

Hong Kong's Challenge:

Impact of Population Changes

Paul S F Yip

Joseph Lee

C K Law

April 2005

Hong Kong's challenge:
Impact of population changes

Paul S F Yip

Joseph Lee

C K Law

April 2005

Preface

“Population projections provide a common basis for the Government in planning public services and facilities. They are constantly rolled forward and updated.”

Census & Statistics Department 5/10/2000

Population projection is an important exercise for all policy-makers because it is based on the periodic projections and adjustments that public infrastructure and public services are planned. Resources have to be set aside or found in order to ensure such needs are going to be met in the future. In other words, population projections determine longer-term policy planning.

Hong Kong has a history of over-estimating population. In looking at the recent past, in 1961, the government projected that by 1981, the population would be 6.05 million. By 1966, that projection was revised down to 5.1 million by 1981, which was approximately what the population was in 1981. In 1966, however, the official projection for 2011 was 8.1 million. The population only reached 6.72 million in 2001, and 6.8 million in 2003. On 30 June last year, the official projection was finally revised down from an estimate of 8.1 million by 2011 to 7.5 million by 2010. These were very large differences. Statisticians believe this figure of 7.5 million by 2010 may still be too high.

The consequence of over-estimation may well have been that Hong Kong built more than it needed ahead of real demand for physical hardware and thus diverting resources into certain types of projects and away from other types of projects. In looking at population and policy-making in the future, we strongly urged policy-makers to pay more attention to population estimates. The government must also be more explicit about its projected assumptions on needs.

Civic Exchange's population study project includes exploration of the general demographic trends, overall policy impacts, related public health impacts, transport needs, pension needs, as well as a comparison with other cities. Our *Alternative Policy Address* published in December 2004 reflected our thinking on the overall policy impact; and this paper presents the general demographic trends. We are grateful to the authors for the efforts they put into this project and to the Census and Statistics Department for its assistance in providing data. We are also grateful to Simon Ng for managing the population project as a whole, Carine Lai for layout, and Andrea Li for editing. This project is funded by the Fan Family Charitable Trust. Without this support we could not have embarked on this important area of research. We wish to thank Mr. Henry Fan and Ms. Lily Fan for their support of our work.

Christine Loh
Chief Executive Officer

26 April 2005

Authors

Paul S F Yip is a Senior Lecturer in the Department of Statistics and Actuarial Science and the Director of the Hong Kong Jockey Club Centre for Suicide Research and Prevention at the University of Hong Kong. Joseph Lee is the former Deputy Commissioner of the Census and Statistics Department of Hong Kong Government and a research fellow of the Centre of Asian Studies, University of Hong Kong. CK Law has completed his PhD at the Centre of Asian Studies and is currently working as a research associate at the Hong Kong Jockey Club Centre for Suicide Research and Prevention of the University of Hong Kong.

Civic Exchange

Civic Exchange is a non-profit organisation that helps to improve policy and decision-making through research and analysis.

Room 701, Hoseinee House, 69 Wyndham Street, Central, Hong Kong

Tel: (+852) 2893 0213 Fax: (+852) 3105 9713

URL: www.civic-exchange.org

Disclaimer

The views expressed in this report are those of the authors and do not necessarily represent the opinions of Civic Exchange.

Introduction

Hong Kong has observed steady, rapid changing demographic structures, and the population is experiencing a remarkable rise in longevity. Over the past 20 years, the life expectancy of men at birth has increased from 72 to 78 years and of women from 79 to 85 years (Census and Statistics Department, 2002). The total fertility rate (TFR) has plummeted from the replacement level (i.e. two children per woman) to 0.8, which is the lowest in the world. No other country in the world has ever experienced such a steep decline in the TFR. Even in countries with a very low fertility rate, the TFR has usually taken a fairly long time to fall to particular low levels below replacement, and the fertility rates tend to stabilize at such levels. By contrast, the drop in Hong Kong's fertility rate seems unusual. The TFR is falling continually, and is showing no sign of recovery.

