Acknowledgement

1. The Working Group on Long-Term Fiscal Planning is most grateful to the Civil Service Bureau, Development Bureau, Education Bureau, Food and Health Bureau, Labour and Welfare Bureau, Transport and Housing Bureau, and their related departments, as well as the overseas Economic and Trade Offices of the Commerce and Economic Development Bureau for offering their valuable advice and direct input for the sector-specific long-term projections and/or helping to source and verify input relating to other economies.

2. The Working Group would also like to express its sincere gratitude to the relevant authorities in Australia, Canada, Germany, Japan, Singapore, Switzerland and the United Kingdom, the International Monetary Fund and the Organisation for Economic Co-operation and Development for their direct feedback and/or support through making available a large pool of research publications and budget details, without which the analyses on overseas experience would not have been possible.

Contents

Executive Summary

1. The fiscal health of Hong Kong is envy to many. Hong Kong would experience ten successive years of budget surplus since 2004-05. Fiscal reserves reach some $750 billion, which is about 21 months of government expenditure or over 30% of the nominal Gross Domestic Product (GDP). With continued economic growth, and with the powerful backing of the Mainland as hinterland for Hong Kong, do we really have a fiscal problem?

2. Appointed by the Financial Secretary, the Working Group on Long-Term Fiscal Planning has completed a fiscal sustainability appraisal on the current state of public finances in Hong Kong. The fiscal sustainability appraisal includes three core components, being projections on –

   (a) economic growth,
   (b) government revenue, and
   (c) government expenditure.

   A balanced and sustainable development requires **all three** components to grow at rates that are commensurate with one another. This is the wisdom enshrined in Article 107 of the Basic Law.

3. In line with its terms of reference, the Working Group has conducted the fiscal sustainability appraisal on the basis of the official population projections up to 2041 and, unless otherwise defined in the different expenditure scenario analyses, assumed that prevailing government policies (including tax, immigration, retirement and welfare policies, etc.) and commitments announced in the 2014 Policy Address would continue throughout the projection period.

Ageing

4. The population in Hong Kong is ageing fast. This affects GDP growth, government expenditure as well as government revenue.

(a) In 2012, **total population** in Hong Kong was 7.1 million; this is forecast to **grow by about 19%** to 8.5 million in 2041.

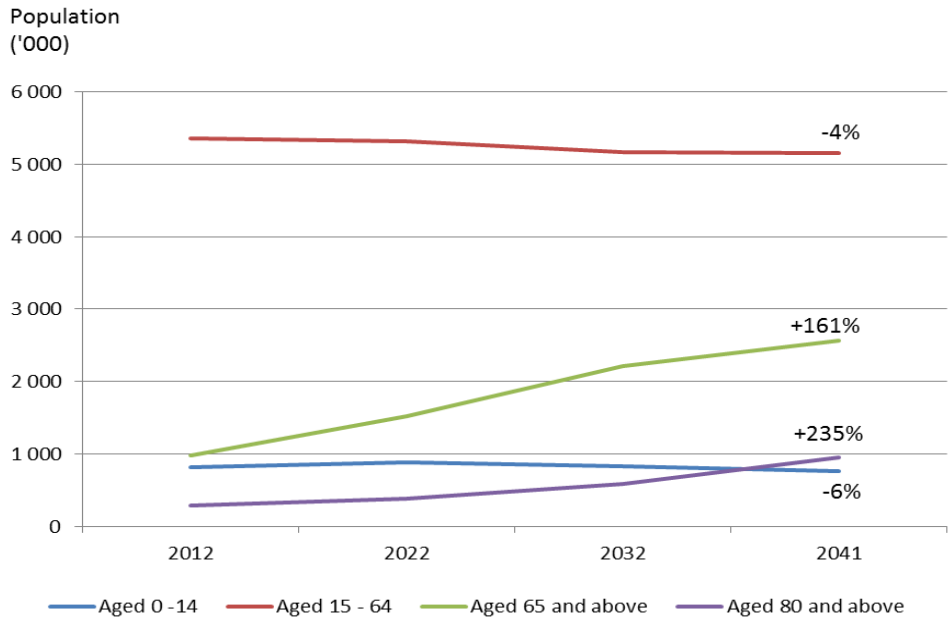
(b) The age group between **15 and 64** is forecast to **drop 4%**, from 5.3 million to only 5.1 million in 2041.

(c) By contrast, the age group of **65 and above** is forecast to **grow 161%**, from 980 000 in 2012 to 2 560 000 in 2041. Within this group, those **aged 80 and above** is forecast to **grow 235%**, from 286 000 to 957 000.

(d) The **elderly dependency ratio** (ratio of those aged 65 and above to those aged 15 to 64) would **increase** from 18.3% in 2012 to **49.7% in 2041**.

(e) The **median age** for Hong Kong was 42.8 in 2012; it is forecast to be **51.8 by 2041**.

Population changes by age groups



5. An expanding and ageing population will put pressure on social welfare and health services expenditure. Purely on account of headcount change, i.e. assuming **no** inflation and **no** service enhancement over time, government expenditure on selected age-sensitive items would multiply –

(in 2013 constant prices)	**2014-15 $ Billion**	**2041-42 $ Billion**
Recurrent subvention requirement of Hospital Authority	47.2	85.6
Old Age Living Allowance/ Old Age Allowance	14.6	36.4
Welfare services for the elderly	6.2	16.3
Public Transport Fare Concession Scheme	0.6	1.8
Elderly Health Care Voucher Scheme	0.8	2.5

With the population ageing, the size of the labour force is set to decline, posing a threat, if not drag, on economic growth and putting pressure on government revenue.

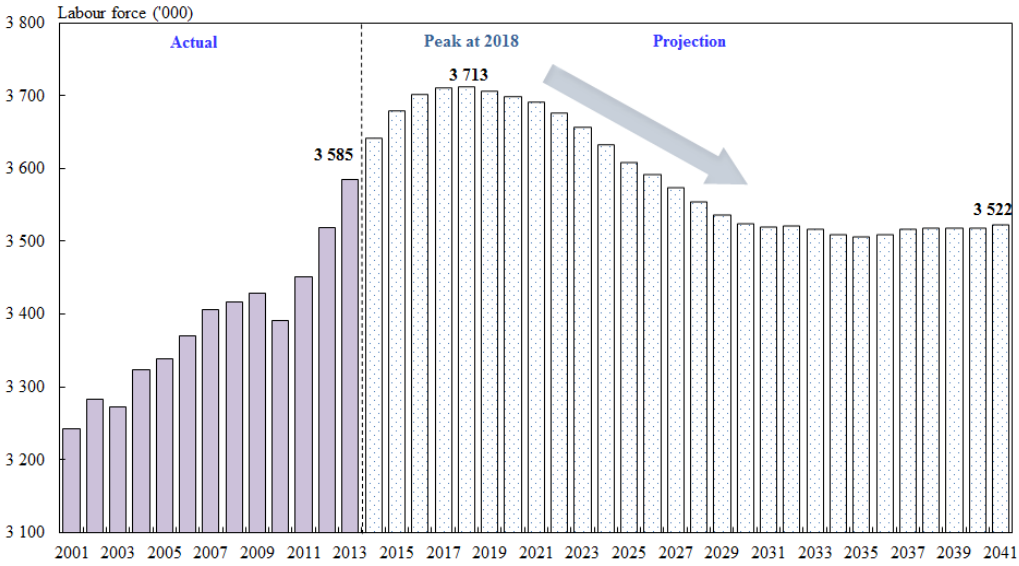
Economic Growth

6. The fundamental driver that determines how much the Government receives and theoretically restrains how much the Government can spend is the performance of the economy. As a small and open economy, Hong Kong is **highly susceptible to the influences of the global economy**. The oil crisis and stock market crash in the mid-1970s, the global recession in the early 1980s, the Asian financial crisis in 1998, and the IT bubble burst in 2000 coupled with the outbreak of the Severe Acute Respiratory Syndrome (SARS) in Hong Kong in 2003 all coincided with occasional years of budget deficit for Hong Kong in 1973-74 and 1974-75, 1982-83 and 1983-84, 1998-99, and 2000-01 to 2003-04 respectively.

7. Hong Kong's economic growth has steadily decelerated over time, reflecting the evolution from a developing economy marked by high growth to a mature economy with lower growth. GDP growth was **8.9%** per annum in the 1970s, **7.4%** per annum in the 1980s, and **5.0%** per annum in the mid-1990s. Trend growth averaged at **3.4%** per annum in the post-1997 era. For the past 30 years, the trend GDP growth of 4.6% per annum was achieved with the support of 1.3% per annum growth in the labour force, and around 3% labour productivity growth per annum, the latter being driven by an on-going process of structural transformation towards a knowledge-based and high value-added service economy.

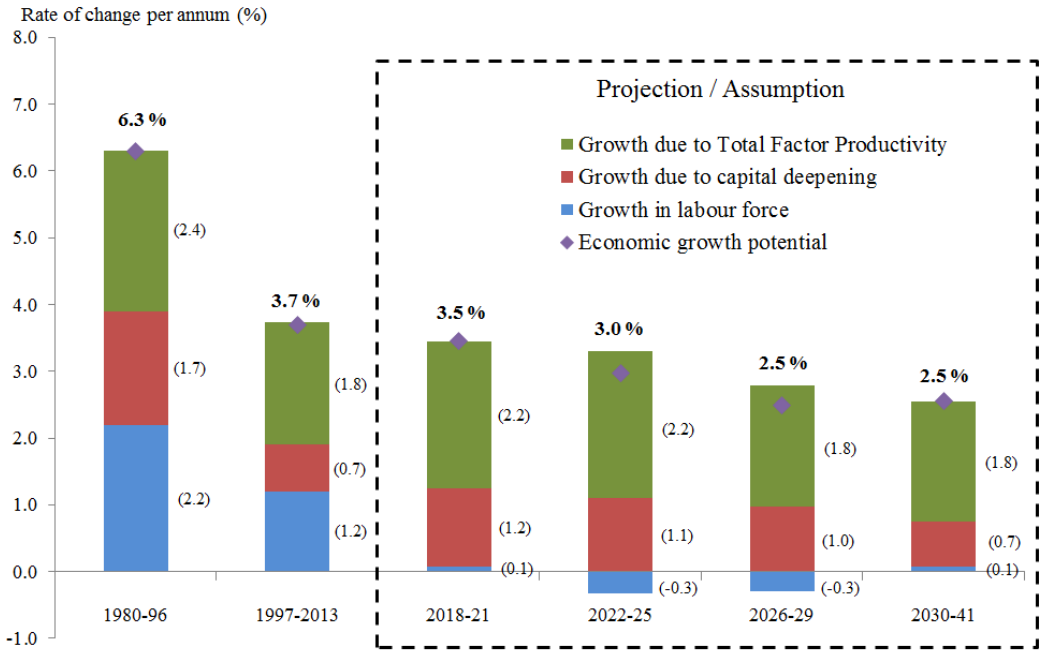
8. Looking ahead, under existing population policies, local labour force is expected to peak by 2018 and gradually decline until the early 2030s. Although productivity growth in our workforce is assumed to keep in pace with the vibrant performance in the past, Hong Kong's long-term growth prospect in the coming three decades will unavoidably be constrained.

