monthly Income of Chinese Immigrants and HK Natives by Gender, 1991-2006 (Aged 25-64)

	Male				Female			
	1991	1996	2001	2006	1991	1996	2001	2006
Employment rate								
HK natives	97.2	97.3	94.7	94.0	64.1	65.4	69.6	72.0
Immigrant cohort								
2002-2006				89.4				43.5
1997-2001			85.9	89.8			45.1	54.0
1992-1996		96.5	92.3	92.4		50.8	54.0	60.4
1987-1991	83.9	96.7	93.7	92.8	57.6	56.2	59.2	63.7
<1987	95.7	95.4	91.5	89.8	45.9	46.8	50.6	56.2
N	68075	78912	83063	86042	62077	73531	83015	89529
Percentage in elementary occupations								
HK natives	11.3	10.3	9.7	9.9	10.6	10.5	10.3	9.7
Immigrant cohort								
2002-2006				25.1				31.3
1997-2001			23.0	22.4			45.4	43.9
1992-1996		17.7	18.3	17.1		27.5	33.9	35.0
1987-1991	22.1	15.6	16.4	14.3	31.2	33.3	32.0	29.2
<1987	23.1	22.8	22.7	20.8	35.9	32.0	31.9	30.8
N	63843	72918	73159	74818	34095	41966	50201	56393
Average monthly income ratio of Chinese immigrants to HK natives								
HK natives	100	100	100	100	100	100	100	100
Immigrant cohorts								
2002-2006				75.1				51.5
1997-2001			71.2	69.4			41.9	44.0
1992-1996		84.4	73.1	70.1		60.6	51.1	52.3
1987-1991	64.0	73.0	65.8	66.3	50.8	53.6	52.2	57.4
<1987	72.3	71.6	70.1	73.1	63.1	65.3	64.5	68.0
N	61878	71814	72154	74162	32031	40912	49238	55528

We calculated the average monthly income of immigrants relative to Hong Kong natives (set as 100) in the bottom of Table 1. As expected, both immigrant men and women earned less than their respective natives, but the gaps among women tended to be greater than among men. For men, immigrants arriving within 5 years earned 64% of what the natives earned in 1991 and 75% in 2006; for women, they earned about half of what the natives earned in both 1991 and 2006. It seems that female immigrants were doing particularly worse than before, an evidence often linked to the decline in the cohort quality of mainland immigrants associated with policy changes. In Table 2, we depict the changing profiles of immigrants vis-à-vis natives on select indicators.

Table 2. Changing Profiles of Immigrants, by Gender, 1991-2006 (Aged 25-64)

	Male				Female			
	1991	1996	2001	2006	1991	1996	2001	2006
Group size								
HK natives	53.73	60.88	64.76	69.87	57.34	62.48	62.92	64.91
2002-2006 immigrants				0.93				4.61
1997-2001 immigrants			1.13	1.26			5.76	5.73
1992-1996 immigrants		1.37	1.36	2.04		3.47	4.79	4.74
1987-1991 immigrants	1.58	1.55	1.80	2.21	3.99	3.84	3.65	3.41
<1987 immigrants	44.69	36.20	30.95	23.69	38.66	30.21	22.88	16.61
High school or above								
HK natives	53.80	59.00	62.47	66.55	49.04	57.61	63.66	69.07
2002-2006 immigrants				55.24				34.94
1997-2001 immigrants			56.81	50.74			23.45	28.18
1992-1996 immigrants		58.41	53.50	56.59		38.81	35.09	41.49
1987-1991 immigrants	53.07	53.69	50.37	56.74	32.85	36.13	37.24	47.20
<1987 immigrants	27.27	33.57	33.72	38.92	20.19	28.10	32.18	40.46
College or above								
HK natives	14.06	21.45	23.55	26.74	8.60	15.22	19.41	24.39
2002-2006 immigrants				28.05				7.85
1997-2001 immigrants			30.21	18.60			5.67	5.11
1992-1996 immigrants		32.99	23.91	21.62		12.99	8.75	9.88
1987-1991 immigrants	27.04	23.28	17.99	19.89	8.60	8.99	9.05	12.32
<1987 immigrants	6.35	9.37	8.46	10.63	4.18	6.50	8.07	11.15
English skills								
HK natives	50.44	52.75	57.56	55.45	44.48	51.13	58.38	58.25
2002-2006 immigrants				30.80				14.05
1997-2001 immigrants			24.89	26.34			5.98	9.82
1992-1996 immigrants		24.58	19.84	25.21		11.89	9.26	15.68
1987-1991 immigrants	18.49	17.79	18.86	28.53	6.98	8.70	11.22	20.55
<1987 immigrants	13.59	16.58	18.47	22.04	9.44	13.84	19.05	25.36
Married								
HK natives	62.37	66.82	67.63	67.47	75.41	75.04	72.51	69.51
2002-2006 immigrants				81.92				95.88
1997-2001 immigrants			79.15	81.95			95.79	94.60
1992-1996 immigrants		80.04	82.64	76.33		94.39	95.93	90.90
1987-1991 immigrants	77.79	83.20	78.39	75.21	94.47	95.19	92.37	86.56
<1987 immigrants	88.50	89.66	90.55	89.67	95.50	92.87	91.08	88.72