The proportion of women marrying at prime marriageable ages has fallen conspicuously because of an ongoing tendency for late marriage and less marriage. A persistent fall in the proportion of married women has catalyzed the decline of the fertility rate. The TFR will most likely fall further before gradually picking back up to 1. The ageing population, visible since the early 1980s, has also accelerated. These striking demographic changes will bring about new social challenges and new needs that Hong Kong will soon have to meet.

Demographic trends: past and present

Population growth and age structure

Population growth in Hong Kong was significantly muted during the 1980s. The population was increasing at 1.3% per year in 1981-1986 and 0.8% per year in 1986-1991. The exodus of Hong Kong residents in the late 1980s due to uncertainties surrounding the 1997 handover might have led to slower population growth. The population grew strongly again in 1991-1995 due to a substantial rise in net migration from the Mainland. Inflow of migrants peaked in 1995 and 1996. But net migration still remained strong. There has been an increase in the daily 'quota' (i.e. number of Mainland residents admitted under the One Way Permit Scheme) since 1995. As a result, natural increase (births minus deaths) contributed to no more than 40% of population growth in the 1990s. It was 87% in the 1980s.

The combined effects of longer life expectancy and below-replacement fertility have made Hong Kong an ageing society. The median age increased from 26 to 37 over 1981 – 2001. The proportion of 65 and over was 11% in 2001 versus 7% twenty years ago. In 1981, some 25% of the population was below 15 years of age; in 2001, the figure was 16%. Consequently, the proportion of the population of working age (15-64 years) rose modestly from 69% to 72%. The child dependency ratio fell by more than one-third. The elderly dependency ratio kept rising strongly and steadily. Changes in the age structure have led to a fall in the overall dependency ratio (Table 1). There is currently a larger population of working age (the supply of potential labour force to support the young and the old).

Table 1: Significant characteristics of population: 1981-2001

<i>Characteristic</i>	<i>Mid-1981</i>	<i>1986</i>	<i>1991</i>	<i>1995</i>	<i>1996</i>	<i>2001</i>
<i>Population ('000)</i>	5183.4	5524.6	5752.0	6156.1	6435.5	6724.9
<i>Average annual growth rate</i>		1.3	0.8	1.7		0.9
<i>Growth ('000)</i>		341.2	227.4	404.1		289.4
<i>Natural increase ('000)</i>		278.1	219.4	166.0		112.0
<i>As % of growth</i>		81.5	96.5	41.1		38.7
<i>Net migration ('000)</i>		63.1	8.0	238.1		117.4
<i>As % of growth</i>		18.5	3.5	58.9		61.3
<i>0 – 14 (%)</i>	24.6	23.1	20.8	19.4	18.7	16.4
<i>15 – 64 (%)</i>	68.7	69.3	70.4	70.8	71.1	72.4
<i>65+ (%)</i>	6.6	7.7	8.7	9.8	10.2	11.2
<i>Child DR</i>	358	332	295	274	263	227
<i>Elderly DR</i>	97	111	125	138	143	155
<i>Total DR</i>	455	443	420	412	406	382
<i>Median age</i>	26	29	32	34		37

Note:

(a) The average annual growth rate of a 4-year period (1991-1995) is computed for comparison with the rates of a 5-year period (1981-1991) because a different method of estimation is used to compile population estimates for 1996-2001.

(b) The child dependency ratio (DR) is expressed as children under 15 per 1,000 persons of working age (15-64). The elderly DR is expressed as older persons aged 65 years or older per 1,000 persons of working age.

Sources: Census and Statistics Department (1987-2002)

Reduction in fertility rates

The changing fertility rates pattern in Hong Kong reflects a postponement in childbearing and lower high-order births. (Census and Statistics Department, 2002). The Total Fertility Rate (TFR) fell from the replacement level in 1980 to an all-time low of 0.8 in 2001 (the rate excludes births given by two-way permit holders and illegal entrants, accounting for some 15% of the total births). According to an empirical based hypothesis, the Hong Kong TFR has actually fallen to between 0.7 and 0.8. This is considered a fertility floor approximating the lower bounds of cohort fertility (Golini, 1998).

