This subject paper is intended to be a research paper delving into different views and analyses from various sources. The views and analyses as contained in this paper are intended to stimulate public discussion and input to the planning process of the "HK2030 Study" and do not necessarily represent the views of the HKSARG.

WORKING PAPER No. 31
POPULATION AND EMPLOYMENT ASSUMPTIONS FOR THE REFERENCE SCENARIO

Introduction

1. This paper discusses the assumptions on territorial population by age and sex and employment by industry up to the year 2030 adopted for the HK2030 Study. Previous discussion on the population and employment assumptions was given in the Working Paper No. 5 “Population and Employment Assumptions for the Base Scenario”, which is now obsolete.

Population

Background

2. The HK2030 Study adopts a vision-based approach in formulating the Reference Scenario. Under this approach, parameters derived from trend-based assessments are adjusted taking into account vision-based assumptions and, where appropriate, new policy initiatives which would be needed to achieve the vision targets. Following this approach, the Study makes some working assumptions in the assessment of Hong Kong’s future population growth, which are different from those adopted in Census and Statistics Department’s (C&SD’s) 2001-based population projections. These include:

   (a) **Expatriates**: Hong Kong’s development as an international financial and business centre will continue to attract expatriates. Therefore, a faster increase in the inflow of expatriates is assumed. A continued increase of annual net inflow of Hong Kong Non-permanent Residents (other than legal entrants from the mainland of China, foreign domestic helpers and imported workers) from 2005 to 2009 is therefore expected.
(b) **Admission of Talents and Investors:** In view of the vision of HK2030 Study that Hong Kong will become an Asia’s world city which attracts professional or skilled workers from all over the world, it is assumed that about 11,000 talents and foreign investors (including their eligible family members) would be admitted to Hong Kong every year, starting from 2004. This assumption has taken into account the recommendations of the latest Population Policy and the estimate is based on our best judgment.

(c) **Outflow of Usual Residents:** It is expected that more Hong Kong people will choose to reside outside Hong Kong, especially in the Mainland, offsetting some of the growth brought about by Mainland immigrants. Among them, a significant proportion will still commute frequently back to Hong Kong. Additional annual net outflow of Usual Residents is therefore expected starting from 2005 and some of them will change status to Mobile Residents.

As a result, there is a need to prepare a set of population assumptions for the HK2030 Study.

**Key Features**

3. The Hong Kong Resident Population comprises "Usual Residents (URs)" and "Mobile Residents (MRs)". URs refer to two categories of people:

   i. Hong Kong Permanent Residents who have stayed in Hong Kong for at least three months during the six months before or for at least three months during the six months after the reference time-point, regardless of whether they are in Hong Kong or not at the reference time-point; and

   ii. Hong Kong Non-permanent Residents who are in Hong Kong at the reference time-point.

4. As for MRs, they are Hong Kong Permanent Residents who have stayed in Hong Kong for at least one month but less than three months during the six months before or for at least one month but less than three months during the six months after the reference time-point, regardless of whether they are in Hong Kong or not at the reference time-point.

5. The projected population as well as the summary statistics for the base year and the design years are given in the following table.
6. The population is projected to increase at an average annual growth rate of 1.1%, from 6.72 million in mid-2001 to 9.16 million in mid-2030. The number of URs is projected to increase from 6.54 million in mid-2001 to 8.62 million in mid-2030. In addition, the number of MRs is projected to increase from 182,600 in mid-2001 to 535,000 in mid-2030.

7. The projected population shows a continual aging trend. In 2001, 16.4% of the population were aged under 15. The proportion is projected to drop to 12.3% in 2030. On the other hand, the proportion of those aged 65 or over would rise from 11.2% in 2001 to 22.4% in 2030.

**Compilation Methodology**

8. Population projections are prepared using the same methodology adopted by C&SD, with some changes in the projection assumptions to reflect the visions adopted. The standard method of population projection, the 'component method', is used. The size and age-sex structure of the projected population in each of the projection years are obtained by incrementing each individual's age year after year, starting from the base year, bringing in the assumptions on fertility, mortality and migration, and allowing the various demographic factors to interact with one another. All fertility, mortality and migration assumptions are applicable to the URs and a separate methodology is used to project the number of MRs.
Projection Assumptions

Fertility assumptions

9. The fertility assumptions are the same as that adopted by C&SD. Hong Kong’s fertility has experienced a marked and continuous decline in the past two decades. The current fertility level is extremely low by international standard. Experience of many low fertility countries indicates a reversion to a slightly higher fertility rate after continuous decline for a period. It is projected that there would be a gradual fertility rebound in response to the catching-up effect in the future.