Labour force is expected to decline after 2018, only to stabilise in the 2030s



Notes : Figure for 2013 is provisional.
The projections from 2014 onwards are based on *Updated Hong Kong Labour Force Projections for 2013 to 2041, Hong Kong Monthly Digest of Statistics, the Census and Statistics Department (C&SD) (September 2013).*

Economic growth looks set to decelerate over the long term as labour force starts to stagnate

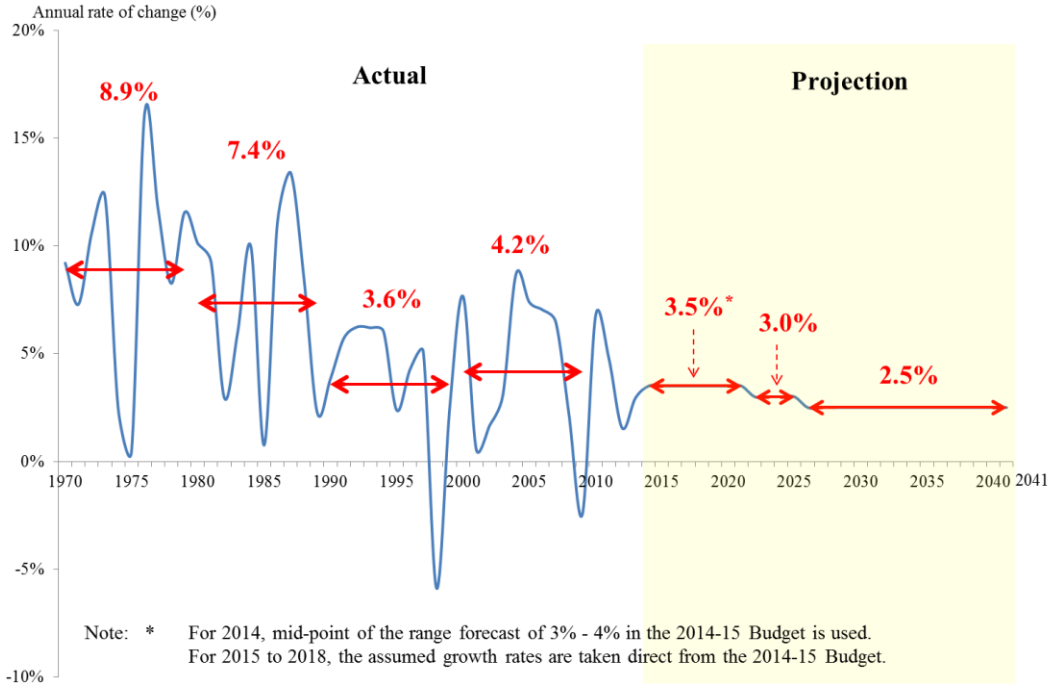


Notes : ( ) Contribution to the economic growth potential in percentage point.

Economic growth potential refers to the **potential output** growth under full employment. As such, the growth rates presented here for 1980-1996 and 1997-2013 differ slightly from the **actual GDP** growth rates. For details, see **Chapter 2** and **Annex B**.

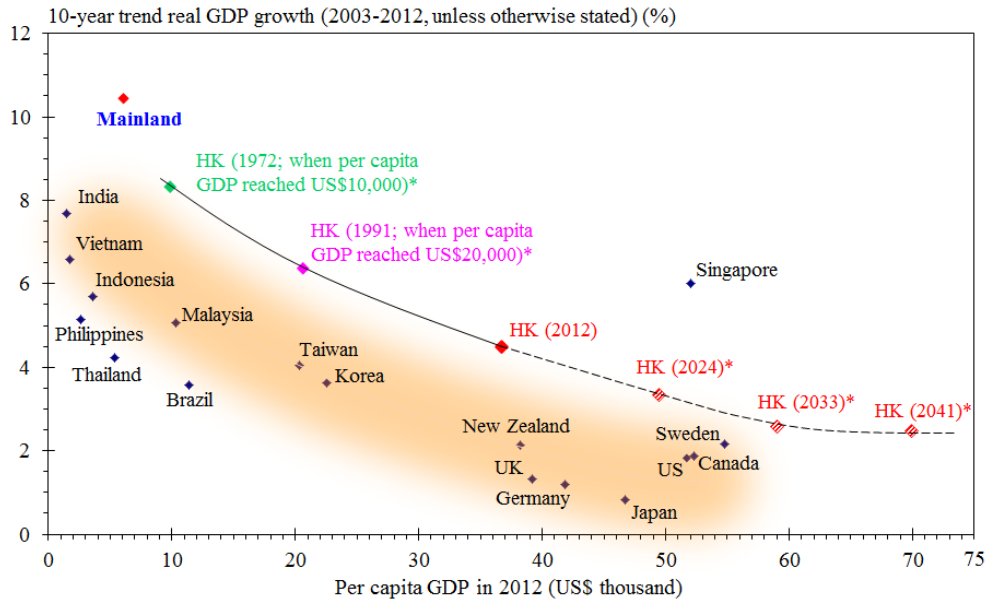
9. The Working Group has adopted a **Base Case** (regarded as the best estimate) that assumes that real GDP growth would stay at **3.5%** per annum from 2014 to 2021 and gradually decelerate to **3%** for 2022 to 2025, and then further to **2.5%** from 2026 to 2041. The macro-economic assumptions for the short to medium term (2014 to 2018) follow those in the 2014-15 Budget and are accepted by the Working Group as given. The Base Case assumptions from 2014 to 2041 imply **an average projected real GDP growth rate of 2.8% per annum**, lower than the historical trend growth rate of 3.4% since 1997-98.

Real GDP growth



10. In context, a long-term real GDP trend growth at 2.8% per annum would put Hong Kong amongst the league of **mature economies**. The following chart shows the relative 10-year trend GDP growth of various economies from 2003 to 2012.

Economic growth bound to go lower as the economy becomes more mature



Notes: * Per capita GDP figures for these data points are in 2012 constant dollar terms, i.e. they have been adjusted for change in prices over time for more meaningful comparisons. The figures beyond 2013 are projected figures derived from the macroeconomic assumptions under the Base Case and C&SD's population projection.

11. In **nominal** terms, GDP is projected to grow at **4.4% per annum**, lower than the average growth at 6% per annum in the recent five years since 2009-10, though higher than the 17-year average since 1997-98 of 2.9% per annum given the distortions of economic downturns.

12. To test the robustness of the fiscal projections, **High Case and Low Case** sensitivity analyses have been performed assuming that from 2019 onwards, GDP growth per annum would be **0.5 percentage point higher and lower** respectively than that adopted for the Base Case. A purely hypothetical **Shock Case** was also constructed assuming that the economy would dip into a recession in 2015 and 2016, recover in a sluggish manner between 2017 and 2019 and return to the growth path as that in the Base Case from 2020 onwards. The projected average GDP growth rates per annum from 2014 to 2041 under the different cases are summarised below –

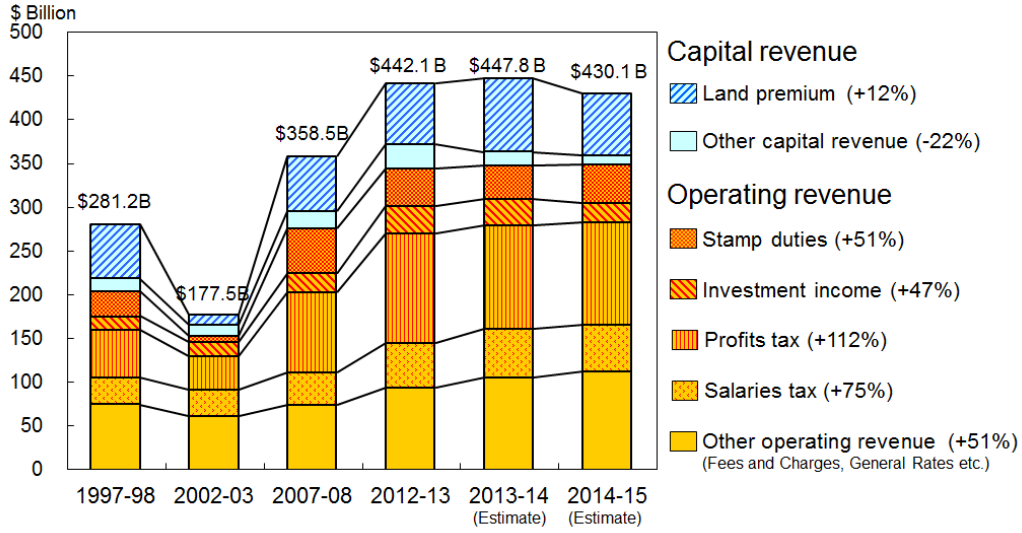
	Base Case	**High Case**	**Low Case**	**Shock Case**
Real GDP	2.8%	3.3%	2.4%	2.0%
Nominal GDP	4.4%	5.3%	3.6%	2.9%

Unless otherwise indicated, the projections described in this report refer to the Base Case.

Government Revenue

13. Profits tax, salaries tax, land premium, stamp duty and investment income are the major revenue sources of the Government, contributing about 75% of the estimated total revenue in 2014-15.

Government revenue growth since 1997-98



14. For the **17 years from 1997-98**, government revenue would increase by a cumulative 52.9% from $281.2 billion in 1997-98 to $430.1 billion in 2014-15. This represents a **growth of 2.5% per annum**, which is comparable to the average nominal GDP growth rate of 2.9% per annum during the same period. In other words, the growth in government revenue has been broadly commensurate with the growth of the economy in the long run when the effects of economic cycles smoothen out.

15. For the **five years from 2009-10**, total government revenue would grow at an average of **6.2% per annum**, from $318.4 billion in 2009-10 to $430.1 billion in 2014-15. This growth rate also follows closely the 6.0% per annum growth in nominal GDP for the same period.

16. Despite the recent increases in government revenue, there are **underlying concerns** that government revenue is narrow-based and volatile, and that an ageing population would add to the burden of the next generation of taxpayers and the community at large. Specifically –

(a) The Government is increasingly reliant on direct tax revenue, land premium and investment income to finance its expenditure. Direct tax (profits tax, salaries tax and property tax) was 56% of all tax revenue in 1997-98 and 65% in 2012-13. Contribution from fees and charges, a more stable revenue item, dropped from 4% in 1997-98 to 2.6% in 2012-13.

(b) The tax base of profits tax has remained low, with only 11% of (or 94 900) registered corporations paying profits tax for the 2011-12 tax year, compared with 14% for 2007-08 and 2002-03. The top-paying 700 to 800 corporations contributed 64.4% of the overall profits tax revenue for the 2011-12 tax year, compared with 61% for the 1997-98 tax year.

(c) Only 45% of the working population paid salaries tax for the 2011-12 tax year. Reliance on the high-income individuals is also on the rise. In 2011-12 tax year, the top 200 000 salaries tax payers contributed 81.7% of the salaries tax; in 1997-98, they contributed 71.6%.

(d) Government revenue is highly sensitive to the performance of the economy and tends to react to economic upswings and downswings more dramatically than the economy itself. The following illustrates the volatility of key revenue sources since 1997-98 –

Revenue item	Range from 1997-98 to 2013-14		Estimated revenue in 2014-15	
	% of GDP	equivalent $ Billion	% of GDP	equivalent $ Billion
Profits tax	2.9% - 6.2%	37.7 - 125.6	5.3%	117.6
Salaries tax	1.9% - 2.7%	25.1 - 51.8	2.4%	52.9
Stamp duties	0.6% - 3.1%	7.5 - 51.5	2.0%	43.8
Land premium	0.4% - 4.6%	5.4 - 62.5	3.2%	70.0
Investment income	0.1% - 3.3%	0.9 - 41.9	1.2%	27.0
Other revenue	4.6% - 7.0%	77.7 - 88.0	5.3%	118.8
Total revenue	13.3% - 22.6%	175.6 - 437.7	19.4%	430.1

(e) With an ageing population, the workforce size is projected to reach its peak in 2018 and dwindle throughout the 2020s. There will be pressure on salaries tax and other operating revenues.

