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**Population Growth, Fertility Decline and Ageing in Hong Kong:  
The Perceived and Real Demographic Effect of Migration**

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**1 Introduction**

Demographic changes have profound social and economic implications (Ng, 1992: 233). The most dramatic example in Hong Kong is the shrinking of the population receiving primary and secondary education. The declining of population at schooling age brings about great pressure on various schools with great social repercussion. Some 129 primary schools stopped admitting year-one students and 69 primary schools were closed in the period from September 2002 to September 2005 (Ming Pao, 2006a). It is expected that some secondary schools will also be closed as the number of year-one students entering secondary schools will decline from about 82 thousands in 2005 to 61 thousands in 2010. Declining fertility and population ageing have also attracted much public attention in Hong Kong (Task Force on Population Policy, 2003; Shen, 2005a; 2005b).

Hong Kong has experienced significant population growth since the end of Second World War (Ho, Liu and Lam, 1991). Migration from mainland China has been significant source of population growth and fuelled the development of labour-intensive manufacturing in the 1960s and 1970s. Since the early 1980s, although the demand for low-skilled migrant labour has declined with the emergence of a business-service based economy, inflow of migrants from mainland China has remained at a fairly high level.

During the years following the Asian Financial Crisis after 1997, Hong Kong faced a difficult economic situation. Both the rate of unemployment and the number of recipients of CSSA (Comprehensive Social Security Assistance) increased sharply. Annual inflow of about 50,000 migrants from mainland China with one-way permits is considered to cause problems of unemployment and poverty as such migrants have less education and lower income than local residents in Hong Kong. For example, the number of new arrivals (residing in Hong Kong for less than 7 years), mainly from mainland China, receiving CSSA benefits increased from 45,945 in March 1999 to 69,345 in December 2002 and its share in total number of CSSA recipients increased from 12.0% to 14.9% in the same period (Task Force on Population Policy, 2003: 76-79). In June 2002, 16.6% of new arrivals were CSSA recipients while only 5.7% of local population were CSSA recipients. One major policy suggestion of the government's Task Force on Population Policy (2003) is that migrants will only be eligible for CSSA and subsidized public medical services after residing in Hong Kong for over seven years. On the other hand, it is suggested to introduce new migration schemes to attract migrants with talents or capital.

Indeed, several studies have examined the economic performance of migrants in Hong Kong (Lam and Liu, 1993; 2000). Lam and Liu (1998: 118) found that the income gap between mainland migrants and local population widened from 11.3% in 1981 to 28.65% in 1996 based on migrants who arrived in Hong Kong before 1981. Chiu, Choi and Ting (2005) found that migrants living in Hong Kong over ten years still had lower income than natives. The recent 2001 census also shows that the income of new migrants from mainland fell below the average level of the total population. The medium monthly income of domestic households with new migrants dropped from HK\$13,000 in 1996 to HK\$12,050 in 2001 while that of all domestic households in Hong Kong increased from HK\$17,500 to HK\$18,705 (CSD, 2002a: 40). Other than some low income households with new migrants who are unable to meet their basic needs (about 20% of them) and thus rely on CSSA, the dilemma facing new migrants from mainland China is that their income is low in Hong Kong but the cash income is significantly higher than the ordinary income in mainland China. Thus Hong Kong remains to be attractive to most migrants from mainland China.

The focus of this paper is on the demographic effect of migration on the population in Hong Kong. Indeed, there are positive and negative perceptions of the demographic effects of migration. Some are correct while others are wrong perceptions that need clarification. For example, migrants from mainland have been considered as an effective way to relieve the problem of severe population ageing in Hong Kong (Yip, Lee, Chan and Au, 2001). The perception of their impacts on fertility level is mixed. On one hand, female dominated adult migrants from mainland via cross-border marriage are considered to reduce the chance of marriage of local women, resulting in a decline in the fertility level. On the other hand, the children given by the mainland wives of Hong Kong permanent residents during their visits in Hong Kong have right of abode and are counted in the total births of the city. It seems that the real effect of the mainland wives and new migrants on the fertility level in Hong Kong is not well understood, given the intense cross-border marriage and migration between Hong Kong and mainland China.

This paper attempts to securitize the demographic effects of migration related to these issues and the result will help to form proper policy response to acute fertility problem and the “expected” severe population ageing in future.

Urban population is a dynamic and open system (Shen, 1994a; 1994b; Plane and Rogerson, 1994; Rogers, 1995). As an open population system, three important points can be noted. First, there are both flows of immigration and emigration in an open city. Second, children given in the city may be by visitors from outside while residents of the city may give birth to children outside of the city. Third, large number of cross-border marriages makes the situation even more complicated in Hong Kong. Mainland spouses especially wives can not join their spouses of Hong Kong permanent residents immediately after getting married. They usually have to wait for about 5 years to get one-way permits (Task Force on Population Policy, 2003: 49). Such mainland wives may give birth to children in and out of Hong Kong. All these children have the right of abode in the city according to the law.

As a dynamic population system, a few points can be noted. First, the proportion of elderly population aged 60+ in a stable population is about 20%. Thus if a population has a small proportion of elderly population such as Hong Kong, it is normal that such proportion will increase in the future. Second, the future number of elderly population is

determined by the existing population with a time delay of 60 or 65 years. For example, the elderly population aged 60+ in Hong Kong 60 years later is mainly determined by the current population aged 0 to 50, assuming that no person can live beyond age of 110 and there are no large-scale immigration and emigration. Changing fertility rate or increasing migrants would not reduce the number of elderly population and the demand for medical service and social welfare support in the next 60 years. Third, each individual including migrant will undergo a natural aging process, eventually becoming a member of elderly population in future. Increasing young migrants can reduce the proportion of elderly population now but will increase the number of elderly population in future. Thus “young migrants” come at the cost of future population ageing.

The rest of the paper is organized as follows. The relative contributions of migration and natural growth to population growth in Hong Kong will be examined first. Then fertility decline, the relationship between marriage and migration, population ageing and the possible role of migration in solving the ageing problem will be discussed. Some conclusions are reached in the final section.

## **2 Migration and population growth**

In the past 150 years, Hong Kong has grown from a small fishing village to a metropolis with a population of nearly 7 million. In 1845, there were only 23,817 persons in Hong Kong (Lam and Liu, 1998: 11). The population increased to 0.46 million in 1911 and 1.63 million in 1941 (Feng B, 2001: 54). Hong Kong’s population kept growing except for the period of 1941-1945 under Japanese occupation. The population reached 3.20 million in 1961, 5.24 million in 1981 and 6.92 million in 2004 (CSD, 2006). Due to significant contribution of migration especially male migrants, Hong Kong had much larger male population than female population until 1961. The gender ratio (males per 100 females) was 184 in 1911 and 135 in 1931. It reached a normal gender ratio of 106 for the population as a whole in 1961 (CSD, 1969: 13). In 1961, 50.5% of Hong Kong’s population was born in mainland China (Lam and Liu, 1998: 15).

This section will focus on the period 1961-2004 when detailed data on components of population change are available. There was large scale migration from mainland China to Hong Kong in the 1960s-1980s. Thus it is a common perception that

population growth in Hong Kong was caused mainly by such migration. It is useful to note that Census and Statistics Department (CSD) changed population statistics approach from "Extended de facto" approach to "Resident population" approach in 1996 (CSD, 2002b). Population data before and after 1996 from CSD (2006) are based on two approaches respectively. The impact of such change on the total population and net migration in 1996 are estimated as follows. According to reported total population data in mid-1995 and mid-1996 (6156.1 and 6435.5 thousands respectively), the natural population increase and net migration from mid-1995 to mid-1996 (35.0 and 119.9 thousands respectively), it was estimated that the total population was adjusted upward by 124.5 thousands due to the change in statistics approach. This adjustment was also adopted by the authors to estimate net migration in 1996, which was 41 thousands considering the total population in the end of 1995 and 1996 and natural population increase in 1996.

During the period 1961-2004, net migration to Hong Kong was characterized by large fluctuation. There were positive and negative net migration flows in different years. Among the 44 years under consideration, Hong Kong lost population through migration in 8 years, i.e., 1961, 1963-1966, 1969, 1976 and 1990. During the period 1961-1995, the number of births was over 69 thousands and natural population increase was over 37 thousands a year. On the other hand, net migration was less than 30 thousands a year in most years. It was smaller than natural population increase in most years until 1993. Migration accounted for over 50% of population increase in Hong Kong only in four years before 1984, i.e., 1973 and 1978-1980.

It was in the most recent period 1993-2004 that migration became the most important source of population growth in Hong Kong. Migration accounted for over 56% of population growth in this period except 1997 and 2002. In 2004, migration accounted for 84% of population growth in Hong Kong. During the period 1993-2004, natural population increase further dropped from 40 thousands to 11 thousands a year and the problem of population ageing began to emerge in Hong Kong. In recent years, migration from mainland China is considered by many as a positive measure to relieve the ageing problem. The issue will be further discussed in section 5.

The limited contribution of migration to population growth in the period 1961-2004 can be clearly revealed by calculating accumulated natural population increase and net migration in the period which was shown in Figure 1 and Table 1. In the period, Hong Kong's total population increased from 3.128 million to 6.916 million (including upward adjustment of 0.125 million in mid-1996). There was a total increase of 3.663 million population in the period, 2.227 million due to natural population increase and 1.436 million due to net migration. Net migration accounted for less than 33% of population growth in the period 1961-1994 and 39.2% of population growth in the period 1961-2004. As a result, the share of population born in mainland China in the total population further decreased from 50.5% in 1961 to 41.6% in 1971 and 32.5% in 2001 (Lam and Liu, 1998: 15; CSD, 2001: 33).

