

Expenditure Projections Assumptions, Limitations and Considerations

General

1. Base year: 2014-15 unless otherwise specified.
2. Population projections: as set out in the Hong Kong Population Projections 2012-2041 published by the Census and Statistics Department in July 2012. Users can download this publication free of charge at the website of the Census and Statistics Department (www.censtatd.gov.hk/hkstat/srh/index.jsp).
3. The projection figures in this report are illustrative broad-brush projections rather than the Government's precise forecast.

Recurrent education expenditure

4. Student enrolment in the kindergartens under the Pre-Primary Education Voucher Scheme (PEVS) and the public sector/subsidized primary, secondary or special schools is projected on the basis of the population of the relevant age groups as forecast in the Hong Kong Population Projections 2012-2041, with appropriate adjustments to estimate and exclude students not receiving government subsidy.
5. Despite the assumption used, the actual enrolment ratio may not necessarily follow past trends. The number of students in a particular school sector may not change in line with the overall change in population, as there may be exogenous changes in parental preference for a certain type of schools.

6. Expenditure on pre-primary, primary, secondary and special schools is projected to change in line with projected change in student enrolment over the forecast period, taking into account the additional funding requirements arising from a number of committed initiatives which have yet been fully implemented or are time-limited in nature.
7. The funding requirements would not necessarily move in tandem with the change in the number of students because the financial provision for public sector primary, secondary and special schools is calculated on a wide range of bases. Some provisions are per capita-based, others are school-based, class-based¹ or based on the number of targeted students. The required funding would also change as a result of service enhancement proposals for improving the quality of education from time to time.
8. To ensure stability of the school sector, the Government has introduced temporary relief measures to cope with the transient ups and downs of student population. This would result in a less than proportionate reduction in government expenditure despite the fall in student enrolment.
9. The projections reflect the Government's decision to maintain the existing subvention for English Schools Foundation (ESF) from the 2013/14 to 2015/16 academic years and to phase out the subvention starting from 2016/17 over a period of 13 years except that the subvention for students with special educational needs in ESF schools would be frozen at the current level² throughout the forecast period and the annual rent and rates would be reimbursed to ESF in accordance with the existing policy on reimbursement for non-profit-making schools.

¹ The number of classes depends on the number of students per class, which tend to vary with the dynamics of a series of factors during and after the school place allocation process.

² The Education Bureau would review the support for non-Chinese speaking students with special educational needs. Pending the completion of the review, the subvention for students with special educational needs in ESF schools would be frozen at the current level.

10. The number of student places and grant requirements of UGC-funded institutions are assumed to remain at the committed level of the current 2012/13 to 2014/15 triennium, except that additional senior year intake places will gradually increase from 200 in the 2015/16 academic year to 1 000 by the 2018/19 academic year.
11. As for Vocational Training Council, the subvention and student places are assumed to remain unchanged. Other recurrent expenses are assumed to remain largely constant³.
12. The expenditure projections on student financial assistance are based on a number of parameters including application rate, success rate, take-up rate, profile of applicants in terms of the level of assistance obtainable, average family size of the applicants and the average or maximum subsidy amount for individual schemes. They are projected to change in line with the projected change in student population.
13. Actual expenditure on student financial assistance may be affected by factors beyond the Government's control, including economic and labour market conditions, external economic environment, and development of the self-financing post-secondary education sector which is primarily market-driven.
14. The review on how to practicably implement free kindergarten education is in progress and is intended to be completed in two years' time. The financial implications of the review on the Government's recurrent expenditure on education have not been taken into account in the projection. Additional provision to cater for the one-off improvement measure of increasing the voucher value of the PEVS by \$2,500 each year in the 2014/15 and 2015/16 school years has been included in the projection.

³ There is some fluctuation in other recurrent expenditure over the years from 2014-15 to 2016-17 due to the phasing-out of a few time-limited initiatives.

Recurrent social welfare expenditure

15. Where appropriate, the projections have taken into account demographic changes for different age groups (for example, 0-19, 60-69, 70-79, and 80 and above, etc.). For certain service categories, the exact population of certain age groups cannot be deduced due to the grouping method of Census and Statistics Department's population projection. As such, only the population figures of the nearest age group have been adopted in the projection.
16. For non-population-tied services in various service categories, the service provision (e.g. number of centres) has been assumed to be maintained at 2014-15 level throughout the forecast period under the No Service Enhancement Scenario.
17. A broad-brush approach has been adopted in projecting expenditure requirements for the Comprehensive Social Security Assistance (CSSA) and Social Security Assistance (SSA) Schemes. The projection is based on the average number of cases receiving CSSA/SSA payments in 2013-14. Making reference to past patterns, the number of CSSA cases for individual categories is assumed to vary in proportion to the size of the total population or to remain constant. For SSA, the take-up rates are assumed to remain unchanged throughout the projection period.
18. More detailed long-term projections for CSSA and SSA Schemes require substantial research and data analyses, as well as sophisticated considerations of a multitude of factors. Examples of factors affecting the number of persons falling into the CSSA net include: effectiveness of the other two pillars of retirement protection in Hong Kong (i.e. the Mandatory Provident Fund system and voluntary savings), personal income and assets, family income and assets, earnings situation and labour force market, family support/relationship, citizens' health and rate of institutionalisation and population growth/changes in structure, etc., throughout the projection period.