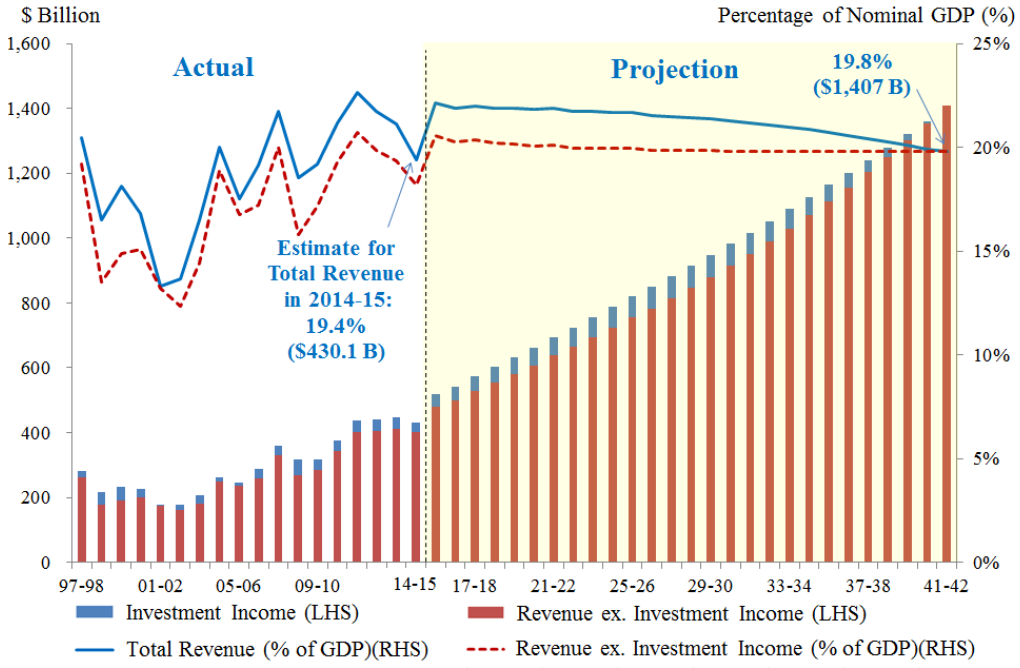
17. Although government revenue swings along with and in the same direction as fluctuations in the local and global economy, **government revenue as a percentage of nominal GDP has seldom exceeded 20%** (only seven times in the past 40 years). Government revenue was on average 18.6% of nominal GDP between 1997-98 and 2012-13, with 13.3% being the trough and 22.6% the peak. This essentially reflects the inherent low tax regime in Hong Kong. Given the protection stipulated in Article 108 of the Basic Law, it would be hard to expect major hikes in government revenue beyond 20% of nominal GDP.

18. Looking ahead, **long-term projections on government revenue** are derived through an **econometric model** that analyses the historical relationship between the major revenue items and the boom-bust cycle of the macro economy, with data collated over an extended period from 1991-92.

19. Government revenue before investment income is projected to grow at 4.7% per annum. The projected trend growth broadly aligns with the projected trend growth in nominal GDP (4.4% per annum).

20. Investment income is projected using an assumed 5% annual rate of return (which is the actual rate of return for 2013-14 and is broadly comparable to the average investment return of 5.3% on the fiscal reserves for the five-year period from 2010-11 to 2014-15) on the average fiscal reserves balance. After taking into account investment income, government revenue is projected to **grow at 4.5% per annum** under the **No Service Enhancement Scenario** (please also see paragraph 28(a) below). This lies roughly in the mid-range of the 17-year average growth since 1997-98 at 2.5% per annum and the five-year average growth since 2009-10 at 6.2% per annum. Government revenue as ratio of nominal GDP is projected at 19.8% in 2041-42; or in dollar terms, to rise from $430.1 billion in 2014-15 to $1,407 billion in 2041-42.

Projection on government revenue



21. The projected revenue by 2041-42 under the various macroeconomic cases and expenditure scenarios (see paragraph 28 below) is summarised below –

Expenditure Scenarios	**Base Case**	**High Case**	**Low Case**	**Shock Case**
No Service Enhancement				
- $ Billion	1,407	2,285	937	943
- % of nominal GDP	19.8%	25.8%	16.5%	19.8%
- Average growth per annum	4.5%	6.4%	2.9%	2.9%
Service Enhancement at 1% per annum				
- $ Billion	1,407	2,135	937	943
- % of nominal GDP	19.8%	24.1%	16.5%	19.8%
- Average growth per annum	4.5%	6.1%	2.9%	2.9%
Service Enhancement at 2% per annum				
- $ Billion	1,407	2,076	937	943
- % of nominal GDP	19.8%	23.5%	16.5%	19.8%
- Average growth per annum	4.5%	6.0%	2.9%	2.9%
Service Enhancement at Historical Trend				
- $ Billion	1,407	2,076	937	943
- % of nominal GDP	19.8%	23.5%	16.5%	19.8%
- Average growth per annum	4.5%	6.0%	2.9%	2.9%

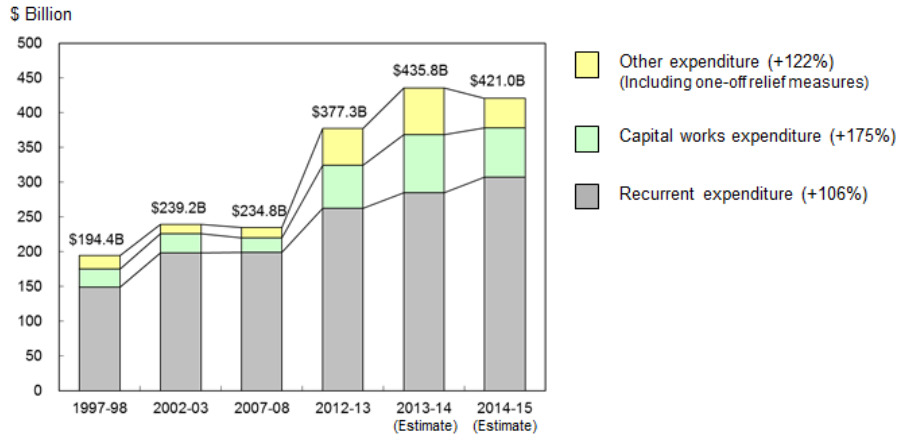
Government Expenditure

22. Government expenditure comprises operating expenditure (recurrent and non-recurrent) and capital expenditure (primarily capital works). In the context of this report, capital works include funding under the Capital Works Reserve Fund and the Lotteries Fund. Education, social welfare and health are the key recurrent expenditure portfolios, accounting for some 60% of Government's recurrent expenditure, which would amount to $307.4 billion in 2014-15.

23. For the **17 years from 1997-98**, government expenditure would grow on a cumulative basis by 116.6%, from $194.4 billion in 1997-98 to $421.0 billion in 2014-15 (including repayment of $9.8 billion in bonds and notes). This implies an average growth of **4.7% per annum**, which **exceeds** the 2.5% per annum growth in government revenue, and the 2.9% per annum growth in nominal GDP in the same period.

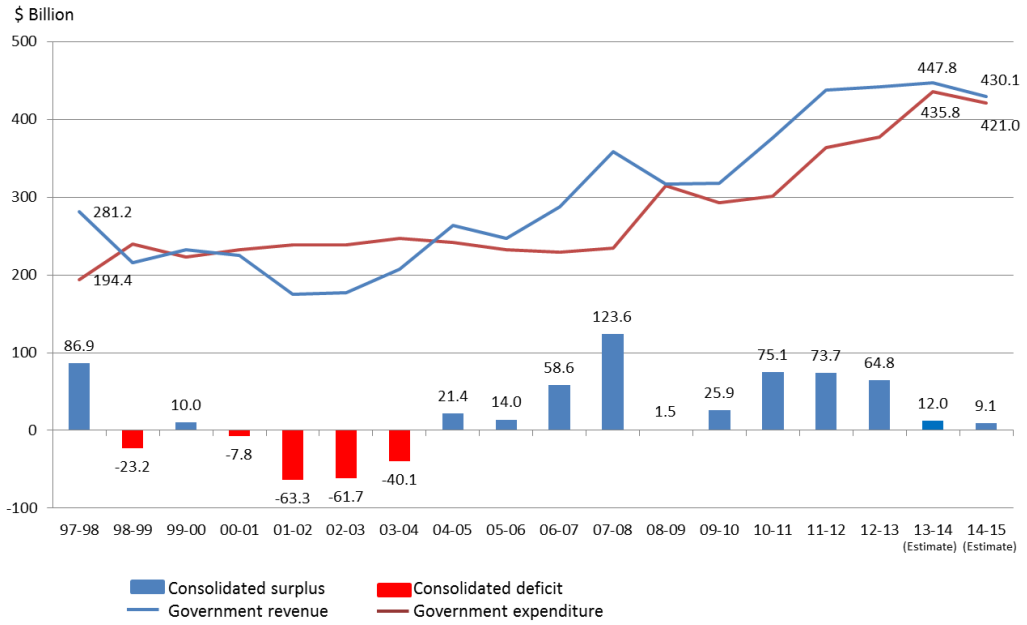
24. For the **five years from 2009-10**, government expenditure would increase from $292.5 billion in 2009-10 to $421.0 billion in 2014-15. This reflects an average growth of **7.5% per annum**, which **exceeds** the 6.2% per annum growth in revenue and the 6% per annum growth in nominal GDP during the same period. It also **outpaces** the post-handover average annual growth of 4.7% in government expenditure.

Government expenditure growth since 1997-98



25. Although government expenditure has grown faster than government revenue and nominal GDP on average, Hong Kong still managed to achieve budget surpluses since 2004-05 because government expenditure was strictly contained between $220 billion and $250 billion for ten years between 1998-99 and 2007-08; and by 2007-08, government expenditure was $234.8 billion, way less than government revenue at $358.4 billion. Given a lower base, government expenditure can therefore grow faster than revenue in recent years without triggering budget deficits.

Financial highlights since 1997-98



26. Although we manage to achieve ten years of budget surplus since 2004-05, it is **not sustainable to allow government expenditure to persistently grow faster than government revenue and nominal GDP.** Nor would this be in line with the requirement of Article 107 of the Basic Law for the Hong Kong Special Administrative Region *"to keep the budget commensurate with the growth of its gross domestic product"*.

27. The Working Group sees a need to pay **greater regard to longer term affordability and fiscal sustainability**. Obviously, population ageing would exert pressure on government expenditure and undermine economic and revenue growth. There are inherent inelasticities in government expenditure. Over 10% of the Government's recurrent expenditure relates to social security payments; another 30% relates to personal emoluments and related expenditure for the Government and 30% relates to payouts of similar nature for the subvented sector. As revealed by the past trends, these payments tend to go up more frequently and quickly than going down. Besides, fiscal reserves can be depleted faster than one might expect. In the six years from 1998-99, Government used up some $200 billion of the fiscal reserves. As at end-March 2014, outstanding commitments from capital works would amount to $340 billion, statutory pension liabilities over $700 billion and debt guarantees $80 billion.

28. Looking ahead, the Working Group has examined the recurrent expenditure requirements for the three policy area groups which are particularly sensitive to demographic changes – namely, **education**, **social welfare** and **health**. They account for the lion's share (about 60%) of the Government's recurrent expenditure in 2014-15. Four projection scenarios have been developed for each –

(a) Under the **No Service Enhancement Scenario**, it is assumed that there would be **no** policy changes and **no** service improvements in these three areas from now to 2041-42. The two key variables determining their recurrent expenditure requirements under this scenario are **demographic changes** and **price changes**.