Population in Hong Kong consists of those born in Hong Kong, mainland China, Taiwan, Macao and elsewhere. The population born in Taiwan was estimated to be 13,272 in 2001 according two census reports (CSD, 2001: 33; 2002c: 11). The population born in Macao was 70,146 in 2001 (CSD, 2002c: 11). The people born in mainland China, Taiwan and Macao were combined as one group in table 2. But 96.31% of population in the group was born in mainland China. Table 2 presents the share of population born in mainland China, Taiwan and Macao in the total population of Hong Kong in 2001. Among the total population born in greater China consisting of Hong Kong, Taiwan, mainland China and Macao, the share of the population born in mainland China, Taiwan and Macao was over 54% among people aged over 50 (aged 25 in 1976), but was below 25% among people aged below 39 (aged 14 in 1976). The emerging dominance of local born population who had little connection with mainland China may be also an important factor to the formation of independent Hong Kong identity in the 1970s-1980s. The local born population at that time knew little about mainland China due to social and political separation between Hong Kong and mainland in the period 1950s-1970s (Shen, 2003; 2004). According to Chiu, Choi and Ting (2005), the general attitudes towards both illegal and legal migrants changed from receptive to increasingly hostile in the mid-1970s. But the existing literature largely ignored the possible effect of above demographic change.

Clearly, the increasing importance of migration in population growth in Hong Kong since 1993 is due to more stable net migration of about 50,000 migrants a year from mainland China and declining fertility and birth number. The issue of fertility decline will be discussed in the next section.

### **3 Fertility decline and the children of cross-border couples**

#### **3.1 Declining fertility**

In 2003, Hong Kong's TFR (Total Fertility Rate, average number of children a woman will have in whole life according to age-specific fertility rates of women of various ages) was only 0.901 (CSD, 2005a), the lowest in the world. In comparison, TFR was 1.330 in Japan, 1.369 in Singapore, 1.710 in Sweden and 1.640 in UK in 2003 (World Bank, 2005). It is noted that the TFR for Hong Kong in 2003 reported in World Bank (2005) was 0.959, before the recent adjustment by CSD (2005a).

From 1971 to 2004, TFR in Hong Kong declined by 73.2%, from 3.459 to 0.927. The total number of births dropped from 110,900 in 1961 to 49,800 in 2004 (Table 3). As mentioned before, the declining number of children has already resulted in the shrinking number of children attending primary and secondary schools. It also has major implications on future labour supply and population ageing which will be examined in the next section. This section focuses on the causes of fertility decline and the effect of children of cross-border couples on fertility level.

The average fertility level of a population is determined by the patterns and timing of marriage and childbearing. These are in turn affected by a number of social, economic and cultural factors (Mason, 1997). According to the data from CSD (2005a), women aged 25-29 had the highest fertility rate in the period 1975-2004 except 1997-2002 when women aged 30-34 had slightly higher fertility rate than women aged 25-29. However, age-specific fertility rates declined dramatically in all ages in the period 1975-2004.

According to table 4, fertility rate declined by over 60% among women aged 15-29, 36% among women aged 30-34 and less than 15% among women aged 35-39 in the period 1981-2001. The delays in marriage and childbearing contributed to much greater decline in fertility rate among young women aged under 34 and less decline among

women aged 35-44. The average age of women's first marriage increased from 23.9 to 27.5 in the period 1981-2001 (CSD, 2002d: 62). The median interval from marriage to having first child increased from 14.7 months to 27.5 months in the same period (CSD, 2002d: 87).

It is noted that just delaying the time of marriage or childbearing will not affect real fertility rate if a woman still prefers to have the same number of children in her life. A woman may still have sufficient time to have 1-2 children at age of 35 while a delay in childbearing will affect the maximum number of children such as 5-7. Only the reduction of the number of children that an average woman would have or an increasing in the proportion of women who would not marry in their life would result in a decline in the real fertility rate of a population.

Recently, CSD (2005b) conducted an analysis of the changes in TFR in Hong Kong. According to CSD (2005b), almost all live births in Hong Kong are associated with marriage. Thus changing patterns of marriage and the declining fertility rates of married women are two major factors of fertility declining in Hong Kong. According to table 4, the fertility rate of married women aged 15-19 increased by 60% in the period 1981-2001 as young girls chose to get married early due to pregnancy. The fertility rate of married women aged 35-39 also increased slightly as some women delayed childbearing until these ages. However, the fertility rate of married women aged 20-34 and 40-44 was declined by 14-38% in the period 1981-2001 indicating the real decline of fertility rate of married women.

On the other hand, the share of now married women declined dramatically in all age groups due to delaying in marriage and increasing number of women who chose not to get married in the life. For example, the share of now married women among women aged 25-29 declined from 69% to 42% in the period 1981-2001, a decrease of 39%. The share also declined by 25% and 18% among women aged 30-34 and 35-39 respectively in the same period (table 4). The share of women who were not married increased from 7% to 20% among women aged 40-44 and from 10% to 18% among women aged 45-49 in the period 1981-2001. Among 18% women who were aged 45-49 and were not married in 2001, 8.3% had never married, 6.1% were divorced or separated and 3.4% were widowed (CSD, 2002a: 15; 2005a). This means that about 18% of women may not



engage in childbearing, mainly due to being single. This would directly reduce fertility rate in Hong Kong by 18%. It is noted that the number of divorce decrees granted in Hong Kong increased from 2060 to 13,425 in the period 1981-2001 while the number of divorced men and women re-married increased from 2501 to 9130 (CSD, 2002d: 56&70). Thus over 50% of divorced men or women did not marry again in 2001.

In the period 1981-2001, additional 8% more women aged 45-49 were not married and this would have the effect of reducing fertility rate by 8%. Furthermore, additional 22% more women aged 30-34 were not married in the period. If we make an extreme estimation assuming that women not married at age 30-34 would not marry in the rest of life, the increasing proportion of such women means that fertility rate would be reduced by 22% in the period 1981-2001. This accounted for 42% of the 52% reduction in TFR in the period in Hong Kong. This estimation was smaller than 56% contribution to TFR decline by declining share of now married women in the period 1976-2001 estimated by CSD (2005b). The CSD estimation was on high side as it ignored the possibility that women married later may have the same number of children and compensate for lost fertility due to delayed marriage. If such compensative childbearing did not happen, then the real fertility rate was declined which was not caused simply by delayed marriage. Overall, it is concluded that the real decline in married fertility rate may account for over 58% fertility decline in the period 1981-2001. Thus supportive incentives and childcare facilities are needed to encourage married women to have children at the age of 30s and 40s.

### **3.2 Trends of alternative fertility indicators**

TFR measures the fertility level of a year. It is an integrated indicator of fertility levels of women at different ages in a particular year. Thus the TFR in 2001 depended on the fertility rates of women aged 15-49 in that year and it was not equal to the total number of children a woman aged 15 or aged 49 would have in her whole life. It is useful to examine directly the overall fertility rate of women born at specific years. One useful indicator is the number of children a woman has had at age of 50 when she completes childbearing process in her life. This may be called life fertility rate or total cohort fertility rate.

By 2001, women born in 1928-1953 in Hong Kong had completed their childbearing process and the life fertility rate was available. According to table 3, on average, such women gave birth to over 93% of their total children by age of 39 and the share was 98.6% for women born in year 1948. This share was used to estimate the total number of children that a woman born in 1958-1963 would have before or on reaching age 50 after 2001 in table 3, given the number of children an average woman already had at age of 39 before or in year 2001.

According to table 3, the life fertility rate declined from 4.837 for women born in 1933 to 2.628 for women born in 1948. The estimated life fertility rate was 1.424 for woman born in 1963 (aged 39 in the year 2001) in Hong Kong. The observed number of children was 1.404 at age 39 in 2001. Both figures are significantly higher than the reported TFR of 0.932 in Hong Kong in 2001. This means that an average woman aged below 39 in 2001 may have less than one child in her whole life. More time is needed to monitor such low fertility level as such women have not completed their childbearing process.

Table 5 presents the number of live births by order of birth in Hong Kong in the period 1981-2001. In the period, the number of 1<sup>st</sup> order of birth declined by 32%, down from 37,900 in 1981 to 25,700 in 2001. The number of 2<sup>nd</sup> order of birth declined by 39%. There was a dramatic decline of 70% in the number of 3<sup>rd</sup> order of birth and 86% decline in the number of 4<sup>th</sup> order or above of birth in the same period. This indicates that women were much less likely to have 3<sup>rd</sup> child or more in Hong Kong in 2001. Overall, the 1<sup>st</sup> order of birth accounted for 43.7% and 53.3% of total births in Hong Kong in 1981 and 2001 respectively. The 2<sup>nd</sup> order of birth accounted for 33.5% and 36.7% of total births in Hong Kong in 1981 and 2001 respectively.

Table 5 also presents the ratio of number of births to the number of first marriages. It is interesting to note that the ratio was very stable over the years. The number of total births per first marriage declined slightly from 2.106 in 1981 to 1.907 in 2001. The number of 1<sup>st</sup> order of birth actually increased from 0.921 to 1.015 in the period 1981-2001. This indicates that some women give birth in Hong Kong may not register their marriage in Hong Kong.

Overall, the declining trend of TFR, life fertility rate and number of births were consistent in Hong Kong in the period 1981-2001. In this period, TFR declined by 52%, life fertility rate declined by 59% (comparing women born in 1943 and 1963 respectively) and number of births by 44%. If all births are a result of marriage in Hong Kong, then the number of marriage should be stable so that the fall in number of births follows that of fertility decline. Indeed, the number of first marriage was also declined by 39% in the period. Once again, this indicates that some children are given by women not married in Hong Kong. For example, it is common that a man may get married with a girl in Guangdong. Their marriage may be registered in Guangdong instead of Hong Kong. The woman may then come to Hong Kong to give birth to their children before or after migrating to Hong Kong. Such childbearing process may not be reflected by the number of marriages registered in Hong Kong. It also poses a challenge to measure TFR of Hong Kong properly.