As shown in Table 2, the new immigrants (those arriving within five years of the year in question) were mainly women, assuming men and women each account for about half of the Hong Kong population. New immigrants arriving within 5 years accounted for 1.58% of the male population in Hong Kong and 3.99% of the female population in 1991; 0.93% of the male population and 4.61% of the female population in 2006. Women accounted for the majority of new immigrants, most of whom are married. While the level of education of the immigrants remained more or less the same over time, that of the natives improved at a faster rate. For example, while 32.85% of female immigrants arriving within five years had at least high school education in 1991 and 34.94% in 2006, the percentage of Hong Kong natives who had at least high school education has increased from 49.04% in 1991 to 69.07% in 2006.

The disadvantages that Chinese immigrants face against the natives in labor markets may be associated with their disparities in education, language skills, occupation, or other personal characteristics. We therefore conducted multivariate analyses to examine variations in labor market outcomes across immigrant cohorts and over the years. As laid out in Figure 2, we highlight the entry effect and assimilation process experienced by each cohort, and the effect of cohort quality before and after 1997.

MULTIVARIATE ANALYSES

Employment

Table 3 presents the estimated coefficients of binary logit models on the likelihood of being employed. We controlled for language skills, marital status, age (and age²), and education. Results show that, at the time of entry into Hong Kong, men immigrants were significantly less likely to be employed than their native counterparts. Their net odds of being employed upon arrival were 23.0% ($=e^{-1.470}$) in 1991, 72.3% ($=e^{-0.324}$) in 1996, 32.5% ($=e^{-1.125}$) in 2001 and 42.6% ($=e^{-0.852}$) in 2006, of those for natives. We do not see a clear trend over time for male immigrants. However, the situation for women immigrants seems to have worsened since the mid-1990s. They were 26% ($=e^{0.233}-1$) more likely to be employed upon their arrivals than natives in 1991, with all other factors constant. From 1996 onward (especially for those who arrived after 1997), the coefficients for the newly arrived cohorts became increasingly negative, suggesting that immigrant women were much less likely to be employed than their native counterparts. The net odds of being employed for women immigrants were only 86.4% ($=e^{-0.146}$) of those for natives in 1996, and the figure declined to 66.0% ($=e^{-0.415}$) in 2001 and a mere 38.9% ($=e^{-0.943}$) in 2006.

Table 3. Binary Logit Models on Likelihood of Being Employed in Hong Kong, 1991-2006 (Aged 25-64, Chinese Immigrants and Natives by Gender)