(b) With the scenario at (a) above as the building block, three Service Enhancement Scenarios have been developed –

(i) **Service Enhancement at 1% per annum** assumes that recurrent expenditure on education, social welfare and health would grow at 1% per annum on top of demographic changes and price changes;

(ii) **Service Enhancement at 2% per annum** is the same as (i) except that recurrent expenditure on the three areas is assumed to grow at 2% per annum on top of demographic changes and price changes; and

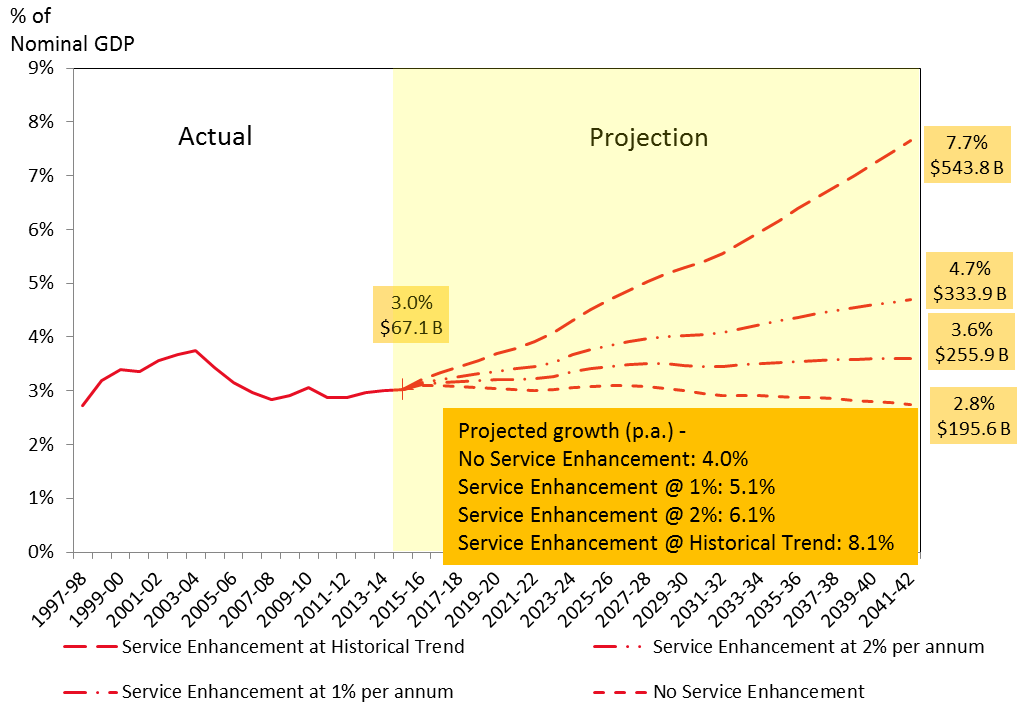
(iii) **Service Enhancement at Historical Trend** assumes that services for education, social welfare and health would be enhanced, at 3.86%, 2.8% and 2.63% per annum respectively (or on average, 3% per annum collectively for the three sectors) trailing historical trends. In the fields of education and social welfare, the trends since 1997-98 have been used. In the field of health, the Working Group adopted the trend rate since 2007-08 to take away the distortions caused by the outbreak of SARS in 2003-04.

Education

29. Under the **No Service Enhancement Scenario**, recurrent education expenditure as a percentage of nominal GDP would drop from 3% in 2014-15 to 2.8% in 2041-42, mainly owing to the expected decline in total population for the age group of 3 to 21. In dollar terms, there would still be an increase from $67.1 billion to $195.6 billion. It reflects a growth rate of **4.0% per annum**.

30. Under the three **Service Enhancement Scenarios**, recurrent education expenditure as a percentage of nominal GDP would increase from 3% in 2014-15 to between 3.6% and 7.7% in 2041-42; or in dollar terms, from $67.1 billion to between $255.9 billion and $543.8 billion. This reflects a projected trend growth rate of **5.1% to 8.1% per annum**, exceeding the post-handover average annual growth of 3.5% in recurrent education expenditure.

Recurrent education expenditure

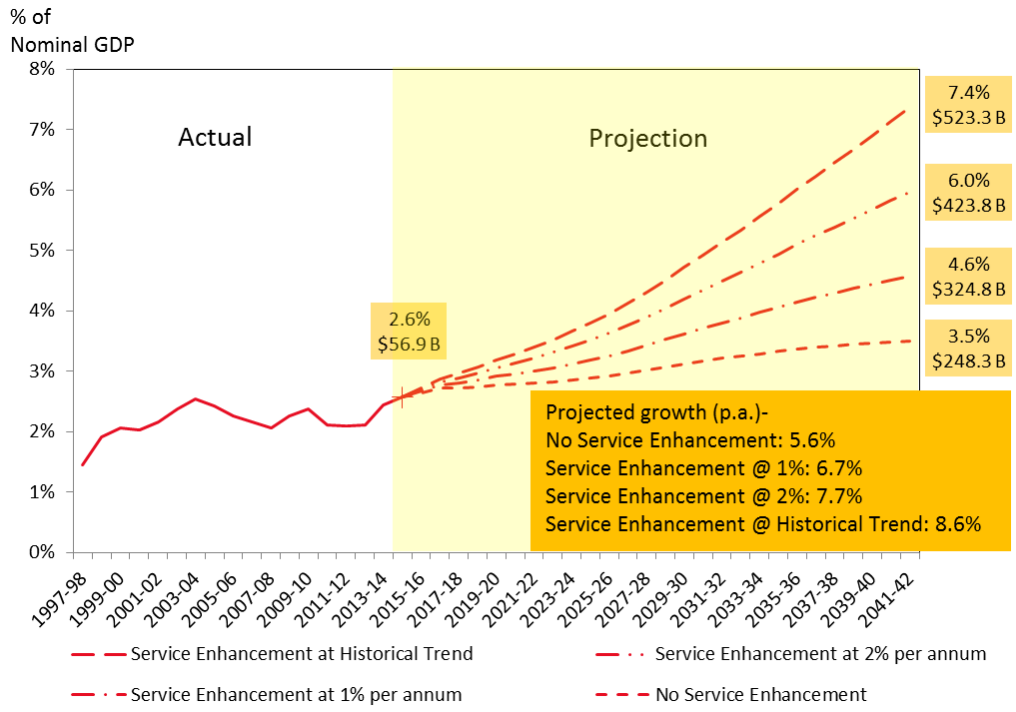


Social welfare

31. Under the **No Service Enhancement Scenario**, recurrent social welfare expenditure as a percentage of nominal GDP would increase from 2.6% in 2014-15 to 3.5% in 2041-42; or in dollar terms, from $56.9 billion to $248.3 billion. It reflects a growth rate of **5.6% per annum**.

32. Under the three **Service Enhancement Scenarios**, recurrent social welfare expenditure as a percentage of nominal GDP would increase from 2.6% in 2014-15 to between 4.6% and 7.4% in 2041-42; or in dollar terms, from $56.9 billion to between $324.8 billion and $523.3 billion. This implies a projected trend growth rate of **6.7% to 8.6% per annum**, higher than the post-handover average annual growth of 6.4% in recurrent social welfare expenditure.

Recurrent social welfare expenditure

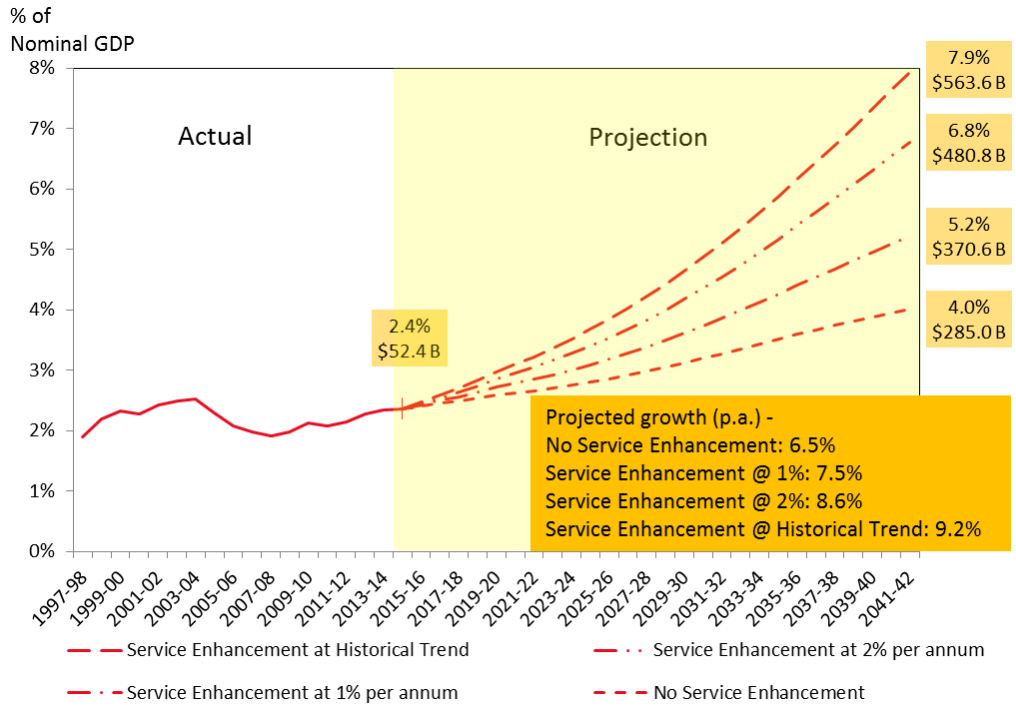


Health

33. Under the **No Service Enhancement Scenario**, recurrent health expenditure as a percentage of nominal GDP would increase from 2.4% in 2014-15 to 4.0% in 2041-42; or in dollar terms, from $52.4 billion to $285.0 billion. It reflects a growth rate of **6.5% per annum**.

34. Under the three **Service Enhancement Scenarios**, recurrent health expenditure as a percentage of nominal GDP would increase from 2.4% in 2014-15 to between 5.2% and 7.9% in 2041-42; or in dollar terms, from $52.4 billion to between $370.6 billion and $563.6 billion. This implies a projected trend growth rate of **7.5% to 9.2% per annum**, higher than the post-handover average annual growth of 4.2% in recurrent expenditure on health services.

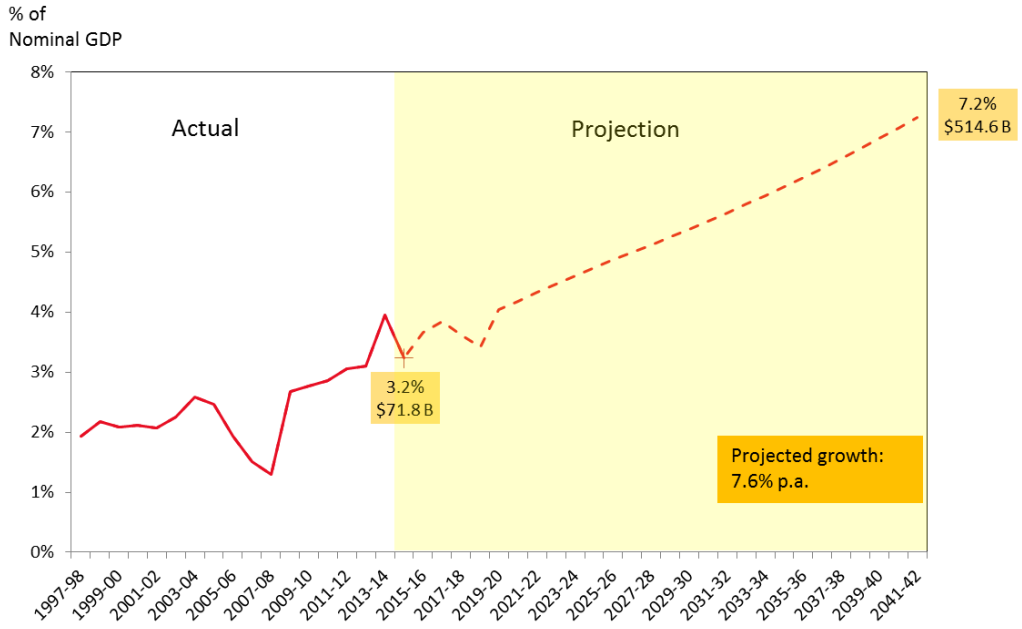
Recurrent health expenditure



Capital works

35. The cash flow requirements on capital works tend to be volatile. Over a period of some 30 years (from 1982-83 upon the establishment of the Capital Works Reserve Fund to 2014-15), capital works expenditure was on average 3.4% of real GDP. The Working Group assumes that capital works expenditure would be maintained at 3.4% of real GDP over the forecast period. Despite this, construction prices tended to and are assumed to rise faster than general inflation as measured by the GDP deflator. In terms of nominal GDP, capital works expenditure is projected to increase from 3.2% in 2014-15 to 7.2% in 2041-42. In dollar terms, capital works expenditure is projected to increase from $71.8 billion to $514.6 billion, at a growth rate of **7.6% per annum**, higher than the post-handover average annual growth of 6.0%.