### **3.3 The problem of measuring TFR in Hong Kong: dealing with the children of cross-border couples**

After the introduction of economic reform and open door policy in China in 1978, the social and economic interaction between Hong Kong and mainland China has been strengthened (Shen, 2003; Lin and Tse, 2005; Lang and Smart, 2002). One significant phenomenon is the increasing number of cross-border marriages (So, 2003). The latest figure shows that 1/3 of 41,000 marriages registered in Hong Kong in 2004 were cross-border marriages between residents of Hong Kong and mainland China (Asian Television Ltd, 2006). In most cases, a girl in mainland China married with a man in Hong Kong but there were also 3500 women from Hong Kong married with men from mainland China in 2004.

Although there are many cross-border marriages, the spouses of Hong Kong residents and their children born in mainland China can only migrate to Hong Kong after applying for one-way permits which are subject to a daily quota of 150. Thus many mainland wives of Hong Kong residents come to give birth in Hong Kong as visitors so that their children can quickly get resident status. This creates a unique problem of fertility statistics as mothers are not Hong Kong residents while the babies are the children of Hong Kong residents (their fathers). Before 2005, CSD (2005a) included

these births in fertility statistics without including their mothers who were not Hong Kong residents. CSD revised the approach of fertility statistics in 2005 which is still not satisfactory. The details will be discussed later in this section. Generally, the mainland wives of Hong Kong residents may give birth to their children in mainland China or Hong Kong before permanent migration to Hong Kong.

Excluding the children given by those wives of Hong Kong residents who are not residents of Hong Kong and mainland China, births in Hong Kong are given by three groups of women: Hong Kong residents, mainland wives of Hong Kong residents and mainland residents whose husbands are not Hong Kong residents (Figure 2).

The number of births given by mainland wives of Hong Kong residents in Hong Kong increased significantly from 394 in 1986 to 4964 in 1991 and 9285 in 2004 (CSD, 2002d; 2005a). Such birth accounted for 15.6% and 18.6% of total births in Hong Kong in 2001 and 2004 respectively. As the mothers of these children were still not residents of Hong Kong, they should be excluded from the calculation of TFR in Hong Kong. As a result, the TFR in Hong Kong in 2001 and 2004 should be 0.786 and 0.754 respectively, indicating extraordinary low fertility rate in Hong Kong.

On the other hand, the number of births given by mainland residents but whose both parents were not Hong Kong residents also increased from 169 in 2001 to 3630 in 2004 and 8837 in 2005 (CSD, 2005b: FD10; Ming Pao Daily News, 22 June 2006). This is partly induced by the ruling of the Court of Final Appeal in July 2001 that babies born in Hong Kong to Chinese nationals have the right of abode in Hong Kong. There are also some births given by Hong Kong residents outside Hong Kong. Many of them return to Hong Kong below age one. The number of children of Hong Kong residents came to Hong Kong below age one was (CSD, 2002c: 35; 2005b: FD11). Theoretically speaking 1451 in 1986, 4260 in 1995, 2034 in 2001 and 1588 in 2004, these babies are considered migrants just as those children or adults who are born outside Hong Kong (including those born in mainland China) and return to Hong Kong with right of abode. But in reality, such babies are children of the usual residents of Hong Kong and may be counted in fertility statistics.

As mentioned before, CSD (2005a) revised fertility statistics in 2005 for fertility data since 1996. Previously, all live births in Hong Kong including those given by non-

Hong Kong residents were included in calculating fertility rate. This may over count the fertility rate of Hong Kong. But live births given by Hong Kong residents outside Hong Kong were excluded which may undercount the fertility rate of Hong Kong. In the new fertility statistics, all live births given by Hong Kong residents outside Hong Kong are included. Live births given by parents who are non-Hong Kong residents are excluded. Live births given in Hong Kong by mainland wives whose husbands are Hong Kong residents as well as their mothers are included in calculating the fertility rate of Hong Kong. While this is a kind of solution to the complicated issue in Hong Kong, such method also over counts the fertility rate of Hong Kong in the sense that only mainland wives who give birth in Hong Kong are included. The problem is illustrated in the following.

Making use of available data and some estimates, table 6 presents the female population, births and age-specific fertility rates of three population groups: Hong Kong residents plus mainland wives (Population A), Hong Kong residents (Population B), mainland wives of Hong Kong residents in 2001 (Population C). Population A is the sum of populations B and C. Here, mainland mothers (i.e. mainland wives) refer to those mainland residents whose husbands were Hong Kong residents and who gave birth in Hong Kong in 2001. Hong Kong residents refer to those born in Hong Kong, Taiwan, mainland China and Macao. Total births include those given by Hong Kong residents outside Hong Kong but exclude those given by non-Hong Kong residents in Hong Kong whose husbands are not Hong Kong residents.

The total births by mainland mothers are known from CSD (2005a). Their distribution by mothers' age group is estimated using the age group distribution of female one-way permit holders arriving in Hong Kong in 2001 (CSD, 2002d). Only age groups 20-24 to 35-39 are included as fertility rates for age group 15-19, 40-44 and 45-49 are small and mainland wives giving birth in Hong Kong are likely to be young. The number of mainland mothers (Population C) equals to the number of birth in each age group as only mothers giving birth in Hong Kong in 2001 are included. The number of Hong Kong residents (Population B) by age group in 2001 is available (CSD, 2002c). Adding mainland mothers to such number, we can obtain the total population of Hong Kong residents plus mainland mothers (Population A). The age-specific fertility rates in 2001

are available for population A (CSD, 2005a). The number of births by age group of mothers can be calculated and the total number of births was 47.7 thousand, just slightly smaller than the real total of 48.2 thousands in 2001. Finally, the number of births by age group of Hong Kong residents (Population B) is obtained as the difference between the number of births of Hong Kong residents plus mainland mothers (Population A) and mainland mothers (Population C). The age-specific fertility rates and TFR of Hong Kong residents are then calculated.

The TFR was 0.930 in 2001 for population A according to new fertility rate definition of CSD in 2005. TFR for population B (Hong Kong residents only) was 0.794 in 2001. The TFR for mainland wives (Population C) was as high as 20 as only mothers giving births in 2001 were included and age-specific fertility rate was 1 in each age group. The TFR for population A is simply calculated by adding the population and births in population B and C. Thus TFR of population A is over counted as it assumes that the TFR for population C was unrealistically 20 in 2001.

If we assume that age-specific fertility rates for mainland wives are the same as those of Hong Kong residents, then age-specific rates and TFR of population A should be the same as those of population B, meaning that TFR for population A is 0.794.

In table 7, we set up another set of data. Assuming the same population and births for population B, but the simulated number of mainland mothers (Population C1) is estimated by assuming that their age-specific fertility rates are 2 times of those of Hong Kong residents (Population B). The number of Hong Kong residents plus simulated mainland mothers (Population A1) is also re-calculated. Under these conditions, TFR for population B was still 0.794 in 2001. TFR for mainland mothers was a more realistic level of 1.587 in 2001 while the TFR for population A was 0.858, lower than 0.930 in table 6 and the figure of CSD (2005a).

Indeed, no data are available on the TFR of mainland wives or new mainland migrants in Hong Kong. But 2001 census data about the number of children living with each couple are illustrative. The 2001 data show that the average number was 1.4 for a couple of non-migrants (1.36 million couples), 1.3 for a couple that both husband and wife were new mainland migrants (2658 couples), 1.2 for a couple that only husband was new mainland migrant (4266 couples) and 1.6 for a couple that only wife was new

mainland migrant (90,325 couples) (CSD, 2002d: 21). The number of children for a couple that only wife was new mainland migrant was only 14.3% higher than the number of children of a local couple.

It is clear that the new CSD method would over count the TFR of Hong Kong. In 2001, the real TFR of Hong Kong should be 0.794-0.858 rather than 0.930. The problem of CSD method comes from only counting mainland mothers who give birth in Hong Kong in a particular year, resulting in an artificially high TFR of 20 for population C. If we like to include mainland wives in fertility calculation, then mainland wives of Hong Kong residents who stay in Hong Kong and mainland and their children given in mainland China should also be included (Figure 3). It is noted that the children given by wives of Hong Kong permanent residents in mainland China have right of abode in Hong Kong and they will come to Hong Kong with one-way permits as migrants in the near future. The nature of these children is similar to those children given by mainland wives in Hong Kong or those children given by Hong Kong residents outside Hong Kong. But this will make the collection of fertility statistics very complicated. One simple solution is to exclude the mainland mothers of Hong Kong residents and their babies given in Hong Kong from the fertility statistics. These babies would be treated in the same way as those given by non-Hong Kong residents in Hong Kong. They can still be counted in the birth statistics of Hong Kong.

#### **4 Marriage and migration**

The previous section reveals the low fertility rate in Hong Kong in recent years. Increasing proportion of never married women in the population has been considered a major factor in the declining fertility. In Hong Kong, the proportion of women aged 35-39 who had never married increased from just 4.5% in 1981 to 10.4% in 1991 and 18.8% in 2001 (CSD, 2002c). Other than changing life style, increasing women migrants from the mainland China have been considered as one major reason for causing gender imbalance and reducing marriage opportunities for women in Hong Kong (CSD, 2005b). According to table 8, the overall gender ratio for legal migrants (one-way permit holders) from mainland China to Hong Kong was below 70 males per 100 females in the period 1986-2004. The gender ratio for such migrants aged 25-34 was below 35 males per 100

females in the same period. In 2001, there were 15,449 female migrants in comparison with only 3946 male migrants aged 25-34. The gender ratio was only 26 males per 100 females in this age group in 2001. Does large number of female migrants to Hong Kong cause a shortage of male partners for marriage in Hong Kong? This section will attempt to clarify the linkage of migration and marriages in Hong Kong.