	Male				Female			
	1991	1996	2001	2006	1991	1996	2001	2006
Chinese immigrant cohorts (relative to HK natives)								
2002-2006				-0.852** (0.092)				-0.943** (0.036)
1997-2001			-1.125** (0.084)	-0.428** (0.086)			-0.415** (0.034)	-0.322** (0.032)
1992-1996		-0.324* (0.114)	-0.363** (0.093)	-0.408** (0.070)		-0.146* (0.045)	-0.068 (0.036)	-0.070+ (0.035)
1987-1991	-1.470** (0.088)	-0.219+ (0.112)	-0.199+ (0.084)	-0.345** (0.068)	0.233** (0.045)	0.226** (0.042)	0.158** (0.041)	-0.030 (0.041)
<1987	-0.004 (0.040)	-0.199** (0.033)	-0.210** (0.027)	-0.267** (0.026)	0.005 (0.021)	-0.052+ (0.020)	-0.033 (0.021)	-0.116** (0.021)
Language skills ^a								
English	0.586** (0.054)	0.582** (0.041)	0.397** (0.032)	0.327** (0.028)	0.537** (0.028)	0.565** (0.023)	0.473** (0.022)	0.349** (0.020)
Mandarin	0.030 (0.045)	0.048 (0.033)	0.098** (0.025)	0.232** (0.023)	0.099** (0.024)	0.110** (0.020)	0.126** (0.018)	0.208** (0.016)
Married	1.014** (0.041)	1.019** (0.036)	1.025** (0.030)	0.893** (0.028)	-1.974** (0.038)	-1.275** (0.029)	-1.141** (0.027)	-0.796** (0.023)
Age	0.040* (0.013)	0.023+ (0.011)	-0.013 (0.009)	-0.018+ (0.009)	0.060** (0.007)	0.037** (0.007)	0.068** (0.007)	0.024* (0.007)
Age ² × 100	-0.075** (0.015)	-0.061** (0.013)	-0.017 (0.011)	-0.012 (0.010)	-0.086** (0.008)	-0.069** (0.008)	-0.116** (0.008)	-0.065** (0.008)
Education (reference: primary school or below)								
Middle school	0.356** (0.043)	0.190** (0.036)	0.262** (0.029)	0.313** (0.029)	-0.015 (0.025)	0.017 (0.023)	-0.082** (0.022)	0.001 (0.022)
High school	0.710** (0.052)	0.479** (0.042)	0.657** (0.034)	0.603** (0.032)	0.552** (0.028)	0.621** (0.025)	0.425** (0.024)	0.320** (0.023)
Tertiary	0.691** (0.080)	0.631** (0.058)	1.201** (0.050)	0.872** (0.042)	1.165** (0.050)	1.134** (0.037)	1.120** (0.036)	0.860** (0.032)
Constant	0.294 (0.263)	0.559+ (0.231)	0.591* (0.195)	0.824** (0.188)	2.613** (0.159)	1.746** (0.151)	1.311** (0.155)	1.764** (0.153)
Pseudo R ²	0.062	0.056	0.067	0.054	0.137	0.140	0.141	0.112
N	68075	78912	83063	86042	62077	73531	83015	89529

Notes: ^a both language-skill variables are dummy variables; Standard errors are reported in parentheses; ** p<0.001, * p<0.01, + p<0.05.

The absolute value of the negative coefficients for each cohort declined over time (across columns), with exceptions for male 1992-1996 and female 1987-1991 cohorts. This pattern suggests that most immigrants did undertake a process of assimilation. Generally, men immigrants tended to catch up with natives at a faster pace than women immigrants.

One exception is that male immigrants who arrived during 1992-1996. They did not suffer as much as other immigrant cohorts upon their arrivals; neither did they experience an assimilation

process over time. One possible explanation is that their language skills, education, age and other factors might have offset some of the potential negative effect of immigrant status upon arrival. For example, in the 1996 sample, among men who arrived between 1992 and 1996, 33% had tertiary education, in contrast to only 22% of natives.

Another exception is immigrant women who arrived between 1987 and 1991. They were more likely to obtain a job upon arrival than natives and their advantages lasted until 2001, and became insignificant in 2006. Such a pattern is probably related to the industrial restructuring in Hong Kong over the past decades. Before the early 1990s, many immigrants were employed in the manufacturing sector, especially the textile sector for women immigrants. However, since production jobs in the manufacturing industry had been gradually relocated to China to be replaced by service jobs, and as early immigrants were less adaptive to structural changes in the labor market than natives (Lan and Liu, 1998), these women immigrants lost their advantages in employment. The insignificant coefficient in 2006 is due to the fact that most female immigrants and natives of this cohort had approached the age of retirement.

The effects of other variables were not surprising. English was the official language in colonial Hong Kong, whereas Mandarin became more important after Hong Kong's return to China. Our results show a straightforward trend in the decreasing impact of English and the increasing effect of Mandarin on the chances of being employed, for both men and women. Married men were significantly more likely to have a job, whereas married women were significantly less likely to be employed. Age has a curvilinear effect on employment for both men and women, and education increases the chance of being employed. Notably, the effect of tertiary education on employment was larger for women than for men.

Occupational Attainment

The above analysis shows how likely it was for immigrants to have a job compared with the natives. But among those who had a job, what kind of job did they have? The earlier discussions have pointed to their being trapped in elementary occupations and poverty. We now turn to examine their occupational attainment, specifically, the likelihood of being trapped in elementary occupations. Table 4 presents the results.

At the time of entry, all immigrant cohorts, both men and women, were significantly and increasingly more likely than their native counterparts to hold elementary occupations. For men arriving within 5 years, their odds of being in an elementary occupation were 2.4 times ($=e^{0.888}$) the natives' odds in 1991, 1.94 times ($=e^{0.665}$) in 1996, 3.71 ($=e^{1.312}$) times in 2001, and 3.38 times ($=e^{1.281}$) in 2006, with all other factors constant. For women arriving within 5 years, the corresponding figures are 1.83 times for 1991, 1.98 times for 1996, 3.45 times for 2001, and 3.90 times for 2006.