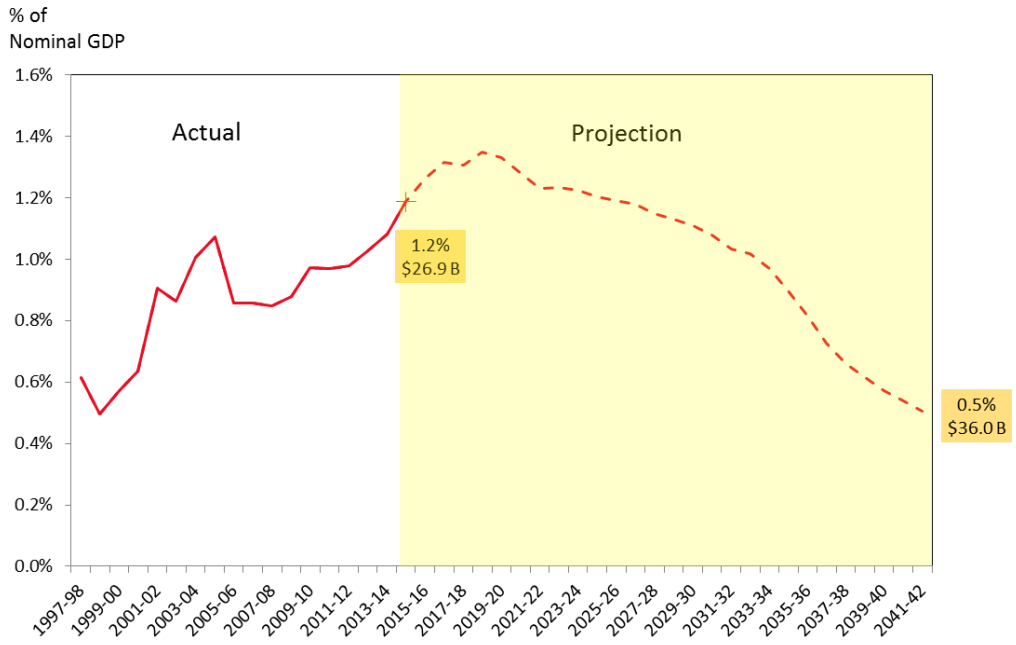
Capital works expenditure



Statutory pension liabilities

36. On the basis of an actuarial assessment on pension liability updated in October 2013, it is projected that the Government's expenditure on public and judicial service pension benefits would increase gradually from $26.9 billion in 2014-15 to the **peak at $50.9 billion in 2032-33**, when most of the pensionable officers would be retiring and receiving their lump sum pension gratuities over the period. The expenditure is projected to decrease henceforth to $36 billion by 2041-42. In terms of percentage of nominal GDP, pension expenditure would be 1.2% in 2014-15 and 0.5% in 2041-42.

Statutory pension expenditure



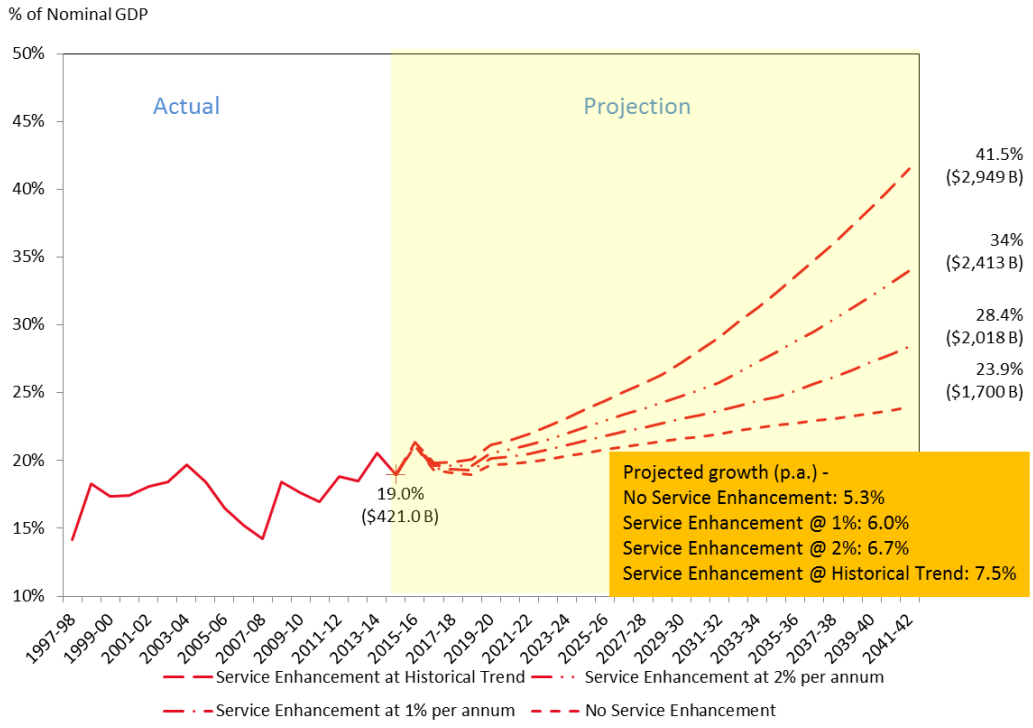
Total government expenditure

37. Taking into account the above expenditure projections, together with the projections for other recurrent, non-recurrent and other capital expenditure (which are assumed to be maintained at their current share of GDP over the projection period), total government expenditure is projected to increase from 19.0% of nominal GDP in

2014-15 to 23.9% in 2041-42 under the Base Case **No Service Enhancement Scenario**. In dollar terms, the increase would be more than three times from $421.0 billion in 2014-15 to $1,700 billion in 2041-42. This reflects a projected trend growth in government expenditure of **5.3% per annum**, which is higher than the projected trend growth in nominal GDP of 4.4% per annum.

38. Under the three **Service Enhancement Scenarios**, total government expenditure as a percentage of nominal GDP is projected to increase from 19.0% in 2014-15 to between 28.4% and 41.5% in 2041-42. In dollar terms, the increase would be five to six times from $421.0 billion in 2014-15 to between $2,018 billion and $2,949 billion in 2041-42. This implies a projected trend growth in government expenditure of **6.0% to 7.5% per annum.** The projected expenditure growth **exceeds** the post-handover average annual growth of 4.7% in government expenditure. It also **exceeds** the projected nominal GDP growth of 4.4% per annum.

Total government expenditure



39. The projected expenditure by 2041-42 under the various macroeconomic cases and expenditure scenarios is summarised below –

Expenditure Scenarios	**Base Case**	**High Case**	**Low Case**	**Shock Case**
No Service Enhancement				
- $ Billion	1,700	2,010	1,544	1,393
- % of nominal GDP	23.9%	22.7%	27.1%	29.3%
- Average growth per annum	5.3%	6.0%	4.9%	4.5%
Service Enhancement at 1% per annum				
- $ Billion	2,018	2,258	1,829	1,646
- % of nominal GDP	28.4%	25.5%	32.1%	34.6%
- Average growth per annum	6.0%	6.4%	5.6%	5.2%
Service Enhancement at 2% per annum				
- $ Billion	2,413	2,660	2,186	1,965
- % of nominal GDP	34.0%	30.1%	38.4%	41.3%
- Average growth per annum	6.7%	7.1%	6.3%	5.9%
Service Enhancement at Historical Trend				
- $ Billion	2,949	3,253	2,670	2,398
- % of nominal GDP	41.5%	36.8%	46.9%	50.4%
- Average growth per annum	7.5%	7.9%	7.1%	6.7%

Structural Deficits Looming

40. The Working Group has consolidated the revenue and expenditure projections to deduce the overall fiscal outlook for Hong Kong under the various scenarios. The projected annualised trend growth rates of GDP, government revenue and government expenditure are as follows –

	Projected Trend Growth (Base Case, No Service Enhancement Scenario)	**Trend Growth in recent years**	
	2014-15 to 2041-42	1997-98 to 2014-15	2009-10 to 2014-15
Real GDP	2.8%	3.4%	3.9%
Nominal GDP	4.4%	2.9%	6.0%
Government revenue	4.5%	2.5%	6.2%
Government expenditure	5.3%	4.7%	7.5%

41. Despite the healthy state of our public finances at the moment, the Base Case **No Service Enhancement Scenario** reveals that a **structural deficit** could strike in 2029-30 (within 15 years) even if services for the education, social welfare and health sectors were to be maintained at existing levels, and expenditure would grow merely with price changes and demographic changes. The problem could surface much earlier (within a decade) under the **Service Enhancement Scenarios**.

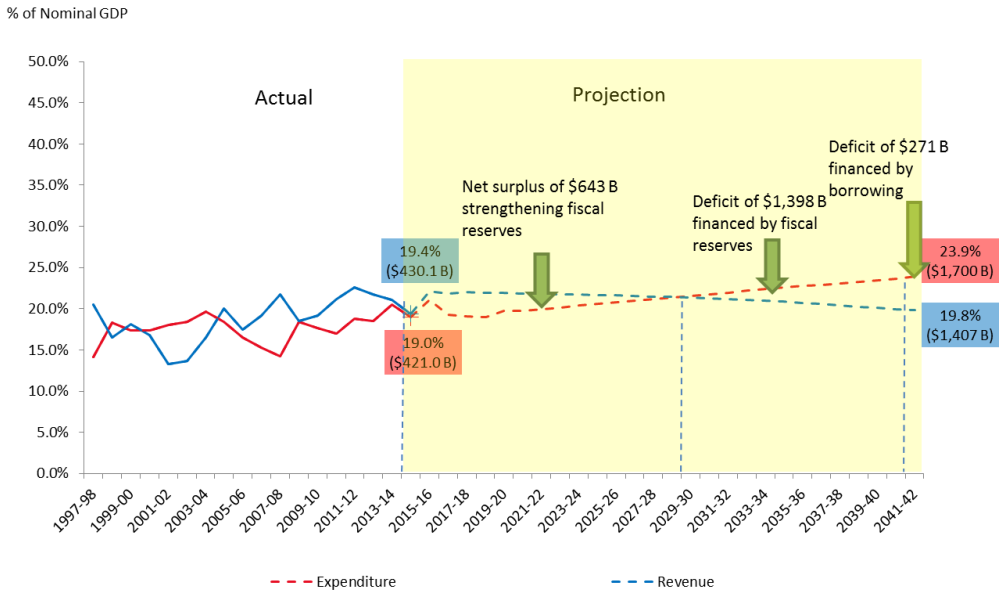
42. Unless the Government takes timely, resolute and effective measures to address the problem, the healthy state of our public finance would deteriorate gradually under the No Service Enhancement Scenario and more rapidly under the three Service Enhancement Scenarios, by phases –

(a) **Living with surplus** – government revenue is still projected to exceed government expenditure in the coming years and the Government would still be able to build up the fiscal reserves. The good years ahead will give the community a false sense of security.

(b) **Living on reserves** – a structural deficit could surface within a decade or two should government expenditure growth keep exceeding revenue growth. The Government would be dipping into the fiscal reserves to fund the shortfalls. Depending on the expenditure pattern, this could last for seven to 12 years.