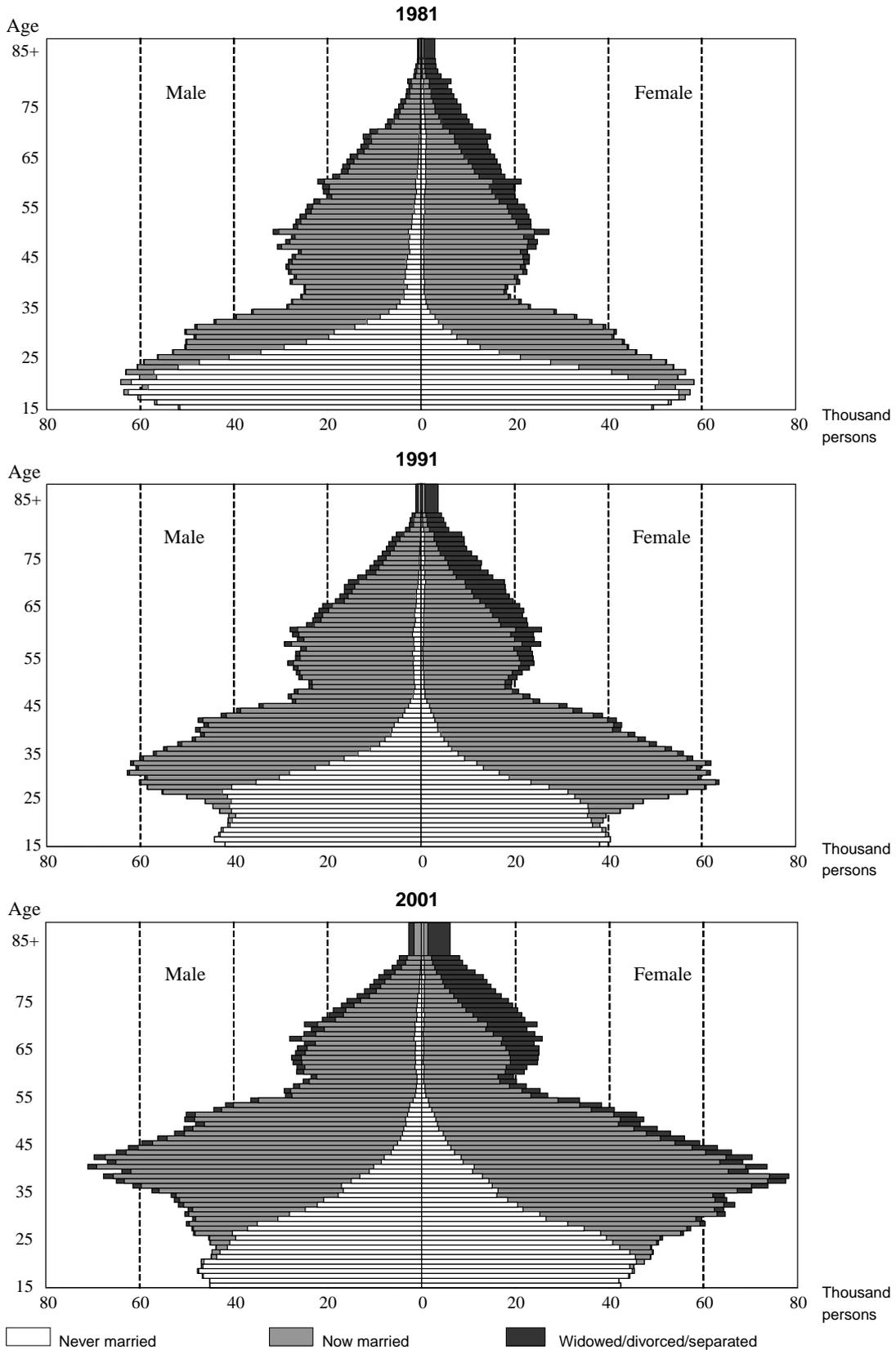
The change in nuptiality

Hong Kong's marital structure altered radically during 1981-2001. The median age for women's first marriage increased from 24 to 28, and for men from 27 to 30 (Figure 1). The difference in terms of the median age at marriage between bride and groom fell to 2.7 years from 3.1 years, indicating a greater tendency among women to marry late. The fall in the proportion of married people is seen more significantly among younger males and females. (Census and Statistics Department, 1981-2001). A total of some 200,000 Hong Kong men could have been married in Mainland China during 1990-1999 based on data of successful applicants for the certificate of absence of marriage records available from the Immigration Department of the Hong Kong Special Administrative Region Government (HKSARG). Based on the marital conditions of 1981-2001, if all single men of 25 to 54 and all single women of 20 to 49 (5 years being roughly the age difference at marriage between bride and groom) would eventually marry, the surplus of single women would rise steadily to 63,000 from 22,000. The ratio of single men to single women would fall consistently below 1.

The effect of change in marital structure

In Hong Kong, the total marital fertility rate trend (TMFR) and TFR are very different. The TMFR fell for much of the time, but after reaching a new low, the rate rebounded back to a higher level. On the contrary, the TFR fell continually, with the fall gathering momentum in recent years. More importantly, the TMFR fall is not as substantial as the TFR; 34% from 3.36 to 2.22 versus 60% from 1.98 to 0.8. The TFR's rapid decline as compared with the standardized TFR is due in part to a changing marital structure, according to Yip and Lee (2002).

Figure 1: Distribution of population aged 15 and over by age, sex and marital status -1981, 1991 and 2001



Source: Census and Statistics Department (2002)

The change in mortality

Since 1981, Hong Kong has seen a lower infant mortality rate, falling to 2.6 per 1,000 live births from 9.7. The mortality of newborn babies has fallen substantially for boys rather than girls. Because of the different rate of decline, mortality of newborn babies remained lower for girls than for boys, 2.3 versus 2.8, in 2001 (Census and Statistics Department, 