#### **4.1 Female dominated new migrants compensates male dominated old migrants**

According to table 9, the gender ratio of total population was 96 males per 100 females in 2001 in Hong Kong. Among population aged 20-44, the gender ratio was below 100 males per 100 females. Among the population aged 35-59 who were never married, widowed, divorced and separated and may like to find a partner, the gender ratio was also below 100 males per 100 females. Thus the overall gender ratio indicates a shortage of male population in Hong Kong. Female dominated migrants from mainland China are considered the main cause of the unbalanced gender ratio in Hong Kong (CSD, 2005b). Is there such a causal effect?

In the 2001 census marriage data, the people born in mainland China, Taiwan and Macao were combined as one group. Among the population who were born outside greater China, majority of them were domestic maids coming from Southeast Asian countries and were mainly females. According to 2001 census (CSD, 2002c), there was a total population of 0.44 million who were born outside greater China. Its gender ratio was 39 males per 100 females. Such situation of unbalanced gender ratio was found in all age groups aged 20-54 with all kinds of marriage statuses: married, never married, widowed and divorced/separated. Thus the population born outside greater China had the effect of reducing the overall gender ratio in Hong Kong. It is useful to exclude the population born outside greater China when the effect of migrants from mainland China on gender balance is considered. The gender ratios of population born in Hong Kong and mainland China, Taiwan and Macao will be analyzed in this section. As mentioned before, majority of people born in mainland China, Taiwan and Macao are born in mainland China.

In 2001, 2.26 million people in Hong Kong were born in mainland China, Taiwan and Macao (table 9). The overall gender ratio of this population was 96, the same as that of the total population of Hong Kong. This means that the gender ratio of this population was not lower than the average of population born in Hong Kong and outside greater



China. Among the population aged 20-24 and 40-59, there were more males than females indicating that migrants from mainland China did not cause excessive number of women in Hong Kong in these age groups. On the other hand, among the population aged 30-39, there were 34% more women than men indicating the effect of female dominated migrants from mainland China. However, this does not mean that there were fewer men than women among those who need to find a partner.

Among the population born in mainland China, Taiwan and Macao and aged 20-54, there were 17-43% more men than women among those who had never married. Among the people aged 20-34 who may need to find a partner, including those never married, widowed, divorced and separated, there were also more men than women. Thus among the population born in mainland China, Taiwan and Macao, the main problem is the lack of women rather than men.

Why the recent female dominated migration from mainland China does not change the basic situation that there are more men than women among those born in mainland China who may need to find a partner? The reason is that the migrants from mainland China in the 1960s and 1970s were male dominated. This resulted in a higher gender ratio of over 100 among the population born in mainland China in the age group 40-59. Many of these people may have to find partners in mainland China for marriage. This unbalanced gender ratio was also clear in the total population of Hong Kong according to 1981 census data. In 1981, the gender ratio of population aged 25-34, 35-44 and 45-54 was as high as 118, 130 and 116 respectively. Thus the recent female dominated new migrants from mainland China largely come to Hong Kong to compensate the gender unbalance caused by male dominated old migrants in the 1960s and 1970s. They do not greatly affect the chances for women to find their male partners in Hong Kong. This is also clear by focusing on the gender ratio of the population born in Hong Kong.

#### **4.2 Women shortage among the Hong Kong born population who may need a partner**

The population born in Hong Kong was 4 million in 2001. Its overall gender ratio was 105 males per 100 females (table 10). The number of male population was 5% more than that of female population. Among the population aged 20-59, men were generally more

than women by 3-10%. However, among the population who had never married, men were greater than women by 6-41% in all age groups 20-59 except age group 45-49. It is likely that some women married with men who had married/divorced before rather than such women married with people not born in Hong Kong.

Among the people who had never married, divorced and separated and thus may need to find a partner, there were also 10-34% more men than women in the age group 20-39. Clearly, there is a shortage of women rather than men among those who may need to find a partner for marriage among the population born in Hong Kong. There is shortage of men only in the age group 40-59. There are two possible reasons. First, men may be more likely to get re-married than women among those widowed or divorced. Second, a man is more likely to marry a younger woman. In the period 1981-2001, the median age of marriage of all bridegrooms was 3 years older than that of all brides in Hong Kong. Over 25% of bridegrooms were 5 years old than their brides in the same period (CSD, 2002d: 62-63). According to table 10, among the married people born in Hong Kong, there were more women than men among those aged 20-34 but more men than women among those aged 35-59.

Considering the population born in Hong Kong, mainland China, Taiwan and Macao as a whole, the gender ratio was 102, close to the gender ratio of the population born in Hong Kong in 2001. There were more females than males in the age group 30-39. But this did not affect the opportunities of these women to find their partners. Among the population aged 20-39 who may need a partner, there were 8-31% more men than women in 2001. Among the population who had never married, there were more men than women in the age range 20-59.

Another set of data that could explicitly show the marriage problem of population in Hong Kong are the shares of both male and female populations who have never married. If the share is low for male population but high for female population, then one may assume that the males have married with female migrants resulting in a shortage of men. However, according to table 11, both male and female populations born in Hong Kong had a similarly high share of people who had never married in 2001. For example, such shares were 15.5% and 15.6% for male and female populations aged 40-44 in 2001. Generally, the population born in mainland China, Taiwan and Macao had a much

smaller share of people who had never married. Such shares were 4.2% and 3.4% for male and female populations born in mainland China and Macao aged 40-44 in 2001. On the other hand, male population born outside greater China had a medium share of people who had never married (10.6% for age group 40-44) while the female population born outside greater China had a very high share of people who had never married (19.1% for age group 40-44).

Thus although there were more men than women in the total population in Hong Kong which was caused by a lower gender ratio of population born in mainland China, Taiwan, Macao and outside greater China, there were generally more men than women among the population who was born in greater China and had never married. For population born in Hong Kong who may need a partner, the problem was also more men than women in age group 20-39. The problem of more women than men only occurred among those aged 40-59. Thus at least for women aged 20-39 in Hong Kong, the genuine problem was lack of suitable partners to get married, rather than a shortage of men being caused by the inflow of female dominated migrants from mainland China.

Indeed, due to rising economic status and education level, women may be more difficult to find suitable partners who can match their expectation (U-Beat Magazine, 2006). According to a recent survey of 500 women aged 25-45 in Hong Kong by RTHK (Radio and Television Hong Kong) and City University of Hong Kong (Ming Pao, 2006b), 84.3% of women consider that stable income is the most important condition in choosing partners. However, globalization and economic transition in Hong Kong necessitate frequent employment changes and less permanent employment thus reducing the economic stability and attractiveness of men for marriage. All these contribute to delayed marriage and the increasing proportion of people who are not married. These issues have to be addressed to deal with low fertility rate in Hong Kong. Indeed, if the marriage problem is caused by the female dominated migrants from mainland China, then it should not affect the number of births. As the male population of Hong Kong is not greatly affected by such immigration and men simply marry mainland women instead of local women, thus the total number of couples and the total number of births would not be affected. But as shown in the previous section, both birth number and fertility rate have declined in Hong Kong. Furthermore, migrants and visitors from mainland China

who marry Hong Kong husbands do give many births in Hong Kong. It can be concluded that migrants from mainland China do not affect the marriage opportunities for women and the fertility rate in Hong Kong.

## **5 Population ageing and migration**

Other than low fertility rate, another burning demographic issue in Hong Kong is population ageing. In 2004, the number of births remained at the low level of 49,800, while the number of one-way permit holders from mainland China reduced from 53,500 in 2003 to 38,000 in 2004, indicating the trend of slow population growth in Hong Kong (Home Affairs Department, 2004). This has stimulated public concern over local population issue and policy. Migration is considered by many as a possible solution to Hong Kong's ageing problem (Yip, Lee, Chan and Au, 2001; Tsui, 2005). This section will discuss the actual situation of population ageing in Hong Kong and whether migration is an effective measure to solve the ageing problem in the city.

### **5.1 Ageing and the elderly population**

Many people believe that ageing is very serious in Hong Kong currently and have proposed solutions such as increasing fertility rate and immigration. But this is a misconception. Ageing refers to an increase in the proportion of elderly population aged 60+ or 65+ in the total population and such proportion remains at a high level. Currently, the ageing problem is not serious in Hong Kong. The proportion of elderly population aged 65+ in the total population only increased slightly from 8.7% in 1991 to 10.2% in 1996 and 11.2% in 2001 (CSD, 2002d: 10). Compared with other developed countries, this proportion was low and even lower than that of USA that had no problem of population ageing. The proportion of elderly population aged 65+ was 16.4% in Germany, 17.2% in Japan, 17.4% in Sweden and 12.3% in USA in 2000 (Department of Economic and Social Affairs Population Division, 2001).

The current low proportion of elderly population in Hong Kong benefits from high fertility rate and significant immigration from the 1950s to 1970s. But similar to many other countries, the proportion of people aged 65+ will rise continuously, reaching 12.5% in 2012, 20% in 2025 and 29.2% in 2050 (Planning Department, 2003: 57; Department of Economic and Social Affairs Population Division, 2001). By 2050, Hong

Kong would have very serious ageing problem. The situation of population ageing will be similar to that in Germany and Sweden. The proportion of elderly population in these two countries will be 31% and 30.4% in 2050 respectively. In 2050, Japan will be the country with the most serious ageing in the world. Its proportion of elderly population will reach 36.4% in that year.

It should be noted that even if the TFR maintains at the replacement level of 2.1, the level where births offset deaths, the proportion of elderly population would be around 20%. The current proportion of elderly population in Hong Kong is far below the normal level. Therefore, population ageing is a normal phenomenon. However, a society needs to take measures to limit the proportion of elderly population under 25%. Otherwise, a high proportion of elderly population does have serious social and economic consequences.