19. A review on the eligibility criteria of Disability Allowance is under way. Results of the review have yet to be taken into consideration in the projections.
20. Expenditure on the Public Transport Fare Concession Scheme has been projected mainly on the basis of demographic changes. The Government has no record of the actual number of beneficiaries making use of the \$2 Scheme (i.e. the take-up rate) because the majority of elderly people are making use of anonymous Elder Octopus to enjoy the \$2 concessionary fare. Since the implementation of the Scheme by phases on general MTR lines, franchised buses and ferries in June 2012, August 2012 and March 2013 respectively, there has been a mild increase in the average daily passenger trips taken by the beneficiaries. However, given the relatively short implementation period on MTR, buses and ferries, and the recently announced plan to extend the Scheme to green minibuses in phases from the first quarter of 2015, the operational statistics are inadequate for developing a reasonable model to simulate the growth pattern of passenger trips (including the magnitude of induced demand) in the long run, save for the demographic change already applied.
21. As announced in the 2014 Policy Address, a Low-income Working Family Allowance (LIFA) scheme will be introduced. The planned provision for the scheme is about \$3 billion in a full year but details on the scheme are yet to be finalised. For the purpose of this long-term projection exercise, it is assumed that the scheme would commence in 2015-16 and annual provision would be adjusted with CCPI annually.

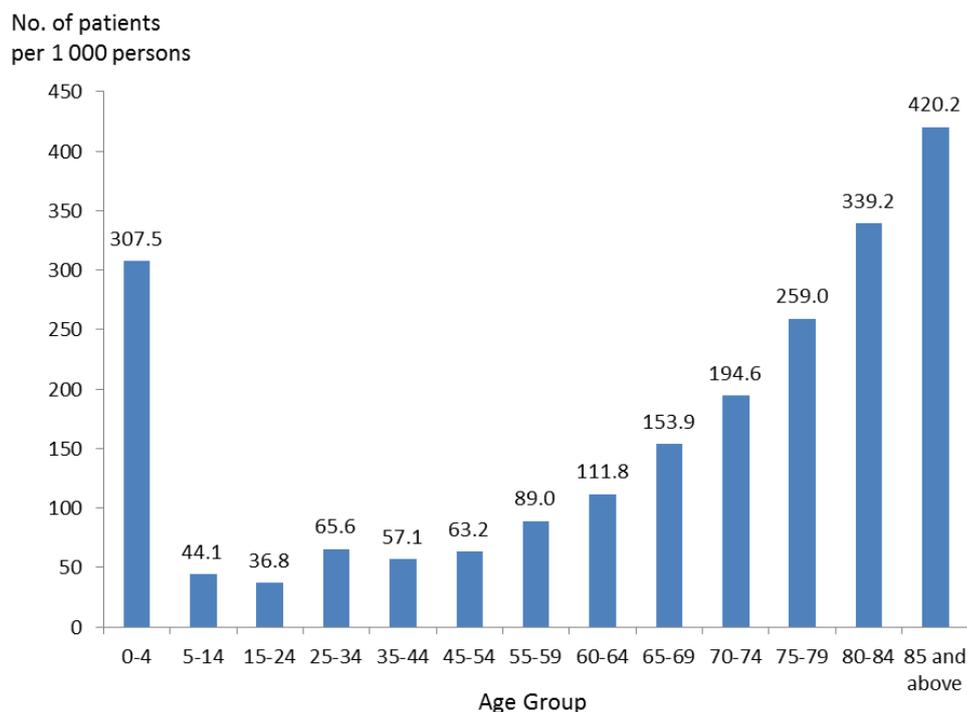
Recurrent health expenditure

22. The projections are mainly compiled on the basis of the population-based funding model for assessing the Hospital Authority's recurrent resource requirements, in particular its acute in-patient services which account for more than half of the Authority's requirements. The model mainly takes into consideration the following key parameters –

- (a) projected population size in each age group as set out in the Hong Kong Population Projections 2012-2041;
- (b) 2007-08 to 2012-13 hospitalization rates for each age group;
- (c) average length of stay (ALOS) for each age group in 2012-13; and
- (d) forecast rate of medical advancement.