2002). Apart from the infant mortality rate, the expectation of life at birth is a useful indicator for measuring health performance and well-being. Based on the death rates of 1981, the average length of life for men was 72.3 years; in 2001, the death rate was 78.4 years. Similarly, the expectation of life for women was 78.5 and 84.6 years, respectively. For both men and women, there was an increase of some 6 more years of life after birth, indicating an improved health status. Hong Kong is rated as one of the highest life expectancy economies in the world (Law and Yip, 2003).

The impact of migration

The migration scene has altered tremendously since the 1980s. The daily 'quota' was increased from 75 to 105 in 1993 and subsequently to 150 in 1995. From 1983 to 2001, inflows under this category totalled more than 720,000 (The Task Force on Population Policy, 2003). The migration level in this order is equivalent to some 11% of the population at 6.7 million in 2001. Concurrently, large outflows occurred in the late 1980s. A total of more than half a million people left. The further opening up of Mainland China and Hong Kong's strong economy in the years leading to 1997 attracted returning emigrants. Inflows of migrants from the Mainland and return emigrants sufficiently offset the effect of sustained below-replacement fertility and maintained an appreciable population growth.

Chinese immigrants are predominantly younger as observed from past data. They tend to have more children (Family Planning Association of Hong Kong, 1998). Over one-third of female immigrants, and just one-quarter of Hong Kong women, have three or more children. The desired family size is 2.1 for immigrants versus 1.8 for locals. Migration helps to, albeit to a limited degree, 'rejuvenate' the population and plays a positive role in relieving the ageing population (Yip and Lee, 2000).

Possible future trends

The proportion of those married continues falling

Increasingly, men and women defer marriage, and not an insignificant number of Hong Kong men prefer to marry in Mainland China. Both these tendencies have a dampening effect on the marriage rate. The general downward trend in the marriage rate is most likely to continue for a number of years. The proportion of those married is expected to fall further still (Yip and Lee, 2002).