Finally, the number of elderly population aged over 60 or 65 (born before 1990 or 1985) from now to 2050 is determined by the current population. According to the age structure data from 2001 census, the number of people aged 60 or 65 was about 50,000 in 2001. In 2011, 2021 and 2031, the number of people entering age of 60 will be 96,000, 135,000 and 114,000 respectively. The number of such people will fall back to 50,000 only by 2061. Therefore, it is certain that there will be sustained growth of elderly population from now to 2031. Raising fertility rate or attracting more immigrants cannot change such growth of elderly population up to 2031. It is projected that population aged 65+ will increase from 747,000 in 2001 to 953,000 in 2012 (CSD, 2002c; Planning Department, 2003). Therefore, the government and society should prepare well in advance for the medical care and financial support of the elderly.

## **5.2 The population target, fertility level and migration policy**

When discussing population policy, many people do not differentiate population target from the fertility level and migration policy. This makes it difficult to tackle the key issue of the population problem. Population target refers to the desirable size of total population to ensure adequate labour supply to support economic development. Concerns on ageing are actually on whether Hong Kong will have enough working population to create sufficient wealth to support a huge elderly population. In order to solve the derived economic problem of population ageing, we can raise fertility level so as to increase future labour supply. Other options include improving education and skill level of the

population or speeding up economic restructuring to increase personal income so that individuals, households and society are able to support the elderly population.

As mentioned before, a serious ageing problem will only occur in the future. The immigration of young labour force at that time will reduce the proportion of elderly population, increase labour supply as well as the number of births. But currently, such immigration measure is not effective or necessary for solving ageing problem, and may even exaggerate the ageing problem in future. The immigration of people aged 25-40 now would only increase the number of elderly population and thus worsen the ageing situation, 20-35 years later. Therefore, migration is only a useful and effective measure in future but not now. It is another matter if immigration of more talents is needed to meet the needs of current economic development in Hong Kong. A migration policy that tackles ageing problem should be differentiated from a migration policy for enhancing economic competitiveness.

## **6 Conclusion**

Demographic changes have profound social and economic implications. The focus of this paper is on the demographic effect of migration on population in Hong Kong. There are positive and negative perceptions of the demographic effects of migration. Some are correct perceptions while others are wrong. For example, migrants from mainland have been considered as an effective way to relieve the problem of population ageing in Hong Kong (Yip, Lee, Chan and Au, 2001). Many people believe that the low marriage rate of female population in Hong Kong is largely caused by the immigration of women migrants from mainland China. This paper shows that these perceptions are not valid. Furthermore, the real effect of the mainland wives and new migrants on the fertility level in Hong Kong is not well understood.

Based on detailed analyses of population, migration and fertility data, this paper securitize the demographic effects of migration related to above issues in Hong Kong and the result will help to form proper policy response to acute fertility problem and the “expected” severe population ageing in future.

During the period 1961-1993, net migration was smaller than natural population increase in Hong Kong in most years until 1993. It was in the most recent period 1993-

2004 that migration became the most important source of population growth in Hong Kong. Migration accounted for over 56% of population growth in this period except 1997 and 2002. Overall, net migration accounted for less than 39.2% of population growth in the period 1961-2004.

The paper argues that the existing method of calculating TFR of Hong Kong is problematic and the children given by the mainland wives of Hong Kong permanent residents in Hong Kong should be excluded. It is estimated that the real TFR of Hong Kong should be 0.794-0.858 rather than 0.930 in 2001. If we like to include mainland wives in fertility calculation, then mainland wives of Hong Kong residents who stay in Hong Kong and mainland and their children given in mainland China should also be included. It is noted that the children given by wives of Hong Kong permanent residents in mainland China have right of abode in Hong Kong and they will come to Hong Kong with one-way permits as migrants in the near future. The nature of these children is similar to those children born in Hong Kong to mainland wives or those children given by Hong Kong residents outside Hong Kong. But this will make the collection of fertility statistics very complicated. One simple solution is to exclude the mainland mothers of Hong Kong residents and their babies given in Hong Kong from the fertility statistics.

Although there are more women than men in the total population in Hong Kong, there are generally more men than women among the population who born in greater China and have never married. For population born in Hong Kong, the problem was also more men than women in the age group 20-39 in 2001. Thus at least for women aged 20-39 in Hong Kong, the genuine problem is lack of suitable partners to get married, rather than a shortage of men due to the inflow of female dominated migrants from mainland China.

The paper argues that ageing is not serious in Hong Kong currently, and that immediate immigration of young migrants is not an effective solution to future ageing problem. Current migrants will soon or later become elderly people, making future ageing much worse. The paper argues that the timing of migration is important in assessing its impact on population ageing. Migration measure is best to be adopted in future when ageing is very serious rather than now. Indeed, population ageing is a normal phenomenon following a similar trend in other countries. The number of elderly

population in 2050 has already been determined. Therefore, the society has to prepare well for the possible peak of population ageing in the future. It is important to distinguish migration policy for dealing with ageing problem from the migration policy for attracting talents for economic development. The fundamental solution to population ageing would be maintaining a reasonable fertility level (TFR around 2), increasing individual and family saving and raising social security contribution for supporting elderly life.

Because of the social development and changes in life style, most couples in Hong Kong choose to have less than two or even no children. To increase fertility level will be a great social challenge. Countries like Germany and Japan have adopted various incentives to raise the fertility level without much success. The feasible measure for Hong Kong is to increase government support for family to raise their children such as child allowance in income tax and childcare facilities. Improving education quality, living standards and housing will also help. Incentives should particularly aim to encourage couples to have 2<sup>nd</sup> and 3<sup>rd</sup> children. For example, the child allowance of the 2<sup>nd</sup> and 3<sup>rd</sup> children can be much higher than that of the 1<sup>st</sup> child. Such policy has to be strong enough to bring significant effect. The policy will not result in very high TFR (such as over 3) in Hong Kong as only some couples may eventually be persuaded to have more than two children in Hong Kong.

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Table 1 Annual and accumulated population change in Hong Kong 1961-2004 (Unit: thousand unless specified)

| Year                          | 1961  | 1971 | 1981 | 1991 | 1996 | 2001 | 2004 |
|-------------------------------|-------|------|------|------|------|------|------|
| Total population              | 3195  | 4096 | 5239 | 5815 | 6467 | 6759 | 6916 |
| Annual change                 |       |      |      |      |      |      |      |
| Population growth rate (%)    | 2.1   | 2.5  | 1.8  | 1.1  | 1.1  | 0.7  | 1.0  |
| Births                        | 111   | 80   | 87   | 68   | 63   | 48   | 50   |
| Deaths                        | 19    | 20   | 25   | 28   | 32   | 33   | 37   |
| Natural increase              | 92    | 59   | 62   | 40   | 31   | 16   | 11   |
| Net migration                 | -25   | 41   | 32   | 23   | 41   | 32   | 59   |
| Population change             | 67    | 100  | 93   | 63   | 72   | 48   | 70   |
| Share of net migration (%)    | -36.5 | 40.7 | 33.7 | 37.0 | 56.9 | 66.5 | 83.9 |
| Accumulated change since 1961 |       |      |      |      |      |      |      |
| Natural increase              | 92    | 835  | 1424 | 1900 | 2090 | 2192 | 2227 |
| Net migration                 | -25   | 133  | 687  | 788  | 1124 | 1315 | 1436 |
| Population change             | 67    | 967  | 2110 | 2687 | 3214 | 3506 | 3663 |
| Share of net migration (%)    | -36.5 | 13.7 | 32.5 | 29.3 | 35.0 | 37.5 | 39.2 |

Note: the total population was adjusted upward by 124.5 thousands in mid-1996 due to the change in statistics approach.

Source: calculated by the author based on data from CSD (2006).

Table 2 Share of population born in mainland China, Taiwan and Macao in total population in Hong Kong in 2001 (%)

| Age group | Share in total population born in greater China |        |       | Share in total population of Hong Kong |        |       |
|-----------|-------------------------------------------------|--------|-------|----------------------------------------|--------|-------|
|           | Male                                            | Female | Total | Male                                   | Female | Total |
| 0 - 4     | 4.5                                             | 4.3    | 4.4   | 4.3                                    | 4.1    | 4.2   |
| 5 - 9     | 11.4                                            | 11.8   | 11.6  | 10.9                                   | 11.2   | 11.1  |
| 10 - 14   | 19.8                                            | 20.0   | 19.9  | 19.2                                   | 19.4   | 19.3  |
| 15 - 19   | 16.8                                            | 16.2   | 16.5  | 16.5                                   | 15.8   | 16.1  |
| 20 - 24   | 16.8                                            | 16.3   | 16.6  | 16.5                                   | 13.8   | 15.1  |
| 25 - 29   | 21.7                                            | 23.4   | 22.5  | 20.9                                   | 19.0   | 19.9  |
| 30 - 34   | 20.5                                            | 28.9   | 24.9  | 19.5                                   | 23.5   | 21.7  |
| 35 - 39   | 20.3                                            | 29.4   | 25.0  | 19.5                                   | 25.8   | 22.9  |
| 40 - 44   | 32.8                                            | 33.9   | 33.3  | 31.6                                   | 30.6   | 31.1  |
| 45 - 49   | 41.1                                            | 41.8   | 41.4  | 39.6                                   | 38.5   | 39.1  |
| 50 - 54   | 55.0                                            | 54.3   | 54.6  | 52.7                                   | 50.6   | 51.7  |
| 55 - 59   | 77.8                                            | 75.4   | 76.7  | 72.2                                   | 69.1   | 70.8  |
| 60 - 64   | 75.3                                            | 74.3   | 74.8  | 70.6                                   | 70.3   | 70.4  |
| 65+       | 82.7                                            | 81.9   | 82.3  | 80.4                                   | 80.0   | 80.2  |
| Total     | 35.0                                            | 37.2   | 36.1  | 33.7                                   | 33.8   | 33.7  |