Table 4. Binary Logit Models on Likelihood of being Employed in Elementary Occupations in Hong Kong, 1991-2006 (Aged 25-64, Chinese Immigrants and Natives by Gender)

	Male				Female			
	1991	1996	2001	2006	1991	1996	2001	2006
Chinese immigrant cohorts (relative to HK natives)								
2002-2006				1.281** (0.100)				1.362** (0.068)
1997-2001			1.312** (0.100)	0.891** (0.085)			1.239** (0.061)	1.311** (0.053)
1992-1996		0.665** (0.092)	0.781** (0.091)	0.643** (0.075)		0.684** (0.082)	0.742** (0.063)	0.994** (0.056)
1987-1991	0.888** (0.092)	0.391** (0.089)	0.516** (0.081)	0.389** (0.076)	0.602** (0.075)	0.623** (0.071)	0.583** (0.068)	0.765** (0.066)
<1987	0.142** (0.027)	0.253** (0.026)	0.235** (0.027)	0.237** (0.028)	0.184** (0.039)	0.273** (0.038)	0.330** (0.037)	0.563** (0.037)
Language skills ^a								
English	-0.830** (0.040)	-0.675** (0.035)	-0.627** (0.035)	-0.453** (0.031)	-0.905** (0.069)	-0.808** (0.054)	-0.838** (0.049)	-0.622** (0.040)
Mandarin	-0.053 (0.031)	-0.071* (0.027)	-0.191** (0.026)	-0.250** (0.025)	-0.332** (0.048)	-0.310** (0.040)	-0.341** (0.035)	-0.447** (0.031)
Married	-0.426** (0.032)	-0.487** (0.033)	-0.590** (0.036)	-0.523** (0.035)	0.389** (0.059)	0.236** (0.055)	0.152* (0.051)	0.100+ (0.044)
Age	-0.019+ (0.010)	-0.035** (0.010)	-0.025+ (0.011)	-0.062** (0.011)	0.161** (0.015)	0.175** (0.016)	0.213** (0.018)	0.203** (0.017)
Age ² × 100	0.118** (0.012)	0.062** (0.011)	0.086** (0.011)	0.086** (0.012)	-0.144** (0.018)	-0.101** (0.017)	-0.118** (0.018)	-0.154** (0.020)
Education (reference: primary school or below)								
Middle school	-0.459** (0.028)	-0.404** (0.027)	-0.362** (0.028)	-0.237** (0.030)	-0.576** (0.044)	-0.670** (0.040)	-0.712** (0.036)	-0.433** (0.035)
High school	-1.099** (0.036)	-1.070** (0.034)	-1.023** (0.034)	-0.887** (0.034)	-1.668** (0.061)	-1.941** (0.051)	-1.934** (0.046)	-1.635** (0.040)
Tertiary	-2.392** (0.094)	-2.594** (0.076)	-2.677** (0.078)	-2.210** (0.063)	-3.150** (0.168)	-3.354** (0.129)	-3.468** (0.121)	-2.543** (0.078)
Constant	-0.583* (0.196)	-0.333 (0.203)	-0.568+ (0.224)	0.148 (0.222)	-6.086** (0.321)	-5.953** (0.352)	-6.737** (0.387)	-6.755** (0.369)
Pseudo R ²	0.134	0.152	0.164	0.133	0.322	0.351	0.381	0.335
N	63843	72918	73159	74818	34095	41966	50201	56393

Notes: ^a both language-skill variables are dummy variables; Standard errors are reported in parentheses; ** p<0.001, * p<0.01, + p<0.05

A comparison of the coefficients across the columns of Table 4 for the same immigrant cohort shows that, as the immigrants stayed longer, the men and women followed a different trajectory of labor market assimilation. For men, their odds of being in elementary occupations declined, whereas for women, the odds remained the same or even increased the longer they stayed. For example, in the 1987-1991 cohort the odds ratio of being in elementary occupations between immigrants and natives decreased from 0.888 in 1991 to 0.389 in 2006 for men, but slightly increased from 0.602 to 0.765 for women. All coefficients are statistically significant (p<0.001).

There is a clear gap between new arrivals before and after 1997, for both men and women, in the likelihood of being in elementary occupations. The chances of being employed in elementary occupations for newcomers relative to natives were much higher in post-handover years than before. This evidence suggests that the effect of changing cohort quality may have contributed to the rising inequality in Hong Kong in the post-handover era.