The total fertility rate remaining below 1

The TFR has been free falling below the replacement level since 1980. Changing marital structure is the driving force behind the decline of the TFR. This downward trend is expected to continue, implying the very low TFR (0.8 in 2001) is likely to remain below 1 for some time (Yip and Lee, 2002). The fertility rate will neither go back to 1 in the short or medium term nor rise above 1 in the longer term unless there is a significant fertility rebound, or a substantial increase in the number of births out of wedlock, or a consistent rise in the proportion of those married. Judging by past reproductive behaviour and marriage habits, these prerequisite conditions are unlikely to occur. Our projection is different from an earlier government forecast which assumed the TFR will rebound to 1.04 in 2006 (Census and Statistics Department, 2002). Subsequently, in government projection, the estimated TFR in 2033 has been reduced significantly from 1.117 to 0.993 per woman, a more realistic assessment in view of the latest fertility development in Hong Kong (Census and Statistics Department, 2004).

Slower population growth and ageing gathering momentum

The population will increase, albeit at a declining rate, from 6.8m to 8.4m in 2003-2033. The number of deaths will rise steadily owing to an ageing population and will eventually "overtake" the number of births, resulting in a negative natural increase. Total births will fall from 49,000 to 43,000 per annum, but total deaths will double from 35,000 to 71,000 per annum. Net migration is expected to peak at 63,000 in 2011, falling marginally to 60,000 thereafter (Census and Statistics Department 2004). The total births and part of net migration would contribute to a moderate rise of 6% in the working age population. But the population of 65 and over will increase almost threefold, from less than one to more than two million. More importantly, the old-old population (70-79 years) will increase from 379,000 to more than one million and the oldest-old population (80 years or older) from 167,000 to over half a million. It is an inevitable outcome that large cohorts of births in the 1950s and 1960s will survive for longer over the next 30-year period.

The proportion of under 15 will plummet to a new low of 11%. The proportion of 65 and over will more than double from 12% to 27%. Consequently, the child dependency ratio will fall from 216 to 171, but the elderly dependency ratio will rise from 161 to 428. Despite the dependency of the elderly increasing significantly, the fall of the overall dependency ratio will continue until around 2013. This downward trend will be reversed and the ratio will rise strongly from then onwards (Table 2).

Concerns about an ageing society often arises not only from the growing numbers of the elderly, but also from a rapidly changing ratio of the working-age population (15-59 years) to the retirement-age population (60 years or older). This ratio will fall sharply from 4.6 to 1.6. Taking the dependency of the young and retirees, this ratio will fall from more than two potential workers to just over one (Table 2).

Table 2: Significant characteristics of population, 2003-2033

<i>Characteristic</i>	<i>Mid-2003</i>	<i>2008</i>	<i>2013</i>	<i>2018</i>	<i>2023</i>	<i>2028</i>	<i>2033</i>
<i>Population ('000)</i>	6803.1	7058.9	7386.9	7691.8	7970.2	8202.2	8384.1
<i>Average annual growth rate (%)</i>	0.8	0.7	0.9	0.8	0.7	0.6	0.4
<i>0 – 14 No. ('000)</i>	1069.2	956.0	899.6	909.0	922.6	916.4	895.3
<i>%</i>	15.7	13.6	12.2	11.8	11.6	11.2	10.7
<i>15 – 64 No. ('000)</i>	4938.4	5245.8	5509.3	5561.9	5499.1	5349.4	5245.7
<i>%</i>	72.6	74.3	74.6	72.3	69.0	65.2	62.6
<i>65+ No. ('000)</i>	795.5	857.1	978.0	1220.9	1548.5	1936.4	2243.1
<i>%</i>	11.7	12.1	13.2	15.9	19.4	23.6	26.7
<i>15 – 59 No. ('000)</i>	4706.4	4941.2	5058.4	4997.7	4839.6	4729.0	4642.7
<i>60+ No. ('000)</i>	1027.5	1161.7	1428.9	1785.1	2208.0	2556.8	2846.1
<i>Median age</i>	38	40	42	44	46	47	49
<i>Ageing ratio* (100)</i>	74	90	109	134	168	211	251
<i>Child DR (a)</i>	216	182	163	163	168	171	171
<i>Elderly DR (a)</i>	161	163	178	219	282	362	428
<i>Total DR</i>	377	345	341	382	450	533	599
<i>Support ratio[#]</i>	4.6	4.3	3.5	2.8	2.2	1.8	1.6

* The ratio of over-65s to under-15s.