Source: calculated by the author based on data from CSD (2002c: 12-15)

Table 3 Major fertility indicators of Hong Kong 1966-2004

| Year                                                         | 1966                                                                   | 1971  | 1976  | 1981  | 1986  | 1991  | 1996  | 2001  | 2004  |
|--------------------------------------------------------------|------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| TFR                                                          | na                                                                     | 3.459 | 2.480 | 1.933 | 1.367 | 1.281 | 1.191 | 0.932 | 0.927 |
| Total birth (thousand)                                       | 91.8                                                                   | 79.8  | 78.5  | 86.8  | 71.6  | 68.3  | 63.3  | 48.2  | 49.8  |
|                                                              | Index (1981=100)                                                       |       |       |       |       |       |       |       |       |
| TFR                                                          | na                                                                     | 179   | 128   | 100   | 71    | 66    | 62    | 48    | 48    |
| Total birth                                                  | 106                                                                    | 92    | 90    | 100   | 82    | 79    | 73    | 56    | 57    |
|                                                              | Average number of children ever born by a mother born at various years |       |       |       |       |       |       |       |       |
| Mother's year of birth                                       | 1928                                                                   | 1933  | 1938  | 1943  | 1948  | 1953  | 1958  | 1963  | na    |
| Number of children by age 39                                 | 3.011                                                                  | 4.681 | 3.522 | 3.308 | 2.592 | 1.984 | 1.734 | 1.404 | na    |
| Number of children by age 50 (Life fertility rate)           | 3.217                                                                  | 4.837 | 3.600 | 3.351 | 2.628 | 2.011 | 1.758 | 1.424 | na    |
| Number of children by age 39 as percentage of that by age 50 | 93.6                                                                   | 96.8  | 97.9  | 98.7  | 98.6  | 98.7  | 98.7  | 98.7  | na    |
|                                                              | Index (1981=100)                                                       |       |       |       |       |       |       |       |       |
| Number of children by age 39                                 | 91                                                                     | 142   | 106   | 100   | 78    | 60    | 52    | 42    | na    |
| Number of children by age 50                                 | 96                                                                     | 144   | 107   | 100   | 78    | 60    | 52    | 42    | na    |
| Number of children by age 39 as percentage of that by age 50 | 95                                                                     | 98    | 99    | 100   | 100   | 100   | 100   | 100   | na    |

Sources: CSD (2002d; 2006).

Table 4 Index of age-specific fertility rate and share of now married females (1981=100)

| Year      | 1976                                         | 1981 | 1986 | 1991 | 1996 | 2001 |
|-----------|----------------------------------------------|------|------|------|------|------|
| Age group | Age specific fertility rate                  |      |      |      |      |      |
| 15 - 19   | 142                                          | 100  | 58   | 58   | 50   | 33   |
| 20 - 24   | 126                                          | 100  | 57   | 45   | 43   | 34   |
| 25 - 29   | 124                                          | 100  | 73   | 63   | 53   | 37   |
| 30 - 34   | 122                                          | 100  | 81   | 84   | 81   | 64   |
| 35 - 39   | 141                                          | 100  | 79   | 88   | 94   | 85   |
| 40 - 44   | 200                                          | 100  | 57   | 71   | 71   | 71   |
| 45 - 49   | 200                                          | 100  | 0    | 0    | 0    | 0    |
| Age group | Age specific fertility rate of married women |      |      |      |      |      |
| 15 - 19   | 127                                          | 100  | 98   | 117  | 101  | 160  |
| 20 - 24   | 114                                          | 100  | 76   | 76   | 75   | 79   |
| 25 - 29   | 115                                          | 100  | 82   | 82   | 73   | 62   |
| 30 - 34   | 115                                          | 100  | 85   | 94   | 99   | 84   |
| 35 - 39   | 138                                          | 100  | 81   | 95   | 105  | 103  |
| 40 - 44   | 214                                          | 100  | 57   | 71   | 86   | 86   |
| 45 - 49   | 200                                          | 100  | 0    | 0    | 0    | 0    |
| Age group | Share of now married females                 |      |      |      |      |      |
| 15 - 19   | 133                                          | 100  | 67   | 67   | 67   | 33   |
| 20 - 24   | 111                                          | 100  | 75   | 61   | 57   | 43   |
| 25 - 29   | 107                                          | 100  | 90   | 78   | 72   | 61   |
| 30 - 34   | 105                                          | 100  | 95   | 89   | 82   | 75   |
| 35 - 39   | 102                                          | 100  | 96   | 92   | 87   | 82   |
| 40 - 44   | 101                                          | 100  | 98   | 95   | 91   | 86   |
| 45 - 49   | 101                                          | 100  | 100  | 100  | 96   | 91   |

Source: CSD (2005b).



Table 5 Number of live births by order of live birth 1981-2001

| Order of live birth \Year                                      | 1981  | 1986  | 1991  | 1996  | 2001  |
|----------------------------------------------------------------|-------|-------|-------|-------|-------|
| Number of live birth by order of live birth (thousand)         |       |       |       |       |       |
| 1st                                                            | 37.9  | 32.1  | 31.6  | 30.8  | 25.7  |
| 2nd                                                            | 29.1  | 26.0  | 25.6  | 24.6  | 17.7  |
| 3rd                                                            | 12.7  | 9.7   | 8.3   | 6.1   | 3.8   |
| 4th+                                                           | 7.1   | 3.9   | 2.8   | 1.8   | 1.0   |
| Total                                                          | 86.8  | 71.6  | 68.3  | 63.3  | 48.2  |
| Number of first marriages                                      | 41.2  | 34.1  | 34.5  | 29.4  | 25.3  |
| Index (1981=100)                                               |       |       |       |       |       |
| 1st                                                            | 100   | 85    | 83    | 81    | 68    |
| 2 <sup>nd</sup>                                                | 100   | 89    | 88    | 85    | 61    |
| 3 <sup>rd</sup>                                                | 100   | 76    | 65    | 48    | 30    |
| 4th+                                                           | 100   | 55    | 39    | 25    | 14    |
| Total                                                          | 100   | 83    | 79    | 73    | 56    |
| Number of first marriages                                      | 100   | 83    | 84    | 71    | 61    |
| Number of live birth per first marriage by order of live birth |       |       |       |       |       |
| 1st                                                            | 0.921 | 0.941 | 0.915 | 1.046 | 1.015 |
| 2 <sup>nd</sup>                                                | 0.705 | 0.762 | 0.742 | 0.837 | 0.700 |
| 3 <sup>rd</sup>                                                | 0.309 | 0.284 | 0.241 | 0.209 | 0.152 |
| 4th+                                                           | 0.172 | 0.114 | 0.080 | 0.061 | 0.040 |
| Total                                                          | 2.106 | 2.101 | 1.978 | 2.153 | 1.907 |

Source: CSD (2002d)

Table 6 Calculating TFR based on Hong Kong residents and mainland mothers in 2001

| Age group | Hong Kong residents plus mainland mothers (A) |              |                             | Hong Kong residents (B) |              |                             | Mainland mothers (C) |              |                             |
|-----------|-----------------------------------------------|--------------|-----------------------------|-------------------------|--------------|-----------------------------|----------------------|--------------|-----------------------------|
|           | Population                                    | Total births | Age-specific fertility rate | Population              | Total births | Age-specific fertility rate | Population           | Total births | Age-specific fertility rate |
| 15 - 19   | 213192                                        | 853          | 0.004                       | 213192                  | 853          | 0.004                       | 0                    | 0            | 0                           |
| 20 - 24   | 208015                                        | 6032         | 0.029                       | 207835                  | 5852         | 0.028                       | 180                  | 180          | 1                           |
| 25 - 29   | 233002                                        | 13281        | 0.057                       | 230544                  | 10823        | 0.047                       | 2458                 | 2458         | 1                           |
| 30 - 34   | 267015                                        | 16555        | 0.062                       | 263967                  | 13507        | 0.051                       | 3048                 | 3048         | 1                           |
| 35 - 39   | 325678                                        | 9445         | 0.029                       | 323825                  | 7592         | 0.023                       | 1853                 | 1853         | 1                           |
| 40 - 44   | 307927                                        | 1540         | 0.005                       | 307927                  | 1540         | 0.005                       | 0                    | 0            | 0                           |
| 45 - 49   | 243712                                        | 0            | 0.000                       | 243712                  | 0            | 0                           | 0                    | 0            | 0                           |
| Total     | 1798541                                       | <u>47706</u> | <u>0.930</u>                | 1791002                 | <u>40167</u> | <u>0.794</u>                | 7539                 | <u>7539</u>  | <u>20</u>                   |

Note: mainland mothers refer to those mainland residents whose husbands were Hong Kong residents and who gave birth in Hong Kong in 2001. Hong Kong residents refer to those born in Hong Kong, Taiwan, mainland China and Macao. Total births include those given by Hong Kong residents outside Hong Kong but exclude those given by non-Hong Kong residents in Hong Kong whose husbands are not Hong Kong residents.

Sources: Calculated based on the data from CSD (2005a; 2002c; 2002d).