The effects of other variables hold no surprises. Individuals who could speak English were significantly less likely to be trapped in elementary occupations than those who could not. The effect of Mandarin was the same, but the magnitude was much smaller. Over time, the impact of English on occupational attainment decreased, while the impact of Mandarin increased. The effects of marital status differ between men and women, similar to previous findings on employment status. Married men were less likely to work in elementary occupations, whereas married women were more likely to be employed in elementary occupations than unmarried women, but this effect became statistically insignificant in 2006. Education was negatively associated with the likelihood of having an elementary job.

Earnings and Years to Equality

Table 5 presents the estimates of OLS regression models for the natural logarithm of monthly income on select independent variables. In addition to the independent variables in Tables 3 and 4, we also included the respondent's occupation as a control variable. As shown in the table, upon arrival, immigrants earned significantly less than Hong Kong natives, and these disadvantages did not change over time for different immigrant cohorts. In other words, we did not observe worsening situations with respect to earnings for immigrants in recent years. Male immigrants, upon their arrival within 5 years, earned 67.1% ($=e^{-0.398}$) of what the natives earned in 1991 and 81.1% ($=e^{-0.209}$) in 2006; female immigrants earned 79.4% ($=e^{-0.231}$) of what the natives earned in 1991, and 85.8% ($=e^{-0.153}$) in 2006, after controlling for other factors. Comparing the coefficients of the immigrant cohorts at the time of entry before and after 1997, we observed no clear patterns across the years. Hence, the evidence does not lend support to the claim that the influx of new immigrants has contributed to the rising income inequality in Hong Kong after the handover.

For those who arrived in Hong Kong during the same period, how did they fare? Indeed, by comparing the coefficients across columns, we see that their earnings disadvantages relative to the natives have decreased over time. There is clear evidence of income mobility and economic assimilation. Again, take those who arrived between 1987 and 1991 as an example, men earned about 67.2% ($=e^{-0.398}$) of what the natives earned in 1991, 79.1% ($=e^{-0.234}$) in 1996, 87.1% ($=e^{-0.138}$) in 2001 and 89.1% ($=e^{-0.115}$) in 2006; women earned about 79.4% ($=e^{-0.231}$) of what the natives earned in 1991, 81.5% ($=e^{-0.204}$) in 1996, 85.9% ($=e^{-0.152}$) in 2001, and 86.7% ($=e^{-0.143}$) in 2006. The same trend can be observed for other immigrant cohorts.

Table 5. OLS Regressions on Log Income of Chinese Immigrants and Natives in Hong Kong by Gender, 1991-2006 (Aged 25-64)