The ratio of the working-age population (15-59) to the retirement-age population (60+).

(a) The child dependency ratio (DR) is expressed as children under 15 per 1,000 persons of working age (15-64). The elderly DR is expressed as older persons aged 65 years or older per 1,000 persons of working age.

Source: Census and Statistics Department (2004)

Discussion

Fertility's role in declining population growth

The demographic scene in Hong Kong altered dramatically during 1981-2001. Fertility fell sharply and the marital structure underwent major changes with many women of marriageable age remaining unmarried. With the prospect of these demographic trends continuing, the number of births is likely to average about 46,000 per annum. Net migration is expected to continue its past trends, averaging 56,000 per annum. Migration will take over the role of fertility and become a major population-growth determinant (Yip and Lee, 2002; Census and Statistics Department, 2004).

The shrinking labour force

Fewer married women of productive childbearing age automatically lead to a fall in births. If the tendency for late marriage and less marriage persists, the demographic consequence would eventually be insufficient replenishment of the labour force. Furthermore, long-lasting below-replacement fertility will inevitably result in continued ageing of the labour force. A slow-growing and ageing labour force has far-reaching implications for the economic vitality of Hong Kong. In the medium and longer term, the shortage of labour supply due to a reduction in the proportion of the population of working age can be alleviated through lifting mandatory retirement ages, increasing labour productivity and changing the policy on imported workers (Bluestone, Montgomery and John, 1990). A growing tendency among women, particularly married women to participate in the work force also helps boost labour supply. Hong Kong is undergoing a major economic transformation, generating demand for working population of different capabilities. The HKSARG should seriously consider a strategy for developing potentialities of the female work force to fit their contribution into the process and to cope with changing occupational needs. To induce higher labour participation among married women, improving the working conditions of maternal workers and providing working mothers with nursing and child care facilities may have to be institutionalized.

Because of the socio-economic development of Hong Kong in the 1970s and 1980s, the soon-to-be-old (45-59 years) and the young-old (60-69 years) cohorts are more educated and have better skills. With substantial improvement in environmental conditions and health status in the past years, the soon-to-be-old and young-old population are, at the present time, fitter and healthier. Their ability to stay on in work for an additional number of years after retirement is beyond question. Lengthening the working life of retirees is a practical and feasible option to alleviate labour supply shortage resulting from a growing ageing population. On the other hand, a better working environment is also essential for keeping and enhancing human capital in the community.

Reducing school enrolments

The population of youngsters is lower than ever as a result of prolonged decline in the fertility rate of married women. This may have led to a continued fall in the number of students in government and aided primary schools. A slower influx of children from Mainland China under the One Way Permit Scheme has also aggravated the situation. The outlook for improved school enrolments is not promising. The official population projection predicts that there will be no more than 46,000 births per year in 2003-2033. The persistence of the downward trend in school enrolments may have caused the

under-utilization of the capacity that is already provided or to be provided of primary and secondary schools, resulting in excess resources. The education authorities should grasp this golden opportunity to overhaul the Hong Kong educational system with a view to enhancing students' learning capabilities. Interactive teaching is now a widely adopted approach in many developed economies, revolutionizing traditional teaching. It has been proved that interactive teaching in early stages of schooling can stimulate creativity and develop school children's ability to think independently. For the successful implementation of interactive teaching in schools, however, a significant cut in class size is an essential prerequisite. The need for small class teaching (SCT) cannot be dismissed. It is very unfortunate that the HKSARG has failed to realize the importance of education by severely cutting back on support. It is even more disappointing when a surplus of HK\$3.8 billion was recorded in the education sector in fiscal 2004-2005, yet education development in Hong Kong has been severely handicapped by a lack of resources. Front-line teachers are struggling and small-class teaching has never been seriously considered at all.