Table 7 Calculating TFR based on Hong Kong residents and simulated mainland mothers in 2001

| Age group | Hong Kong residents plus simulated mainland mothers (A1) |              |                             | Hong Kong residents (B) |              |                             | Simulated mainland mothers (C1) |             |                             |
|-----------|----------------------------------------------------------|--------------|-----------------------------|-------------------------|--------------|-----------------------------|---------------------------------|-------------|-----------------------------|
|           | Population                                               | Total births | Age-specific fertility rate | Population              | Total births | Age-specific fertility rate | Population                      | Total birth | Age-specific fertility rate |
| 15 - 19   | 213192                                                   | 853          | 0.004                       | 213192                  | 853          | 0.004                       | 0                               | 0           | 0.008                       |
| 20 - 24   | 211037                                                   | 6032         | 0.029                       | 207835                  | 5852         | 0.028                       | 3202                            | 180         | 0.056                       |
| 25 - 29   | 256718                                                   | 13281        | 0.052                       | 230544                  | 10823        | 0.047                       | 26174                           | 2458        | 0.094                       |
| 30 - 34   | 293753                                                   | 16555        | 0.056                       | 263967                  | 13507        | 0.051                       | 29786                           | 3048        | 0.102                       |
| 35 - 39   | 363341                                                   | 9445         | 0.026                       | 323825                  | 7592         | 0.023                       | 39516                           | 1853        | 0.047                       |
| 40 - 44   | 307927                                                   | 1540         | 0.005                       | 307927                  | 1540         | 0.005                       | 0                               | 0           | 0.010                       |
| 45 - 49   | 243712                                                   | 0            | 0.000                       | 243712                  | 0            | 0                           | 0                               | 0           | 0.000                       |
| Total     | 1889681                                                  | <u>47706</u> | <u>0.858</u>                | 1791002                 | <u>40167</u> | <u>0.794</u>                | 98679                           | <u>7539</u> | <u>1.587</u>                |

Source: see table 6. Simulated number of mainland mothers (C1) is estimated by assuming that their age-specific fertility rates are 2 times of those of Hong Kong residents (B). The number of Hong Kong residents plus simulated mainland mothers (A1) is also re-calculated.

Table 8 Gender ratio of one-way permit holders from mainland China to Hong Kong 1986-2004

| Age group | Gender       | 1986  | 1991  | 1996  | 1998  | 2000  | 2001  | 2004  |
|-----------|--------------|-------|-------|-------|-------|-------|-------|-------|
| 0-14      | M            | 4757  | 4152  | 13137 | 15486 | 9923  | 9055  | 5741  |
|           | F            | 3480  | 3449  | 12079 | 14685 | 9701  | 8521  | 5579  |
|           | Gender ratio | 137   | 120   | 109   | 105   | 102   | 106   | 103   |
| 15-24     | M            | 2302  | 2381  | 2888  | 2109  | 1698  | 1191  | 1069  |
|           | F            | 2395  | 2185  | 4551  | 2419  | 1799  | 1233  | 1215  |
|           | Gender ratio | 96    | 109   | 63    | 87    | 94    | 97    | 88    |
| 25-34     | M            | 1558  | 1640  | 1983  | 317   | 3000  | 3946  | 1132  |
|           | F            | 4817  | 4840  | 9426  | 3601  | 14169 | 15449 | 13677 |
|           | Gender ratio | 32    | 34    | 21    | 9     | 21    | 26    | 8     |
| 35-44     | M            | 1193  | 1102  | 1158  | 711   | 1501  | 3219  | 1269  |
|           | F            | 2841  | 3378  | 8771  | 9036  | 7527  | 7030  | 5508  |
|           | Gender ratio | 42    | 33    | 13    | 8     | 20    | 46    | 23    |
| 45-54     | M            | 571   | 468   | 503   | 364   | 623   | 511   | 452   |
|           | F            | 1341  | 1459  | 4688  | 3305  | 2436  | 1202  | 1131  |
|           | Gender ratio | 43    | 32    | 11    | 11    | 26    | 43    | 40    |
| 55+       | M            | 408   | 448   | 526   | 393   | 678   | 590   | 318   |
|           | F            | 1198  | 1259  | 1469  | 3613  | 4475  | 1708  | 981   |
|           | Gender ratio | 34    | 36    | 36    | 11    | 15    | 35    | 32    |
| Unknown   | M            | 53    | 6     |       |       |       |       |       |
|           | F            | 71    | 15    |       |       |       |       |       |
| Total     | M            | 10842 | 10197 | 20195 | 19380 | 17423 | 18512 | 9981  |
|           | F            | 16143 | 16585 | 40984 | 36659 | 40107 | 35143 | 28091 |
|           | Gender ratio | 67    | 61    | 49    | 53    | 43    | 53    | 36    |

Sources: CSD (2002a: 71); Home Affairs Department, 2004, The quarterly report on questionnaire survey, Fourth Quarter of 2004, [http://www.had.gov.hk/en/public\\_services/services\\_for\\_new\\_arrivals\\_from\\_the\\_mainland/surveys.htm](http://www.had.gov.hk/en/public_services/services_for_new_arrivals_from_the_mainland/surveys.htm), accessed on 12 February 2006.

Table 9 Gender ratio by married status and age group in the total population of Hong Kong and in population born in mainland China, Taiwan and Macao in 2001 (males per 100 females)

| Age group                                              | Never married | Now Married | Widowed/<br>divorced/separated | Total | Never married/<br>widowed/divorced/<br>separated |
|--------------------------------------------------------|---------------|-------------|--------------------------------|-------|--------------------------------------------------|
| Total population of Hong Kong                          |               |             |                                |       |                                                  |
| 20 - 24                                                | 99            | 38          | 38                             | 92    | 98                                               |
| 25 - 29                                                | 108           | 52          | 51                             | 85    | 106                                              |
| 30 - 34                                                | 112           | 65          | 45                             | 79    | 106                                              |
| 35 - 39                                                | 105           | 83          | 48                             | 85    | 93                                               |
| 40 - 44                                                | 95            | 104         | 40                             | 98    | 73                                               |
| 45 - 49                                                | 94            | 109         | 40                             | 101   | 66                                               |
| 50 - 54                                                | 123           | 117         | 37                             | 108   | 64                                               |
| 55 - 59                                                | 177           | 131         | 36                             | 118   | 57                                               |
| All ages                                               | 106           | 101         | 32                             | 96    | 91                                               |
| Population born in Mainland of China, Taiwan and Macao |               |             |                                |       |                                                  |
| 20 - 24                                                | 117           | 63          | 50                             | 110   | 117                                              |
| 25 - 29                                                | 136           | 62          | 51                             | 94    | 132                                              |
| 30 - 34                                                | 146           | 55          | 33                             | 66    | 118                                              |
| 35 - 39                                                | 124           | 64          | 29                             | 65    | 72                                               |
| 40 - 44                                                | 127           | 107         | 31                             | 102   | 60                                               |
| 45 - 49                                                | 134           | 110         | 34                             | 104   | 60                                               |
| 50 - 54                                                | 143           | 122         | 36                             | 113   | 58                                               |
| 55 - 59                                                | 242           | 137         | 34                             | 123   | 55                                               |
| All ages                                               | 120           | 112         | 29                             | 96    | 69                                               |

Source: calculated by the author based on data in CSD (2002c).

Table 10 Gender ratio by married status and age group in population born in Hong Kong and in population born in Hong Kong, mainland China, Taiwan and Macao in 2001 (males per 100 females)

| Age group                                                         | Never married | Now Married | Widowed/divorced/separated | Total | Never married/<br>widowed/divorced/<br>separated |
|-------------------------------------------------------------------|---------------|-------------|----------------------------|-------|--------------------------------------------------|
| Population born in Hong Kong                                      |               |             |                            |       |                                                  |
| 20 - 24                                                           | 110           | 48          | 53                         | 106   | 110                                              |
| 25 - 29                                                           | 124           | 61          | 69                         | 103   | 123                                              |
| 30 - 34                                                           | 139           | 85          | 65                         | 104   | 134                                              |
| 35 - 39                                                           | 124           | 102         | 65                         | 106   | 114                                              |
| 40 - 44                                                           | 106           | 113         | 48                         | 107   | 87                                               |
| 45 - 49                                                           | 98            | 115         | 48                         | 107   | 75                                               |
| 50 - 54                                                           | 129           | 118         | 40                         | 110   | 74                                               |
| 55 - 59                                                           | 141           | 120         | 39                         | 108   | 64                                               |
| All ages                                                          | 113           | 104         | 42                         | 105   | 106                                              |
| Population born in Hong Kong, Mainland of China, Taiwan and Macao |               |             |                            |       |                                                  |
| 20 - 24                                                           | 111           | 52          | 52                         | 106   | 111                                              |
| 25 - 29                                                           | 126           | 61          | 64                         | 101   | 125                                              |
| 30 - 34                                                           | 140           | 74          | 53                         | 93    | 131                                              |
| 35 - 39                                                           | 124           | 89          | 52                         | 94    | 108                                              |
| 40 - 44                                                           | 108           | 110         | 42                         | 105   | 82                                               |
| 45 - 49                                                           | 104           | 113         | 42                         | 106   | 70                                               |
| 50 - 54                                                           | 133           | 120         | 38                         | 111   | 67                                               |
| 55 - 59                                                           | 191           | 133         | 36                         | 119   | 58                                               |
| All ages                                                          | 114           | 108         | 33                         | 102   | 96                                               |

Source: calculated by the author based on data in CSD (2002c).