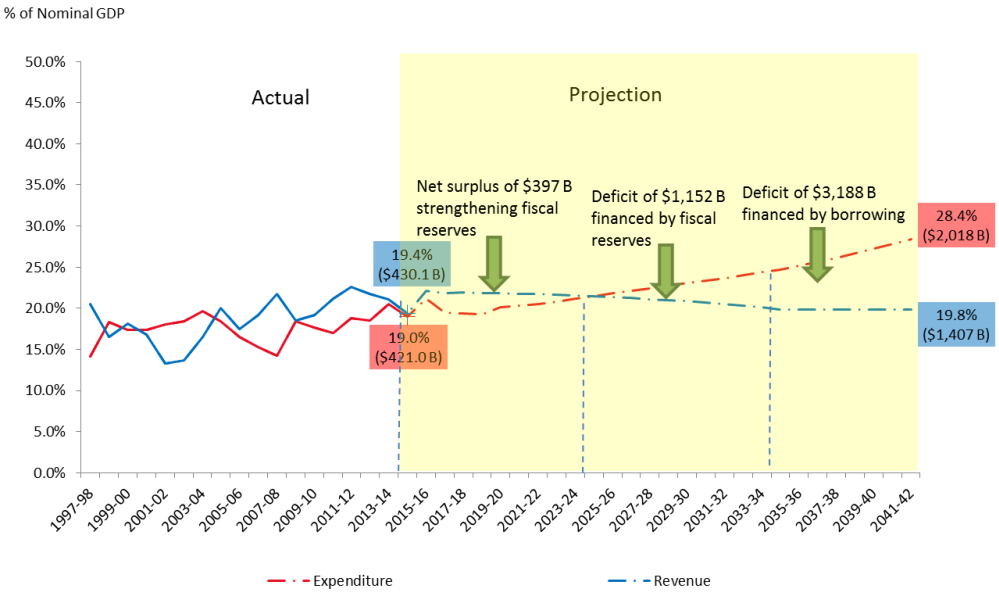
(c) **Living on borrowing** – upon exhaustion of fiscal reserves, the Government would have no choice but to borrow to make ends meet. Debt liabilities could escalate quickly.

*Fiscal outlook: Base Case, **No Service Enhancement** Scenario*

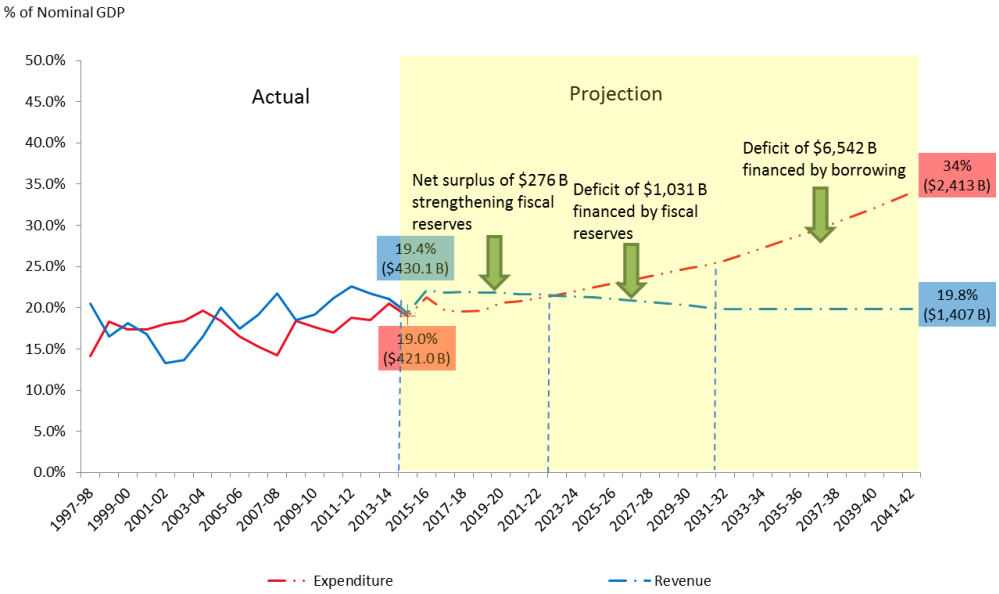


*Fiscal outlook: Base Case, **Service Enhancement** Scenarios*

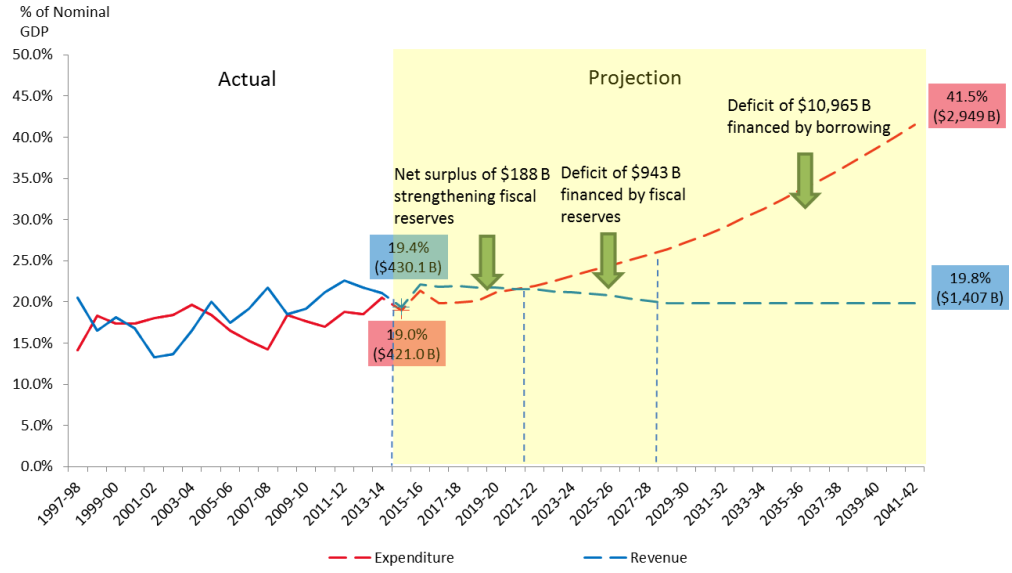
@1% per annum



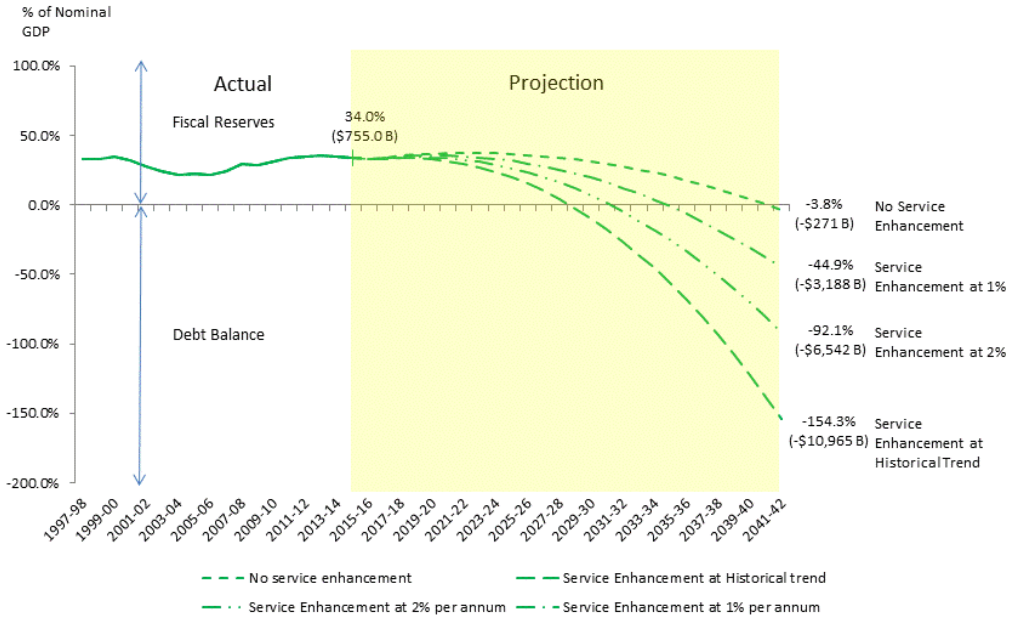
@2% per annum



@ Historical Trend



Projection on fiscal reserves / debt balance under Base Case



43. **The scale of the structural deficit could be serious**. Except for the No Service Enhancement Scenario under the High Case, a structural deficit is projected to surface within a decade or two under all other scenarios. The fiscal gap by 2041-42 could range from 4.1% of nominal GDP under the Base Case with No Service Enhancement Scenario to between 14.8% and 30.6% of nominal

GDP under the Shock Case with Service Enhancement Scenarios. Fiscal reserves could be depleted within another decade after the onset of structural deficit.

44. If a structural deficit were to be avoided, Hong Kong would need a real GDP trend growth of 3.1% per annum under the No Service Enhancement Scenario, or growths of 3.6%, 4.4% or 5.4% per annum under the Service Enhancement Scenarios, instead of the 2.8% per annum assumed under the Base Case. Since Hong Kong has moved away from a high-growth developing economy in the 1970s and 1980s and is now a mature economy, and since the labour force is expected to dwindle as from 2018 under an ageing population and existing population policies, a trend GDP growth of over 3% per annum is exceedingly hard to achieve under current policies. This is a clear wake-up call; there is no room for complacency.

45. The Working Group has made a conscious effort to avoid overstating expenditure requirements. The foregoing has **not taken into account the enormous fiscal pressure which the Housing Authority is under, and which might need to be shouldered in part by the Government.** Even under the 2013 commitment to produce an average of 20 000 public rental housing (PRH) and 5 000 Home Ownership Scheme units a year, the Housing Authority is projected to have a funding shortfall as from 2019-20 and the cumulative shortfall to 2041-42 could be **$490 billion** (assuming PRH rent could be raised 5% every two years) **or $130 billion** (assuming PRH rent could be raised 10% every two years). If the Housing Authority's shortfalls were deemed government obligations, the projection could involve an extra 0.3 to 1.5 percentage points of the nominal GDP in the years requiring Government's funding support under the No Service Enhancement Scenario. The surface of structural deficit and the depletion of the fiscal reserves could be advanced by three years.

46. Also, the projections have not taken into account the financial implications that could arise from policy initiatives under consultation or review, including those relating to kindergarten education, health protection scheme (except for the $50 billion set aside for 2015-16), etc.

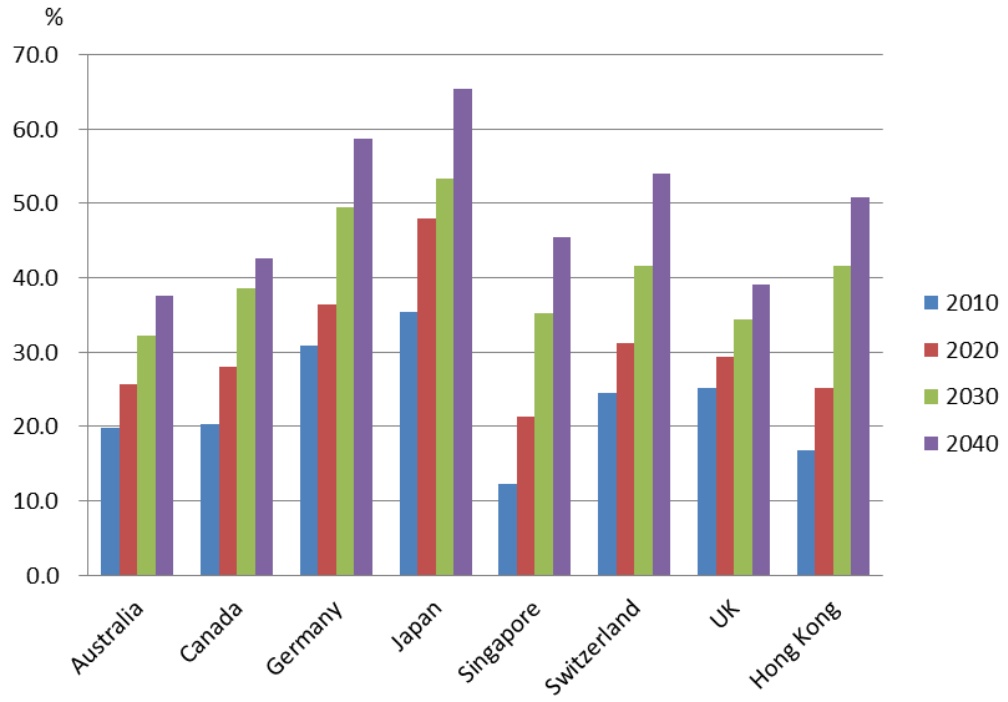
47. Long-term projections are not year-on-year forecasts. There are bound to be limitations. But transparency facilitates understanding. Projections under various cases and scenarios in the report can be found in the website of the Treasury Branch, Financial Services and the Treasury Bureau. The Working Group would not wish the inherent limitations of long-term projections to obscure a proper recognition of the fiscal problem ahead.