Lifetime celibacy among women rising

The preference among Hong Kong men for cross-border marriage is giving cause for concern. It is possible that more and more women of marriageable age will remain unmarried. The consequence is a rise in lifetime celibacy among Hong Kong women. Using a theoretic construct, the proportion that never married at age 50 would have been 23% if the 1999 marriage rates had remained constant (Yip and Lee, 2002). The implications of expanding cohorts of never married women of older ages have yet to be explored. We can also expect the role of family support for older adults to diminish in the future. The burden or the responsibility to provide care and support to the older adults without children will be shouldered by the HKSARG.

Household formation decelerating

The population growth rate is predicted to fall steadily from 0.8% to 0.4% per annum between 2003 and 2033. The pace of household formation will slow down at the same time if no significant change in the pattern of living arrangement is expected. Household formation provides an essential basis for overall assessment of housing needs. Slower household growth implies housing needs are not as substantial as before. With the prospect of decreasing housing needs, the HKSARG's housing policies should focus more on improving housing quality rather than exploring new sites for infrastructure development for the provision of housing. More importantly, since older persons often live by themselves as a result of the break up of extended nuclear families, the number of households with only elderly members will be on the increase. Housing needs of elderly households are different. Chiu et al. (2004) observed that an insignificant proportion of the elderly in Hong Kong have an intention to move cum an aspiration to own their accommodation quarters. If this propensity for housing demand does not change substantially, the likelihood of a significant rise in the proportion of elderly households in future household formation will impact unfavourably on housing demand. This peculiar characteristic has an important bearing on the overall housing production in Hong Kong. With a present 6.2% vacancy rate and a slower population growth, housing needs will be smaller than expected.

Demand for social care services growing

An unstoppable increase in the proportion of elderly is expected with the acceleration of the ageing population. Demand for social care services will also be on the increase. The HKSARG's commitment to social security will be under great strain. Total government expenditure on financial assistance for the elderly is estimated at HK\$11.8 billion in 2002-2003, accounting for 5.4% of recurrent public expenditure and representing some 50% increase over the HK\$7.8 billion paid out in 1997-1998. This expenditure will rise to over HK\$31 billion by 2031 (Task Force on Population Policy, 2003). With the huge financial burden of providing assistance to the elderly looming on the horizon, the HKSARG needs to make early plans and take prompt measures to tackle these social challenges. At present, more than 50% of the social welfare budget is spent on older adults aged 65 or above. This share will continue to grow for an ageing society.

Health care expenditure surging

The proportion of the population aged 65 and over will more than double from 12% to 27%, resulting from an unprecedented pace of ageing in the 2010s. A growing proportion of older ages impacts severely on the health care system in Hong Kong. Hospitalization usage will increase substantially. It is predicted that the total hospital patient days utilized by patients in Hospital Authority (HA) hospitals will increase at an annual rate twice as fast as the population growth rate (Yip and Law, 2002). This suggests that the total number of hospital patient days will rise from 8.5 to 15.3 million in the next 30 years. The geriatric services accounted for 47% of patient days utilization at HA hospitals in 2000; this will rise to 61% in 2029. It is expected that hospital patient days utilized by older patients will increase by more than 134% from 4.02 to 9.41 million during the same period (Yip and Law, 2002). As people live longer, there is a growing demand for health care related to conditions such as cardiovascular and cerebrovascular diseases, malignant neoplasm, chronic obstructive pulmonary disease, osteoporosis and dementia. Medical treatment for these diseases is costly to provide. Health care spending has increased substantially as a result of continued improvement in the delivery of medical services and the effects of population growth and ageing. Health care expenditure increased by 150% from HK\$13.6 billion in 1992-93 to HK\$34.0 billion in 2001-2002 (Census and Statistics Department, 1987-2002). Without government budgetary constraints, a continual surge in health care expenditure is more than likely expected with rapid ageing of the population in the pipeline. It is essential for the HKSARG to implement various financially viable options to maintain a sustainable health care service to the community (Law and Yip, 2002a, b).