23. With a total of 13 age groups, the **hospitalization rates** for each group are measured in terms of number of acute patients per 1 000 persons, projected with reference to the estimated utilization of the Hospital Authority’s acute inpatient services by patients of different gender. The hospitalization rates for elderly aged 60 or above are higher than the overall hospitalization rate, as shown in the following chart.

Chart D.1 – Hospitalization rates by age group in 2012-13



24. The **ALOS** is represented by the average number of discharge per patient and the average number of bed days per patient discharge. The ALOS for elderly aged 60 or above is longer than the overall ALOS. As with the hospitalization rates, the older the population, the longer the ALOS.
25. The total number of bed days required to be delivered by the Hospital Authority in a year is projected by applying the projected population of each age group as published by the Census and Statistics Department to the respective acute hospitalization rates and ALOS in the reference period. While the Hospital Authority provides other healthcare services in addition to acute in-patient services, the Hospital Authority has reviewed the service profile and the resources allocated to all kinds of services (i.e. acute inpatient, non-acute inpatient, Accident and Emergency services, specialist outpatient services and general outpatient, community and other services) and found that the total number of beds days occupied by acute inpatients has shown a strong positive correlation with the Hospital Authority's total recurrent expenditure. Hence, the bed days occupied by acute inpatient is considered as a good factor for projecting the overall growth rate in the total resources required for providing all kinds of public healthcare services.
26. The hospitalization rates during the past few years are used as the basis for projecting the service utilization rates in the coming years. However, the hospitalization rates during the period under review may not be able to reflect the suppressed demand due to healthcare manpower shortage and facilities constraints during the same period. Public expectations for healthcare services for enhanced, improved and new services have also not been taken into account in the projections.
27. **Medical advancement** refers generally to additional resources required to adopt new technology (e.g. introduction of new drugs, medical devices and staff training for new technology) as well as for modernization (e.g. facility modernization and implementation of new safety control process) for the purpose of upkeeping the

safety and quality of medical services. Under the Historical Trend Scenario, medical advancement is assumed to be 2.63% per annum which is based on the actual expenditure from 2007-08 to 2012-13, instead of from 1997-98 as in the projection of recurrent expenditure on education and welfare. This is mainly because Hospital Authority's service utilization statistics before 2007-08 were distorted by the outbreak of SARS.

28. The projected increase in resource requirement for medical advancement fits the global accelerating trend of medical advancement in recent years. However, the projected rate (2.63% per annum) is based on past data of Hospital Authority and may not fully reflect the future picture as Hospital Authority would continue to upkeep its standard of care to a level highly comparable to international standard. For reference, the medical inflation in the United States and Australia is 4.0% per annum and 6.0% per annum respectively.
29. In the 2008-09 Budget Speech, the Financial Secretary agreed to set aside \$50 billion from fiscal reserves to facilitate the implementation of healthcare reform and help enhance the long-term sustainability of the healthcare system. For projection purpose, it is assumed that the \$50 billion would be paid out as a non-recurrent expenditure item in 2015-16.
30. It is expected that the implementation of the Minimum Requirements of the Health Protection Scheme (HPS) would help indirectly alleviate the pressure on the public healthcare system⁴. By improving accessibility to health insurance, enhancing the

⁴ The HPS is expected to bring about a number of changes to the healthcare system, including a growth in the utilization of activities in the private healthcare sector and nominal substitution of activities in the public sector. The substitution of activities is nominal in the sense that it would unlikely be translated into any real reduction in activities, bed days or public expenditure on health. This is because the public healthcare system is already heavily burdened and patients would often need to queue for healthcare services. Amidst the aging population, demand for public healthcare services would only increase further in the future. Nevertheless, patients in the public sector would still benefit from enhanced accessibility of public healthcare services through reduction of waiting time, and improved quality of public healthcare services through optimization of resources.

quality and promoting transparency and certainty of insurance protection, the HPS would facilitate the use of private healthcare services by those who are able and willing to do so. The public sector would nevertheless remain the cornerstone of Hong Kong's healthcare system. It is the Government's policy that no one would be denied of adequate healthcare because of lack of means. As such, it is expected that the demand for public healthcare services would keep rising alongside the trend of population growth and ageing, and that the Hospital Authority would continue its role as the predominant provider of healthcare in Hong Kong.

Capital works expenditure

31. The capital works expenditure projection for the five-year period 2014-15 to 2018-19 reflects the indicative cash flow forecasts for all funded projects under the Capital Works Reserve Fund (CWRP) and the Lotteries Fund and major CWRP projects which are at an advanced planning stage.
32. Annual capital works expenditure has been on average 3.4% of the real GDP over the long run since 1982-83. When extrapolating the longer term projections beyond 2018-19, the Working Group has assumed that capital works expenditure would be stayed at 3.4% of the forecast real GDP for all future years until 2041-42.