	Male				Female			
	1991	1996	2001	2006	1991	1996	2001	2006
Chinese immigrant cohorts (relative to HK natives)								
2002-2006				-0.209** (0.023)				-0.153** (0.015)
1997-2001			-0.377** (0.020)	-0.163** (0.019)			-0.234** (0.013)	-0.169** (0.012)
1992-1996		-0.273** (0.018)	-0.198** (0.018)	-0.136** (0.015)		-0.246** (0.016)	-0.184** (0.013)	-0.157** (0.012)
1987-1991	-0.398** (0.018)	-0.234** (0.017)	-0.138** (0.015)	-0.115** (0.015)	-0.231** (0.015)	-0.204** (0.015)	-0.152** (0.014)	-0.143** (0.014)
<1987	-0.104** (0.005)	-0.108** (0.005)	-0.074** (0.005)	-0.073** (0.006)	-0.085** (0.008)	-0.106** (0.007)	-0.072** (0.007)	-0.064** (0.008)
Occupations (relative to elementary occupations)								
White-collar workers	0.550** (0.007)	0.603** (0.007)	0.643** (0.007)	0.805** (0.008)	0.422** (0.011)	0.429** (0.010)	0.464** (0.009)	0.718** (0.009)
Service & sales workers	0.305** (0.008)	0.329** (0.008)	0.367** (0.008)	0.474** (0.008)	0.197** (0.011)	0.211** (0.010)	0.188** (0.009)	0.361** (0.009)
Others	0.190** (0.006)	0.201** (0.006)	0.239** (0.007)	0.314** (0.007)	-0.005 (0.009)	0.083** (0.011)	0.079** (0.012)	0.265** (0.014)
Language skills ^a								
English	0.222** (0.006)	0.173** (0.005)	0.167** (0.006)	0.139** (0.005)	0.252** (0.008)	0.213** (0.007)	0.247** (0.007)	0.186** (0.006)
Mandarin	0.007 (0.005)	0.027** (0.005)	0.008 (0.004)	0.041** (0.004)	0.008 (0.007)	0.006 (0.006)	0.011+ (0.005)	0.019** (0.005)
Married	0.244** (0.005)	0.190** (0.006)	0.246** (0.006)	0.234** (0.006)	0.030** (0.007)	0.048** (0.007)	0.050** (0.006)	0.087** (0.006)
Age × 10	0.705** (0.017)	0.806** (0.018)	0.880** (0.019)	0.813** (0.019)	0.559** (0.024)	0.573** (0.024)	0.722** (0.024)	0.741** (0.024)
Age ² × 100	-0.085** (0.002)	-0.093** (0.002)	-0.099** (0.002)	-0.086** (0.002)	-0.066** (0.003)	-0.064** (0.003)	-0.080** (0.003)	-0.079** (0.003)
Education (reference: primary school or below)								
Middle school	0.075** (0.006)	0.069** (0.006)	0.074** (0.006)	0.072** (0.007)	0.064** (0.009)	0.065** (0.009)	0.054** (0.009)	0.034** (0.009)
High school	0.112** (0.006)	0.129** (0.007)	0.148** (0.007)	0.147** (0.008)	0.227** (0.010)	0.311** (0.010)	0.316** (0.010)	0.223** (0.009)
Tertiary	0.528** (0.009)	0.546** (0.009)	0.613** (0.009)	0.527** (0.009)	0.742** (0.013)	0.806** (0.012)	0.857** (0.011)	0.700** (0.011)
Constant	7.137** (0.034)	7.444** (0.036)	7.264** (0.037)	7.283** (0.039)	7.281** (0.046)	7.650** (0.047)	7.379** (0.047)	7.334** (0.046)
R ²	0.42	0.41	0.43	0.41	0.48	0.45	0.49	0.46
N	61878	71814	72154	74162	32031	40912	49238	55528

Notes: ^a both language-skill variables are dummy variables; Standard errors are reported in parentheses; ** p<0.001, * p<0.01, + p<0.05.

Despite the improvements over time, the economic disadvantages of the immigrants would not disappear completely, as shown in the table for the 1987-1991 cohort across the 15 years from 1991 to 2006. Even for those who arrived in Hong Kong before 1987, they continued to earn less than the natives in 2006, by 7% ($=e^{-0.073}-1$) for men and 6.2% ($=e^{-0.064}-1$) for women.

A related question is, how many years would it take for an immigrant's earnings to catch up with that of a native? In Table 6, we calculated the number of years to equality for Chinese immigrants using the method proposed by Bloom et al. (1995). Given the different effects of language skills as shown in previous analyses, comparisons are made between immigrants who can speak English and those who cannot, and between immigrants who can speak Mandarin and those who cannot, all relative to the entire native working population.

Our calculation of years to equality is based on the results from OLS regression models on the natural logarithm of monthly income, as listed in the left part of Table 6. All models employed the pooled data of the four referenced years. The estimates for controlled variables, including occupations, marital status, work experience, years of schooling, and year, are not reported here. The entry effect is the effect of a dummy variable with immigrant coded as 1 and native as 0. This is the difference in earnings between natives and Chinese immigrants at the time of entry. The entry effect is expected to be negative based on our previous analyses. The assimilation effect is the effects of years of duration of stay.⁴ It reflects the average percentage change in immigrants' earnings for every incremental year spent in Hong Kong. The assimilation effect is expected to be positive. The cohort effect is included to control for the differences among immigrants who arrived in different periods. It measures the average unobserved quality of a particular immigrant cohort relative to the reference group—the pre-1987 cohort.

Years to equality, as shown in the right part of Table 6, are estimates of the average number of years it takes for immigrants to earn as much as their native counterparts. Assuming the entry effect is negative, and the assimilation effect is positive, years to equality is given by the number of years it takes for the positive assimilation effect to offset the negative entry effect, taking the cohort variations into consideration.⁵ Specifically, it is calculated by taking the absolute value of the sum of the entry effect (coefficient) and the cohort effect, divided by the assimilation effect. For example, the average year to equality is 47.7 for men who immigrated to Hong Kong between 1987 and 1991 and could speak English. It is equal to the sum of entry effect -0.260 and cohort effect -0.074 divided by the assimilation effect 0.007.