Mortality Assumptions

10. The mortality assumptions are the same as that adopted by C&SD. Hong Kong has experienced a continuous decline in mortality during 1971-2000. Gradual continuation of past trends is assumed for both sexes with a slower pace of mortality decline.

Migration Assumptions

11. The assumptions on net movement of URs comprise five components, viz.

   i. Net flow of Hong Kong Permanent Residents (HKPRs) into the UR category;

   ii. Legal entrants from the mainland of China;

   iii. Net flow of Hong Kong Non-permanent Residents (HKNPRs) holding non-Hong Kong travel documents (other than legal entrants from the mainland of China, foreign domestic helpers and imported workers);

   iv. Net flow of foreign domestic helpers (FDHs) and imported workers (IWs);

   v. Admission of Talents and Investors.

The assumptions adopted are described below.

   i. Net flow of HKPRs into the UR category

12. The average annual net flow of HKPRs into the UR category from mid-1997 to mid-2001
is −28 000 (indicating a net outflow). It is anticipated in C&SD projection that the annual net outflow would reduce from 28 000 to 20 000 in ten years' time and remain at 20 000 per annum thereafter. In the Reference Scenario, assuming the trend of increasing mobility of Hong Kong people within the Pearl River Delta region, it is expected that there would be more net outflow of URs and a portion of which would change their status to MRs. As such, on top of that assumed by C&SD, additional annual net outflow of URs is assumed starting from 2005 and the addition increases progressively and reaches 35 000 by 2020 in 15 years' time and remains at this level thereafter.

ii. Legal entrants from the mainland of China

13. The assumption of this component is the same as that adopted by C&SD. It is based on the mutual agreement between the mainland of China and Hong Kong. Since 1 July 1995, the quota for new arrivals on One-way Exit Permits has been 150 per day, or 54 750 per year.

iii. Net flow of HKNPRs holding non-Hong Kong travel documents (other than legal entrants from the mainland of China, foreign domestic helpers and imported workers)

14. It is assumed by C&SD that the net inflow of this component would be sustained. The net inflow is projected to increase steadily to 16 000 by 2005 and remain at this level thereafter. In the Reference Scenario, along with the continued development of Hong Kong as an international and financial centre, the annual net inflow would continue to increase steadily after 2005 to 28 000 by 2009 and remain at this level thereafter.

iv. Net flow of FDHs and IWs

15. The assumption of this component is the same as that adopted by C&SD. The number of FDHs increased during 1982-2001. Assuming no change in the present policy, a further increase can be expected in the coming years but at a slower pace. Regarding IWs, owing to the completion of the Airport Core Projects in 1996/97, the number decreased markedly in recent years. The stock of IWs is projected to remain unchanged through the projection period.
iv. Admission of talents and investors

16. This is an added component for the Reference Scenario. In view of the vision of HK2030 Study that Hong Kong will become an Asia’s world city which attracts professional or skilled workers from all over the world, it is assumed that about 11,000 talents and foreign investors (including their eligible family members) would be admitted to Hong Kong every year, starting from 2004. This assumption has taken into account the recommendations of the latest Population Policy and the estimate is based on our best judgment.

Projection of Mobile Residents

17. The methodology for the projection of MRs is the same as that adopted by C&SD, except that some additional MRs are coming from the additional net outflow of URs as mentioned above. The MRs are divided into five categories as described in the following table. The projection of the five categories of MRs is associated with the change of the expected ratio of the relevant category to the respective age group of the URs. In view of the closer link with the mainland of China in the future, the ratios of MRs for categories (1) to (3) are expected to increase gradually, doubling themselves in 20 years and remaining at that level thereafter. For ratios of other categories, they are expected to remain the same throughout the entire projection period.
<table>
<thead>
<tr>
<th>Sub-group</th>
<th>Age group</th>
<th>As at mid-2001</th>
<th>As at mid-2021</th>
<th>After mid-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Persons staying 5 to 6 days each week in the Mainland and staying regularly in Hong Kong during the weekends</td>
<td>25-59</td>
<td>1.6%</td>
<td>3.1%</td>
<td>3.1%</td>
</tr>
<tr>
<td>(2) Persons staying for a major proportion of time in Mainland/Macau and returning to Hong Kong from time to time</td>
<td>All ages</td>
<td>1.1%</td>
<td>2.3%</td>
<td>2.3%</td>
</tr>
<tr>
<td>(3) Elderly persons (aged 60 or over) staying for a major proportion of time in Mainland/Macau</td>
<td>60+</td>
<td>0.9%</td>
<td>1.7%</td>
<td>1.7%</td>
</tr>
<tr>
<td>(4) Persons in school-attending age returning from overseas to stay in Hong Kong for several periods of time in a year</td>
<td>15–24</td>
<td>1.9%</td>
<td>1.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>(5) Persons staying in overseas countries/territories but also staying frequently in Hong Kong for business, work or family reasons</td>
<td>All ages</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