Civil service pensions and Civil Service Provident Fund (CSPF) / Mandatory Provident Fund (MPF) contributions

33. When projecting the pension expenditure, the actuarial assessment updated in October 2013 has taken into account the following –
 - (a) service-year related promotion and annual increments to officers,
 - (b) major demographic factors such as wastage rates, mortality rates and retirement rates, and

- (c) lump sum pensions gratuity commuted at the maximum rate of 25% for Old Pension Scheme and 50% for New Pension Scheme
34. In projecting the CSPF/MPF contributions, the following assumptions/bases have been adopted –
- (a) terms and conditions of government contribution to MPF/CSPF as of 1 April 2013 to be applied throughout the projection period;
 - (b) service-year related promotion and annual increments; and
 - (c) major demographic factors such as wastage rates and normal retirement.

Other recurrent expenditure

35. The 2014-15 provision for other recurrent expenditure is 4.7% of nominal GDP. It is assumed that other recurrent expenditure would grow in line with the nominal GDP growth and stay at 4.7% of nominal GDP.

Non-recurrent and other capital expenditure

36. The 2014-15 provision for non-recurrent and other capital expenditure is 1.1% of nominal GDP. It is assumed that non-recurrent and other capital expenditure would grow in line with the nominal GDP growth and stay at 1.1% of nominal GDP.
37. Some non-recurrent expenditure items are one-off or time-limited in nature; these include one-off relief measures like electricity subsidy for a particular year or one-off injections into certain funds as seed money. The long-term projections have excluded these items.

Housing Authority

38. In considering the possible financial implications the Housing Authority's construction programme may have on the Government, the Working Group has assumed that the commitments announced in the 2011-12 and 2013 Policy Address would prevail. The expenditure growth rates from 2014-15 to 2017-18 follow the Housing Authority's 2014-15 approved budget and forecasts whereas those from 2018-19 onwards are in line with the macroeconomic and price assumptions set out in Chapter 2.
39. It is assumed that –
- (a) the production of new Public Rental Housing (PRH) stock would be increased from the current average at 15 000 flats per year to an average of 20 000 flats per year from 2017-18 to 2021-22. For the purpose of this exercise, it is assumed that after 2021-22 the production would remain at 20 000 flats average per year; and
 - (b) the total Home Ownership Scheme (HOS) production over four years from 2016-17 to 2019-20 would be 17 000 flats and thereafter there would be 5 000 flats completed annually.
40. The projected capital expenditure for new stock is based on the June 2013 Construction Cost Yardstick for standard blocks. As set out in a response to a question from the Finance Committee of the Legislative Council in April 2013, the average construction cost of each PRH unit of standard blocks was \$0.54 million⁵ and HOS unit was \$0.99 million at current price level. Additional construction cost for the new production targets would depend largely on factors like the site condition, the scale of development and the specific construction plan to overcome site constraints, etc. If small sites or odd sites with difficult ground conditions are

⁵ \$0.54 million for each standard PRH flat at current price level was based on the Housing Authority's June 2012 Construction Cost Yardstick. For information, an average construction cost of \$0.7 million for a PRH flat was also shown in the Director of Audit's Report No. 61 (Chapter 3) dated 30 October 2013, which was estimated with reference to the weighted average construction costs of a few major projects with building tenders returned during the last 12-month period.

provided, it is likely that the estimated construction cost would increase.

41. Apart from PRH rental, sales proceeds from new HOS flats completed and sold in the period is another major source of the Housing Authority's income. According to the existing policy, the selling prices of new HOS flats are determined with reference to the assessed market value of the individual HOS courts at the prevailing time, taking into account the affordability of applicants and the appropriate price discount as endorsed by the Housing Authority's relevant committee. For consistency, the assumed general price changes as applied in the Housing Authority's 2014-15 approved budget and forecasts is adopted for the long-term expenditure projection. However, this should not be taken as an indicator for projecting the future trend of property market or of HOS flats.

42. The current projections have not taken into account the result or implication of the Long Term Housing Strategy (LTHS) Review, as the resource implication could not be ascertained at this stage. Currently, the projection is based on completion of around 230 000 flats in the coming 10 years (i.e. from 2014-15 to 2023-24). As announced in the 2014 Policy Address, which is ahead of the finalization of the LTHS Steering Committee report, the Government's new target is to increase the supply of public housing in the coming ten years to some 280 000 units, with an average of about 20 000 PRH units and about 8 000 HOS units per year. Given the substantial increase, the Housing Authority needs to look closely into how the construction programme could be geared up to meet the new production target. Detailed studies need to be carried out before coming up with the construction programme for the coming ten years and thus the financial implication that may arise. Further update to the projection of the Housing Authority's long-term financial position would likely show an even larger cash shortfall.