Fiscal Measures Adopted in Other Economies

48. The Working Group has chosen a sample of seven economies for review, focusing particularly on the budget measures they have adopted to consolidate their budgetary positions. These economies are Australia, Canada, Germany, Japan, Singapore, Switzerland and the United Kingdom. The Working Group has also made reference to the publications issued by the International Monetary Fund and the Organisation for Economic Co-operation and Development.

49. Population ageing of the selected economies, as illustrated below, poses pressures on their fiscal systems –

Projection on elderly dependency ratio of the seven selected economies and Hong Kong



Source: Other economies - United Nations Probabilistic Population Projections
Singapore - Department of Statistics, Singapore Government

50. In the face of fiscal problems, many of these economies have introduced measures to ensure fiscal sustainability. These include introducing savings schemes, enforcing or tightening fiscal disciplines, containing expenditure, reviewing operational efficiency, setting limits on debts, preserving revenue base and increasing taxes, etc.

Proposed Fiscal Measures

51. The Working Group has identified and analysed fiscal measures to address the longer term funding needs of Hong Kong. While it is important for the Government to continue promoting the growth of the economy, the key to resolving the anticipated structural deficit or reducing its quantum is to contain the growth of government expenditure, along with safeguarding the revenue base. The Working Group has the following suggestions –

(a) containing expenditure growth;
(b) preserving, stabilising and broadening the revenue base;
(c) saving for the future;
(d) segregating and balancing the Operating and Capital Accounts;
(e) making clear what the fiscal reserves cover;
(f) stepping up the management of the Government's assets; and
(g) sustaining the financial health of the Housing Authority.

To prevent or delay the structural deficit problem, an appropriate mix of fiscal measures should be drawn up as soon as practicable for implementation at the right timing. The above suggestions are not mutually exclusive. Nor would any single one of them suffice.

(A) Containing expenditure growth

52. The Working Group sees the need to contain overall government expenditure growth within the forecast nominal GDP growth rates and to **keep the public expenditure at or around 20% of GDP**. In practical terms, this would entail a much smaller year-on-year growth rate than that in recent years; it would imply a lower or even negative real growth through cutting back existing services, and offsetting extraordinary expenditure growth in one policy area group by reduction within or in other areas. **Fiscal sustainability should be assessed for major recurrent spending initiatives** exceeding $100 million. The public service should remain lean

and efficient. **Fundamental expenditure reviews** should be undertaken for key spending bureaux and departments and subvented bodies. Service-wide economy drive and re-engineering and re-prioritisation drives should also be launched periodically. The **capital works programme should be managed** and moderated to grow more in line with nominal GDP.

(B) Preserving, stabilising and broadening the revenue base

53. The Working Group **recommends** that the main priority on the revenue side is to **preserve, stabilise and broaden the revenue base**. Specifically, the Government should avoid excessive reliance on direct taxation, step up tax enforcement, and reinforce the "cost recovery", "user pays" and "polluter pays" principles, and should enhance the tax regime to ensure that the tax structure can meet the long-term needs of Hong Kong and the fiscal pressures in the long run.

(C) Saving for the future

54. The Working Group **recommends** that **a savings scheme be established** as soon as practicable; this may be achieved by "freezing" the Land Fund and creating a notional "Future Fund" held against the Land Fund for this purpose. It should also not be accounted for as part of the fiscal reserves; it will be presented separately. Other than the initial endowment and investment returns on the Land Fund, the Government would need to consider how occasional top-ups can be offered for the Future Fund, and under what circumstances the Future Fund would be withdrawn. The Working Group believes that the Government would need to consult stakeholders on the exact mode of operation of the Future Fund.

(D) Segregating and balancing the Operating and Capital Accounts

55. The Working Group **recommends** that –

(a) **operating expenditure should not exceed 90% of the operating revenue**. Surpluses in the Operating Account may help meet shortfalls in the Capital Account or may be retained as reserve, rather than being spent right away; and

(b) the **Capital Account** (primarily funding capital works expenditure) should be **segregated from** the **Operating Account** and should strive to stay within the limits of the capital revenue (primarily revenue from land disposals). Surpluses from the Capital Account, typically one-off in nature, say arising from land sale, should **not** be used to fund recurrent initiatives under the Operating Account. **Loan financing** may be considered for meeting **project-based or short-term shortfalls** in the Capital Account, subject to the cost of borrowing not exceeding the expected earnings on the fiscal reserves otherwise drawn down, and the government debt level **not exceeding 5% of GDP**. The proposed cap applies to project-based or short-term loan financing for the Capital Account.

(E) Making clear what the fiscal reserves cover

56. Of the $745.9 billion estimated fiscal reserves as at end March 2014, only the portion held in the General Revenue Account (about $394 billion) is for meeting the day-to-day cash flow requirements of the Government; the balance held in the Land Fund (about $220 billion) has **no authorised use**; and the balances held in various Funds (e.g. Capital Works Reserve Fund, Innovation and Technology Fund, Loan Fund, Lotteries Fund) set up by Resolutions of the Legislative Council (about $132 billion) **have their respective designated use**. The Working Group **recommends** that this should be made clear and explained to the general public.

(F) Stepping up the management of the Government's assets

57. The Working Group **recommends** that the Government should **manage its asset portfolio more proactively**, through asset disposal or securitization for instance, and use the financial return to help reduce the fiscal pressures in the coming decades. The Working Group also **recommends** that the Government should ensure that government business enterprises are managed and operated efficiently and cost-effectively.

(G) Sustaining the financial health of the Housing Authority

58. The Working Group **recommends** that the Government should negotiate with the Housing Authority with a view to reducing the budgetary pressure on government finances in the long run. The Working Group believes that the Government should review with the Housing Authority its business model so as to meet its statutory requirement to make ends meet on a recurrent basis.

Planning for the Future

59. As Hong Kong gears up for tougher times ahead, the Government and the community must pay heed to the pressures on fiscal sustainability and must act in a responsible manner. The Working Group sees a need for fiscal discipline to be tightened. It does **not** mean stalling all new and worthy initiatives – because the economy is still projected to grow, albeit at a slower pace. But it does require greater regard to long-term affordability, and readiness to accept offsetting savings. It requires collective effort to preserve, stabilise and where possible broaden the revenue base, and to safeguard the cost-recovery principle. It also requires advance planning, so that the Government can start saving for the future. Community expectations will need to be managed.

60. The Working Group appreciates that the scale of the structural deficit problem is enormous and the problem is too big for the Government alone to resolve. In considering options ahead, the Working Group sees a need for the Government to consider options for partnerships with the private sector, as in the case of public private partnership in capital projects and healthcare reform.

61. The Working Group would not want to paint an overly gloomy fiscal outlook for Hong Kong. But there can be no denial that Hong Kong can ill afford to continue increasing spending beyond the pace of economic growth and revenue. We have to act and behave as a mature economy. The Government and the community would need to acknowledge the problem ahead and adjust. If the Government takes serious and early action to realign the growth of expenditure with that of government revenue and of the economy, the Working Group is reasonably optimistic that the structural gap in public finances can be narrowed and the onset of a structural deficit deferred. Fiscal consolidation would go a long way to preserving the longer term stability, competitiveness and creditworthiness of Hong Kong as an international financial centre.

Introduction

1. There is general recognition that the fiscal health of Hong Kong is in good shape, that the Government should spend more to keep pace with community aspirations, and that population ageing would be a drag on productivity and economic growth. But there is less appreciation on why the Government should be concerned at all about the public finances in the long term, how serious the problem – if exists, could be and what should be done to relieve the burden of the taxpayers and the community at large in the coming decade or two. With fiscal reserves reaching some $750 billion, with the Mainland offering invaluable opportunities for Hong Kong as hinterland, do we really have a fiscal problem in the long run?

2. As announced in the 2013-14 Budget Speech, the Financial Secretary appointed the Working Group on Long-Term Fiscal Planning in June 2013 to explore ways for our public finances to cope with the ageing population and the Government's other long-term commitments. Specifically, the Working Group is tasked to –

   (a) review projections of the Government's long-term fiscal position up to around 2041, having regard to forecasts of demographic trends, economic growth and other major funding liabilities under prevailing policies;

   (b) review measures adopted by other economies in coping with longer term challenges on public finances; and

   (c) identify and analyse options consistent with Articles 107 and 108 of the Basic Law to address the longer term funding needs of Hong Kong.

   The membership is at **Annex A**.

3. The Working Group first performed a health check on the current state of Hong Kong's public finances and the challenges ahead in Chapter 1. The Working Group then examined projections under different spending scenarios (with demographic change and different degrees of service enhancement being the key variables) and different economic growth and price assumptions (with Base Case, supplemented by sensitivity analyses on High, Low and Shock Cases as set out in Chapter 2). The projections will facilitate a proper recognition of the indicative nature and scale of the fiscal problems that may surface in the coming decade or two.

4. The projections confirm that it would **not** be financially sustainable for the Government to keep increasing expenditure at a rate faster than the increase in government revenue or the growth of the economy. The impact of demographic and price changes alone is projected to give rise to a structural budgetary problem in about 15 years' time, even assuming no change to existing policies throughout the projection period to 2041-42. Under three other scenarios where services on education, social welfare and health are assumed to be enhanced at different rates between 1% to about 3% per annum (the latter following historical trends), a structural deficit would surface within a decade or two - whether under the Base Case or any of the sensitivity analysis. The fiscal reserves could be depleted another decade or so thereafter.

5. The Working Group has made a conscious effort to avoid overstating the expenditure requirements or understating the revenue projections. The Working Group would not wish the inherent limitations of long-term projections being posed as excuse for obscuring a proper recognition of the issues involved. Chapters 3 and 4 set out the expenditure and revenue projections. Chapter 5 consolidates them to offer an overview of the fiscal outlook.

6. Population ageing is a common phenomenon and there is a lot to learn from the visionary and early actions adopted by some governments to cope with their known fiscal challenges. Remedial measures to reinstate budget balances, impose tough expenditure constraints, introduce debt brakes, etc. are rather prevalent too. The Working Group has studied the measures adopted by the governments of Australia, Canada, Germany, Japan, Singapore, Switzerland and the United Kingdom to tackle the issues of ageing and fiscal pressures. The findings are in Chapter 6.

7. The most challenging yet meaningful task of the Working Group is to identify and analyse options and tender advice to the Financial Secretary in the light of the fiscal pressures projected and experience learnt from other economies. The Working Group holds strongly that resolute action is needed to contain the growth of overall government expenditure; preserve, stabilise and broaden revenue streams; and resist short term or cyclical windfalls being diverted to fund new recurrent initiatives. The balance between short-term and longer-term needs of the Government and the community will need to be recalibrated. The Government should start saving for the future. The recommendations are in Chapter 7.