Conclusion

Ageing of population is the consequence of long-lasting below-replacement fertility and continually improved longevity. If the TFR falls extraordinarily sharply below the replacement level over a short span of time, population ageing will inevitably be faster than ever. Hong Kong is getting into this difficult demographic situation. It makes management of the ageing process extremely complicated, since greater adaptability and flexibility of social, economic and health care infrastructure are required. Facing a pace of population ageing that is without precedent in human history, the HKSARG must tackle important policy challenges and look far ahead to finding viable and practical means of financing long-term care for an expanding ageing population. Workable plans and a sustainable financial support system must be in place within a short time frame. There is no doubt that other low fertility countries have similar problems. But the ageing process is slow in these countries. They can take time to prepare for the population transformation, identify challenges arising from the issues and find feasible and practical solutions. Population ageing of Hong Kong is special and more formidable because of its intensity and timescale. It imposes a great strain on the capacities of society in the short term.

Due to the prospect of different changes in the age structure, the overall dependency ratio will fall lower than ever until around 2013. This provides a "demographic window", a unique opportunity for diversion of available resources from other services provisions, to implementing health and social policies to achieve sustainable socio-economic development in due course before inescapable fast population ageing. The window is closing fast too and the time for action has never been more pressing. Population ageing will become very serious from 2011 onwards. That Hong Kong is going through this striking demographic transformation must have widespread ramifications and far-reaching economic and health implications. Policy-makers need to make a concerted effort to meet these new challenges.

References

Bluestone, I. R., Montgomery, J. V., & John, D. O. (Eds.) (1990). *The ageing of the American work force: Problems, programs, policies*. Detroit, MI: Wayne State University Press.

Census and Statistics Department. (1981-2001). *Reports of Population Census 1981, 1986, 1991, 1996 and 2001*. People's Republic of China: Hong Kong Special Administrative Region.

Census and Statistics Department. (1987-2002). *Hong Kong Annual Digest of Statistics*. People's Republic of China: Hong Kong Special Administrative Region.

Census and Statistics Department (1997). *Demographic trends in Hong Kong 1981-1996*. People's Republic of China: Hong Kong Special Administrative Region.

Census and Statistics Department (2002). *Demographic trends in Hong Kong 1981-2001*. People's Republic of China: Hong Kong Special Administrative Region.

Census and Statistics Department. (2004). *Hong Kong Population Projections 2004-2033*. People's Republic of China: Hong Kong Special Administrative Region.

Chiu RLH, Ho MHC, Siu G, Cheung D and Chan C 2004. *Projection of housing needs and demands of the elderly. Chapter 4 of the Comprehensive Study on the Household Needs of the elderly in Hong Kong*, Hong Kong Housing Society.

Family Planning Association of Hong Kong. (1998). *Report on the survey of knowledge, attitude & practice of new arrival women from Mainland China*. People's Republic of China: Hong Kong Special Administrative Region.

Golini, A. (1998). How low can fertility be? An empirical exploration. *Population and Development Review*, 24, 59-73.

Law, C. K. & Yip, P.S.F. (2002a). Viability of health protection in Hong Kong. *Hong Kong Medical Journal* 8, 262-268.

Law, C.K. & Yip, P.S.F. (2002b). Acute case service utilization and the possible impacts of a user fee policy in Hong Kong. *Hong Kong Medical Journal*, 8, 348-353.

Law, C. K. & Yip, P. S. F. (2003). Healthy life expectancy in Hong Kong Special Administrative Region of China. *Bulletin of the World Health Organization*, 81, 43-7.

The Task Force on Population Policy. (2003). *Report of the Task Force on Population Policy*. People's Republic of China: Hong Kong Special Administrative Region.

World Health Organization. (2002). *The world health report 2001*. Geneva: World Health Organization.

Yip, P. S. F., & Law, C. K. (2002). Assessment of the future resources and needs for hospitalization in Hong Kong SAR. *International Journal of Health Planning and Management*, 17, 113-122.

Yip, P. S. F., & Lee, J. (2000). The effects of migration on the population distribution in Hong Kong. *Asian Journal of Public Administration*, 22, 90-104.

Yip, P. S. F., & Lee, J. (2002). The impact of the changing marital structure on fertility of Hong Kong SAR (Special Administrative Region). *Social Science and Medicine*, 55, 2159-2169.