**Employment**

**Key Features**

18. In the present context, employment refers to the number of jobs held within the territory of Hong Kong, classified by the major economic activities of the employing establishments. Jobs held by Hong Kong residents outside Hong Kong are excluded. The following table provides the projected employment by 12 various industry groups.
<table>
<thead>
<tr>
<th>Broad Employment Group</th>
<th>2001</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>0.22M</td>
<td>0.13M</td>
<td>0.10M</td>
<td>0.09M</td>
</tr>
<tr>
<td>Transport, storage and communication</td>
<td>0.36M</td>
<td>0.42M</td>
<td>0.49M</td>
<td>0.56M</td>
</tr>
<tr>
<td>Import/export</td>
<td>0.51M</td>
<td>0.50M</td>
<td>0.52M</td>
<td>0.53M</td>
</tr>
<tr>
<td>Financing, insurance, real estate and business services</td>
<td>0.48M</td>
<td>0.63M</td>
<td>0.72M</td>
<td>0.74M</td>
</tr>
<tr>
<td>Construction</td>
<td>0.30M</td>
<td>0.32M</td>
<td>0.32M</td>
<td>0.32M</td>
</tr>
<tr>
<td>Wholesale and retail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotels, restaurants and boarding houses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community, social and personal services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.26M</td>
<td>3.58M</td>
<td>3.87M</td>
<td>4.03M</td>
</tr>
</tbody>
</table>

Note: Figures may not add up to the total due to rounding.

19. The total employment is projected to increase from 3.26 million in 2001 to 4.03 million in 2030, representing an average annual growth rate of 0.7%. The "Transport, storage and communication" sector is projected to have the fastest growth in employment, averaging at 1.6% per annum over the period 2001-2030. "Financing, insurance, real estate and business services" will be another service sector with good growth potential. Their employment is projected to increase by an average of 1.5% per annum during 2001-2030.

20. In stark contrast, employment in the local "Manufacturing" sector is projected to continue to shrink, by an average of 3.1% per annum over the period 2001-2030.

Compilation Methodology

21. The compilation methodology follows that adopted by C&SD in preparing its 5-year 2001-based employment projection\(^2\). Except for FDH, the projected employment for each industry group was derived from a statistical model, supplemented by expert views on the future employment trends in the industries concerned. Employment of FDH was projected separately as a population component.

22. The model projections were expressed in terms of average annual growth rates for the period 2001-2007. For some of the industry groups, the average annual growth rates were adjusted by additive factors on consideration of relevant expert views.

23. At the time of compiling the employment projections for the Reference Scenario, only the set of provisional 2001-based employment projections was available from C&SD. As such, the employment projections for the Reference Scenario are obtained based on the
provisional model projections. However, it must be stressed that the final version of C&SD employment projections released later on is only a fine-tuning of the provisional version and the difference between the two versions is not significant.

24. Employment projections for 2010, 2020 and 2030 for the Reference Scenario are obtained by extending C&SD provisional model projections. For some industry groups, adjustments are made since the models are not appropriate for producing long-term projections.

Cautionary Remarks

25. The territorial population projections and employment projections discussed in this paper are produced especially for the vision-based Reference Scenario adopted under the HK2030 Study, which has incorporated our future vision of Hong Kong as the Asia’s world city. They should not be taken as the official projections of the government for general purposes. Specifically, the 2001-based population projections produced by the Census and Statistics Department remains to be HKSAR government’s official projections of territorial total population.

Footnotes

1 Details on C&SD population projections are given in the report "Hong Kong Population Projections 2002-2031".

2 Details on C&SD employment projections are given in the report "2001-based Manpower Requirement Projection By Economic Sector".

PLANNING DEPARTMENT
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