Table 11 The share of population never married by age group, gender and place of birth in Hong Kong in 2001 (%)

| Age group | Gender | Hong Kong | The Mainland of China, Taiwan and Macao | Hong Kong, Mainland of China, Taiwan and Macao | Elsewhere | Total |
|-----------|--------|-----------|-----------------------------------------|------------------------------------------------|-----------|-------|
| 20 - 24   | Male   | 96.6      | 92.4                                    | 95.9                                           | 75.5      | 95.5  |
|           | Female | 92.6      | 86.6                                    | 91.6                                           | 75.2      | 89.2  |
|           | Total  | 94.7      | 89.6                                    | 93.8                                           | 75.2      | 92.2  |
| 25 - 29   | Male   | 80.1      | 63.3                                    | 76.5                                           | 49.1      | 75.5  |
|           | Female | 66.6      | 43.8                                    | 61.3                                           | 52.7      | 59.7  |
|           | Total  | 73.5      | 53.3                                    | 68.9                                           | 52.2      | 66.9  |
| 30 - 34   | Male   | 49.0      | 29.3                                    | 45.0                                           | 27.2      | 44.1  |
|           | Female | 36.7      | 13.2                                    | 29.9                                           | 37.1      | 31.2  |
|           | Total  | 43.0      | 19.6                                    | 37.2                                           | 35.4      | 36.9  |
| 35 - 39   | Male   | 26.9      | 9.6                                     | 23.4                                           | 17.2      | 23.2  |
|           | Female | 22.9      | 5.0                                     | 17.6                                           | 27.0      | 18.8  |
|           | Total  | 25.0      | 6.8                                     | 20.4                                           | 24.9      | 20.8  |
| 40 - 44   | Male   | 15.5      | 4.2                                     | 11.8                                           | 10.6      | 11.7  |
|           | Female | 15.6      | 3.4                                     | 11.4                                           | 19.1      | 12.2  |
|           | Total  | 15.5      | 3.8                                     | 11.6                                           | 16.9      | 12.0  |
| 45 - 49   | Male   | 10.4      | 4.2                                     | 7.8                                            | 7.5       | 7.8   |
|           | Female | 11.3      | 3.2                                     | 7.9                                            | 13.4      | 8.3   |
|           | Total  | 10.8      | 3.7                                     | 7.9                                            | 11.5      | 8.1   |
| 50 - 54   | Male   | 9.0       | 3.7                                     | 6.1                                            | 6.0       | 6.1   |
|           | Female | 7.6       | 2.9                                     | 5.1                                            | 8.9       | 5.3   |
|           | Total  | 8.3       | 3.3                                     | 5.6                                            | 7.8       | 5.7   |
| 55 - 59   | Male   | 7.0       | 3.4                                     | 4.2                                            | 4.6       | 4.2   |
|           | Female | 5.4       | 1.7                                     | 2.6                                            | 4.9       | 2.8   |
|           | Total  | 6.2       | 2.7                                     | 3.5                                            | 4.7       | 3.6   |
| All ages  | Male   | 59.3      | 20.8                                    | 45.8                                           | 35.6      | 45.4  |
|           | Female | 55.5      | 16.6                                    | 41.1                                           | 40.6      | 41.0  |
|           | Total  | 57.5      | 18.6                                    | 43.5                                           | 39.2      | 43.2  |

Source: calculated by the author based on data in CSD (2002c).

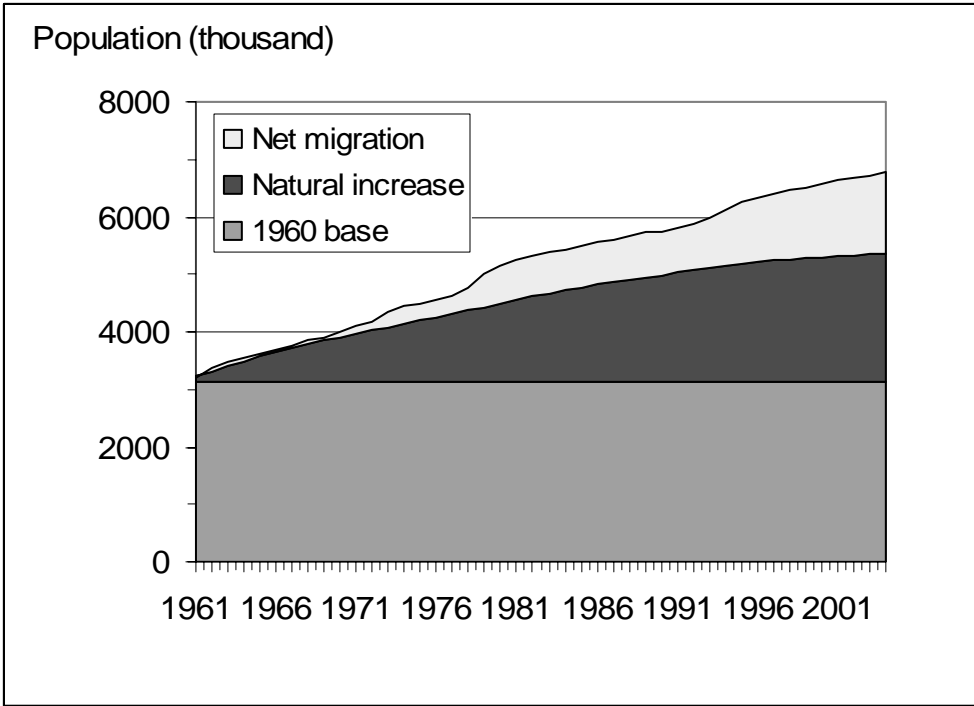


Figure 1 Accumulated contribution of migration and natural increase to total population in Hong Kong 1961-2001



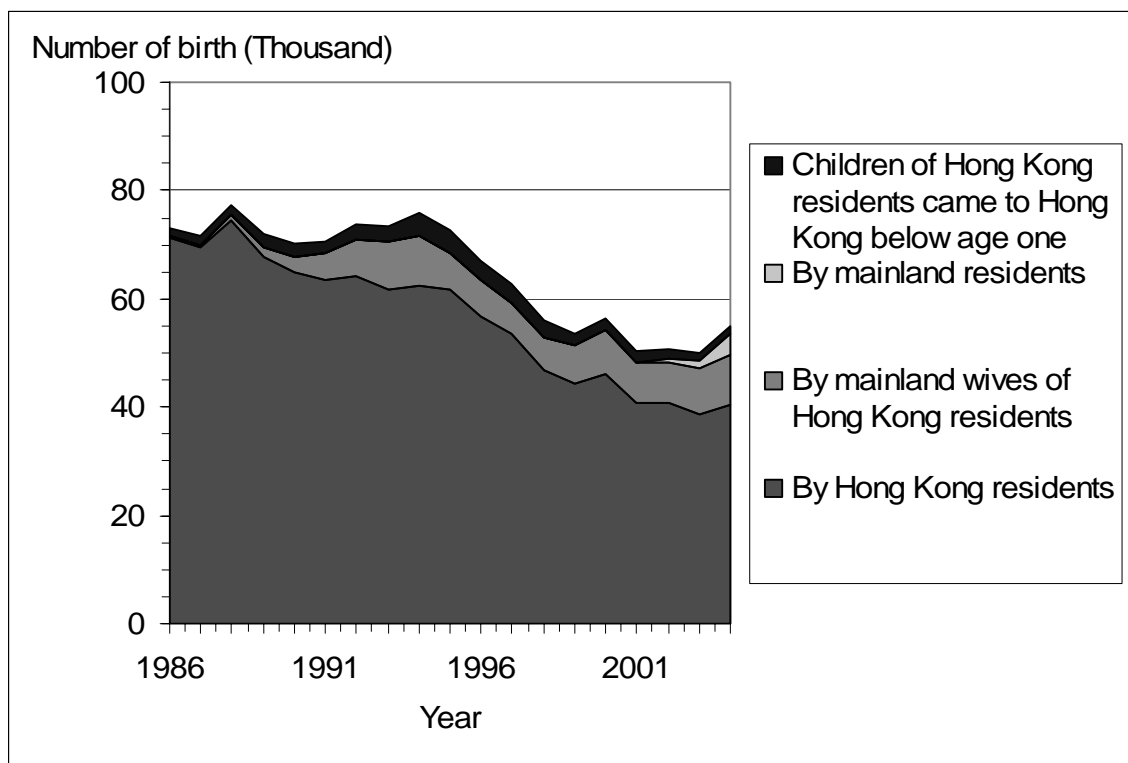


Figure 2 Number of births in Hong Kong by various populations and children of Hong Kong residents born outside Hong Kong came to Hong Kong below age one 1991-2004

Source: CSD (2005a). Number of births from CSD (2006). The number of children of Hong Kong residents came to Hong Kong below age one for 1986-1995 and the births given by mainland wives of Hong Kong residents for 1986-1990 referring to live births by mainland residents with two way permits and illegal migrants, from CSD (2002d: 35).

| Population                                                    | Stay but not give birth |                   | Stay and give birth in a year |                   |
|---------------------------------------------------------------|-------------------------|-------------------|-------------------------------|-------------------|
|                                                               | Hong Kong               | Outside Hong Kong | Hong Kong                     | Outside Hong Kong |
| Hong Kong residents                                           |                         |                   |                               |                   |
| Mainland wives of Hong Kong residents                         |                         |                   |                               |                   |
| Mainland residents whose husbands are not Hong Kong residents |                         |                   |                               |                   |

a. Incorrect coverage of population and birth for CSD new fertility statistics

| Population                                                    | Stay but not give birth |                   | Stay and give birth in a year |                   |
|---------------------------------------------------------------|-------------------------|-------------------|-------------------------------|-------------------|
|                                                               | Hong Kong               | Outside Hong Kong | Hong Kong                     | Outside Hong Kong |
| Hong Kong residents                                           |                         |                   |                               |                   |
| Mainland wives of Hong Kong residents                         |                         |                   |                               |                   |
| Mainland residents whose husbands are not Hong Kong residents |                         |                   |                               |                   |

b. Correct coverage of population and birth for fertility statistics of Hong Kong residents plus mainland wives

| Population                                                    | Stay but not give birth |                   | Stay and give birth in a year |                   |
|---------------------------------------------------------------|-------------------------|-------------------|-------------------------------|-------------------|
|                                                               | Hong Kong               | Outside Hong Kong | Hong Kong                     | Outside Hong Kong |
| Hong Kong residents                                           |                         |                   |                               |                   |
| Mainland wives of Hong Kong residents                         |                         |                   |                               |                   |
| Mainland residents whose husbands are not Hong Kong residents |                         |                   |                               |                   |

c. Correct coverage of population and birth for fertility statistics of Hong Kong residents

Figure 3 Coverage of population and births for fertility statistics (black shading)