⁴The 1991 census data contains an open-ended interval of years of duration, referring to immigrants who arrived prior to 1981. These immigrants are assumed to have been in Hong Kong for 20 years. The 1996 and 2006 by-censuses and 2001 census contain an open-ended interval of years of duration, respectively referring to immigrants who arrived prior to 1976, 1981, and 1986; they are assumed to have been in Hong Kong for 30 years.

⁵ We assume that the positive assimilation effect is constant over time.

Table 6. Entry, Assimilation, and Cohort Effects by Chinese Immigrants' Language Skills and Sex (Aged 25-64, Pooled Regressions)

Dependent variable: Log income	Coefficient estimate				Implied years to equality			
	English		Non-English		English		Non-English	
	Male	Female	Male	Female	Male	Female	Male	Female
Entry effect	-0.260** (0.020)	-0.182** (0.026)	-0.305** (0.009)	-0.269** (0.011)				
Assimilation effect	0.007** (0.001)	0.005** (0.001)	0.005** (0.000)	0.003** (0.000)				
Cohort effect <1987 (reference)					37.1	36.4	61.0	89.7
1987-1991	-0.074** (0.020)	-0.095** (0.023)	-0.033* (0.010)	-0.043** (0.010)	47.7	55.4	67.6	104.0
1992-1996	0.004 (0.024)	-0.063+ (0.026)	-0.037* (0.012)	-0.053** (0.012)	36.6	49.0	68.4	107.3
1997-2001	0.043 (0.031)	-0.069+ (0.033)	-0.114** (0.018)	-0.052** (0.013)	31.0	50.2	83.8	107.0
2002-2006	0.195** (0.042)	0.080+ (0.040)	-0.106** (0.028)	-0.047+ (0.019)	9.3	20.4	82.2	105.3
					Mandarin		Non-Mandarin	
					Male	Female	Male	Female
Entry effect	-0.373** (0.011)	-0.381** (0.015)	-0.248** (0.011)	-0.158** (0.014)				
Assimilation effect	0.009** (0.000)	0.008** (0.001)	0.004** (0.000)	0.002** (0.001)				
Cohort effect <1987(reference)					41.4	47.6	62.0	79.0
1987-1991	-0.009 (0.012)	-0.019 (0.013)	-0.028 (0.015)	-0.044* (0.014)	42.4	50.0	69.0	101.0
1992-1996	0.016 (0.015)	-0.004 (0.015)	-0.013 (0.017)	-0.054** (0.015)	39.7	48.1	65.3	106.0
1997-2001	-0.012 (0.021)	0.004 (0.017)	-0.060* (0.023)	-0.064** (0.016)	42.8	47.1	77.0	111.0
2002-2006	0.015 (0.031)	0.032 (0.023)	0.066 (0.035)	0.019 (0.025)	39.8	43.6	45.5	69.5

Notes: Entry effect is a dummy variable with Chinese immigrants coded as 1 and Hong Kong natives 0; Assimilation effect is the impact of years since migration; Years to equality is calculated by taking the absolute value of the sum of the entry effect and the cohort effect, divided by the assimilation effect; Standard errors are reported in parentheses; ** p<0.001, * p<0.01, + p<0.05.

All immigrants, regardless of whether they speak English or Chinese, earn significantly less than natives at the time of their arrival, but their economic situation improved over time, as evidenced by the positive assimilation effect. The upper panel of Table 6 shows that immigrants who can speak English would need a much fewer number of years to catch up with natives than those who cannot, although it would still take them 30 to 55 years to earn as much as natives.

Among those immigrants who can speak English, men would generally need less time than women to achieve equality. For those who cannot speak English, it would take at least 61 years for men and around 90 years for women to achieve parity with natives, suggesting almost no chance for them to catch up in income in their lifetime. The 2002-2006 arrivals who could speak English were an exceptional case, as it took only 9 years for men and 20 years for women to earn as much as natives.

Differentials also exist between immigrants who can speak Mandarin and those who cannot, as shown in the lower panel of Table 6. For instance, among those men who arrived in Hong Kong between 1987 and 1991, it would take 26.6 years longer for those who cannot speak Mandarin than for those who can to reach earnings parity with the natives. This is probably because immigrants who cannot speak Mandarin are likely to be from rural Guangdong areas where Cantonese or other local dialects are spoken. They may also lack exposure to all kinds of know-how other than education. In general, it would take about 41 years for men and 48 years for women with Mandarin language skills to achieve income equality with natives, whereas non-Mandarin speakers would never catch up with natives throughout their entire life course. Among the immigrant groups, women need longer time than men, ranging from 5 to 19 years, to catch up with their native counterparts in earnings. This suggests that assimilation may be a process that needs several immigrant generations to complete.

SUMMARY AND CONCLUSIONS

In this paper, we analyzed the 1991 to 2006 Hong Kong census and by-census data to examine employment, occupational and earnings attainments of immigrants from mainland China to Hong Kong. We tested three hypotheses concerning the entry effect of immigrants upon arrival, the process of assimilation, and the effect of changes in cohort quality before and after 1997 in relation to their labor market outcomes in Hong Kong.

At the time of entry, as found elsewhere, new immigrants from mainland China are significant disadvantaged compared with their native counterparts in employment, occupational attainment and earnings. They are less likely to be employed than natives; and even among those who are employed, they are more likely to be trapped in elementary occupations, and earn much less than native workers.

As immigrants stayed longer, their disparities with natives tend to decrease. They are more likely to find a job over time, although still less likely than natives. Among those who are employed,

the likelihood of being in elementary occupations declines with the duration of stay for men but not for women. The immigrants-natives gap in monthly earnings has been narrowed for the same cohorts over the years examined. Therefore, evidence suggests that both occupational mobility (for men) and income mobility do exist, and immigrants become more integrated and assimilated into Hong Kong's labor market, as they gain more skills and experience specific to the local labor market. This is similar to the economic experience of immigrants in other countries that are the major recipients of immigrants, such as the United States, Canada, Australia, and Israel (Chiswick 1978; Borjas 1985; LaLonde and Topel 1992; Bloom *et al.* 1995; Chiswick *et al.* 2005; Eckstein and Weiss 1998).

Despite the dynamic assimilation process, immigrants continue to be disadvantaged in Hong Kong's labor markets, probably because of other characteristics for which we have no measures in the data, such as social capital. For example, results from the calculations of years to equality show that, although the earnings gap between immigrants and native workers decreased over time, they had little chance of achieving parity with natives throughout their working lives. Compared with immigrants in other countries, the recent Chinese immigrants in Hong Kong resemble more the Mexican and Asian immigrants in the United States in the 1980s (Borjas 1995) rather than immigrants in Germany or Canada, where they tend to catch up with natives after two decades or so in the local labor markets (Constant & Massey 2005; Bloom *et al.* 1995).

Comparisons of the effect of cohort quality before and after Hong Kong's handover have yielded some mixed results. The newly arrived women from after 1997 were much less likely to be employed than before, but this was not the case for men. Both men and women were more likely to be trapped in elementary occupations than the pre-1997 arrivals, suggesting that immigrants have been facing an even more adverse environment than before. However, in terms of income, neither men nor women were worse off compared with the new arrivals from before 1997. Therefore, we did not find strong evidence supporting the declining quality of post-1997 immigrant cohorts. The empirical results are summarized in Table 7.

The changes in immigrant cohorts are related to gender compositions: immigrants are increasingly female as a result of immigration policy changes. Inequality in labor markets differ by gender. Among immigrants, men generally are in better shape than women, and they tend to catch up with natives faster than women in terms of occupational mobility and income attainment as they stay longer in Hong Kong. The changing gender composition of immigrants and gendered process of stratification may explain why people tend to link the influx of new immigrants in the 1990s to the rising income inequality and poverty in Hong Kong as a whole.

Table 7. Summary of Testing the Three Hypotheses on Chinese Immigrants in Hong Kong, 1991-2006

	Hypothesis 1 Immigrants are disadvantaged upon their arrival (entry effect)	Hypothesis 2 Gaps decrease for the same immigrant cohorts over time (assimilation effect)	Hypothesis 3 Gaps upon arrival increase after 1997 (effect of cohort quality change)
<i>Men</i>			
Employment status	√	√ [#]	×
Occupational attainment	√	√	√
Earnings	√	√	×
<i>Women</i>			
Employment status	√ [*]	√ [*]	√
Occupational attainment	√	×	√
Earnings	√	√	×

Notes: [#] except the 1992-1996 cohort; ^{*} except the 1987-1991 cohort.

Given the lack of longitudinal data for immigrants, we employed a synthetic cohort approach to separate the assimilation effect from the cohort effect and examined the dynamic process of inequality between immigrants and natives. There was no way for us to control for macroeconomic fluctuations over the period. This is particularly relevant to the post-1997 period when the Asian Financial Crisis and subsequent economic recession hit vulnerable groups (including new immigrants, especially female immigrants). Therefore, the exacerbating situation in the labor market may be explained by the macroeconomic conditions that affected the labor market and the socioeconomic attainment of immigrants, rather than the change in cohort quality *per se*.

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