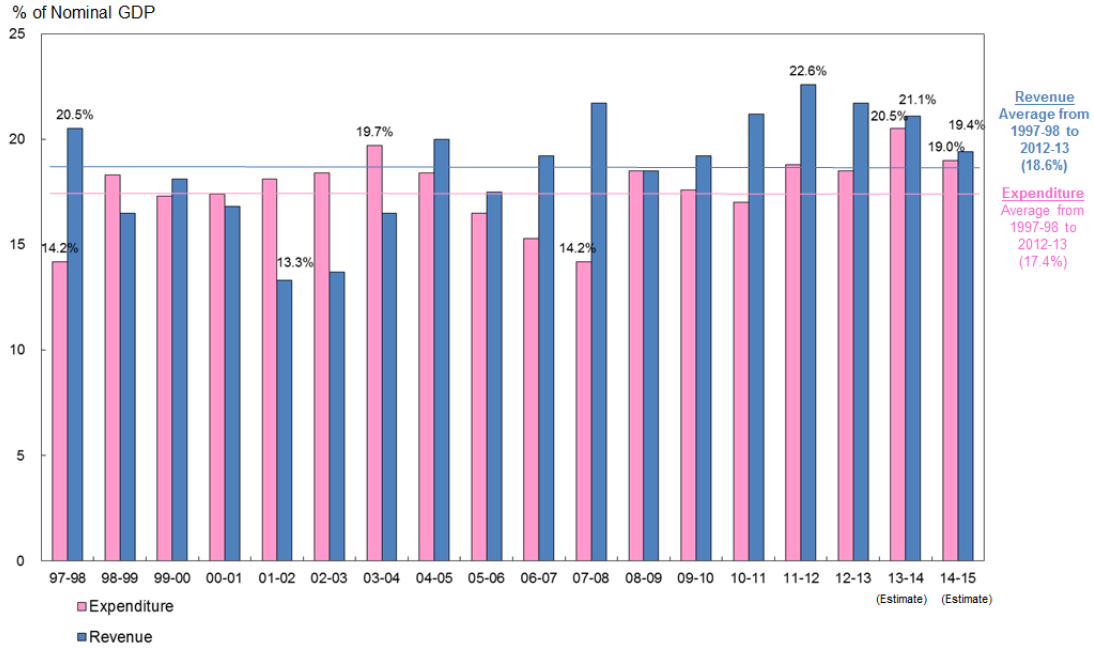
Chapter 1 – Fiscal Health Check

Overview

1.1 The current state of Hong Kong's public finances is healthy. Since 1997-98 –

(a) we have adhered to the "*principle of keeping expenditure within the limits of revenues*", as required under Article 107 of the Basic Law (BL 107). Government expenditure was on average 17.4%[1] of the Gross Domestic Product (GDP) from 1997-98 to 2012-13, and government revenue was 18.6%[2] *(Chart 1.1)*;

Chart 1.1 – Government revenue and expenditure since 1997-98

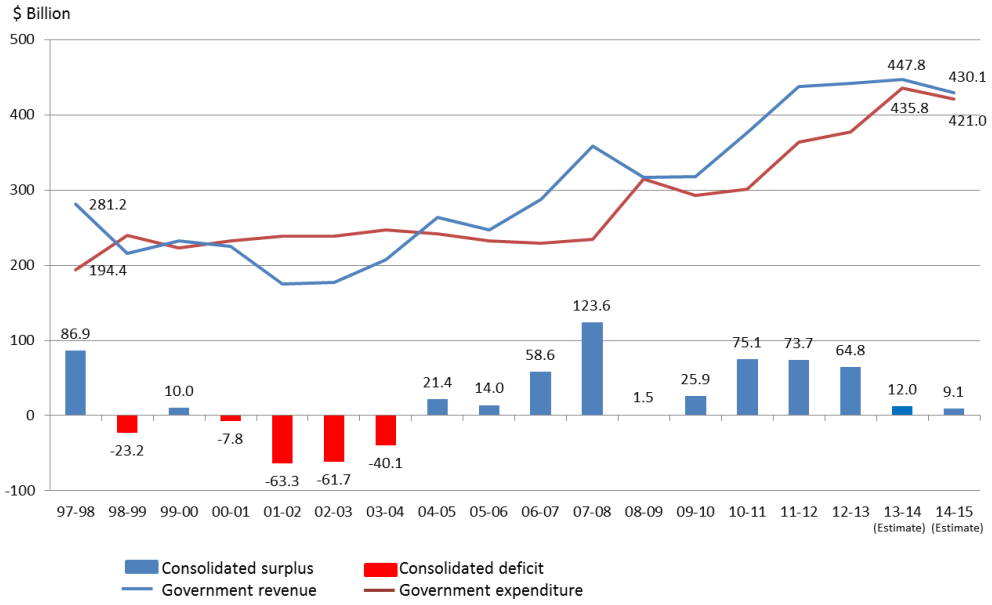


[1] Taking into account the expenditure of the Housing Authority and Trading Funds, public expenditure was on average 19.3% of GDP. Unless otherwise stated, this report deals with government expenditure only which also includes repayment of government bonds and notes in 2006-07, 2008-09 and 2009-10.

[2] Including proceeds received from the issuance of government bonds and notes in 2004-05.

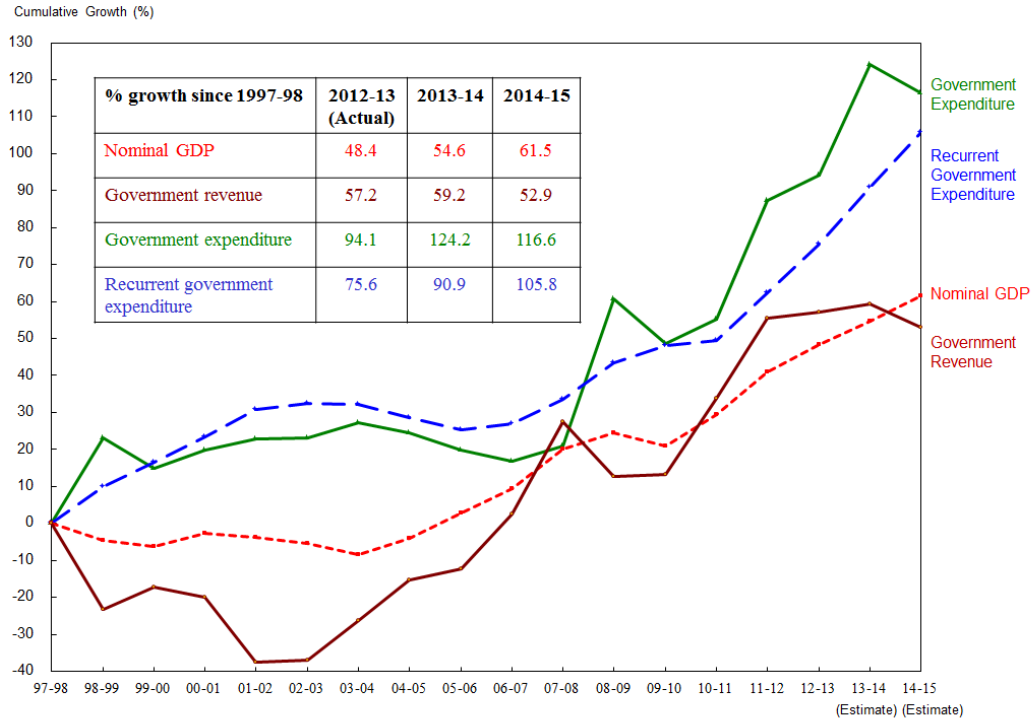
(b) we have achieved 11 years of budget surplus and five years of deficit from 1997-98 to 2012-13 *(Chart 1.2)*, again in line with the BL 107 requirement for the Hong Kong Special Administrative Region to "*strive to achieve fiscal balance, avoid deficits*"; and

Chart 1.2 – Financial highlights since 1997-98



(c) government expenditure has grown on a cumulative basis to 2012-13 by 94.1% while the corresponding growth in government revenue and GDP was 57.2% and 48.4% respectively *(Chart 1.3)*. Recognising the BL 107 requirement for the Hong Kong Special Administrative Region to "*keep the budget commensurate with the growth rate of its gross domestic product*", the Government will continue to closely monitor the rate of growth in government expenditure.

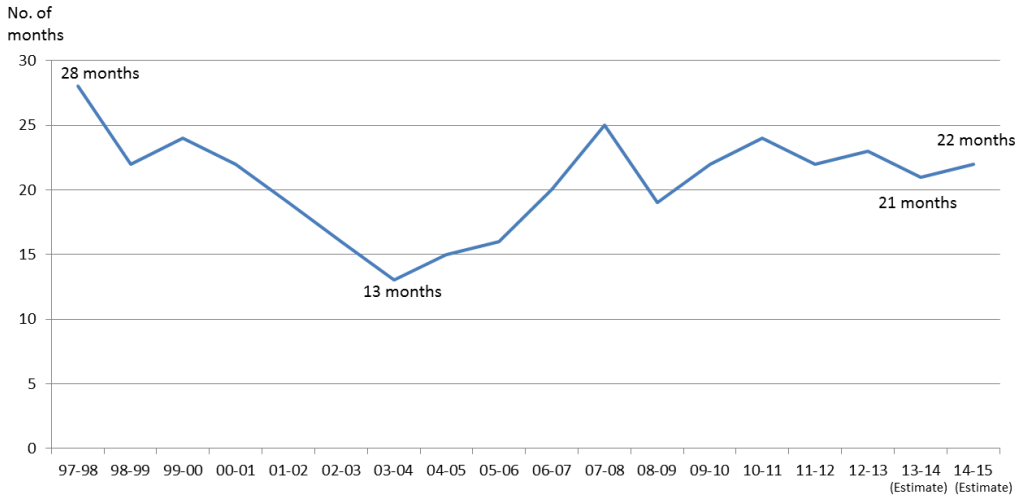
Chart 1.3 – Growth since 1997-98



% growth since 1997-98	2012-13 (Actual)	2013-14	2014-15
Nominal GDP	48.4	54.6	61.5
Government revenue	57.2	59.2	52.9
Government expenditure	94.1	124.2	116.6
Recurrent government expenditure	75.6	90.9	105.8

1.2 The fiscal reserves of Hong Kong are estimated to reach $745.9 billion as at the end of 2013-14. Though high in absolute dollar terms, the balance of the fiscal reserves is estimated to be about 21 months of government expenditure. The level is just about mid-way between the 13-month-equivalent trough by end 2003-04 and the 28-month-equivalent peak by end 1997-98.

Chart 1.4 – Fiscal reserves in terms of number of months of government expenditure



1.3 The fiscal reserves represent all the cash balances held by the Government in various accounts. They are needed to meet the day-to-day cash requirements for all bureaux/departments and subvented bodies, serve as a cushion in economic downturns, generate investment returns, help stabilise the Hong Kong dollar, and help meet the longer term financial commitments of the Government.

1.4 With the Government running successive years of budget surplus since 2004-05 and with the fiscal reserves reaching some $750 billion, is there real cause for concern, even though the Government has been spending faster than it earns in recent years? With so many pressing demands from different sectors of the community, should short-term immediate needs not prevail over medium or long-term concerns?

1.5 The Working Group sees a need to rise above immediate concerns and to also pay greater regard to longer term affordability and fiscal sustainability. The following indicators should shed light on the need for caution and the exercise of fiscal prudence –

(a) **Our society is ageing fast**. This exerts pressure on government expenditure and undermines economic and revenue growth. The proportion of elders at and above 65 is forecast to increase from 13.7% of the total population in 2012 to 30.2% in 2041. During the same period, the working population aged between 15 and 64 will decrease from 74.9% to 60.8% of the total population. This means that by 2041, every two persons of working age will have to support one dependent elderly person, instead of five supporting one today. Coping with demographic changes requires substantial investments and financial commitments. At the same time, economic growth potential will be undermined as the labour force dwindles, thereby also reducing revenue growth in the years to come.

(b) **Government has been spending faster than it earns in recent years**. During the period from 1997-98 to 2012-13, government expenditure has grown on a cumulative basis by 94.1% while the corresponding growth in government revenue was 57.2%.

(c) **Government expenditure is inelastic**. Over 10% of the Government's recurrent expenditure relates to social security payments and another 60% relates to personal emoluments and related expenditure for the Government (30%) and

subvented sector (30%). It is difficult to scale back on these expenditure. Experience during the economic downturn in the early 2000s shows clearly that arresting the growth in government expenditure required strenuous efforts and tough measures like downsizing the Government through voluntary retirement, imposing successive annual pay cuts, reducing subventions, and imposing government-wide austerity programmes, etc.

(d) **Government revenue is narrow-based and volatile**. As *Chart 1.3* illustrates, government revenue could hit a far lower trough during an economic downturn and a far higher peak during an economic boom, compared with the ebbs and flows of the economy. Besides, our revenue sources are not diversified. The Government is increasingly reliant on profits tax, salaries tax and land premium to finance its expenditure.

(e) **Fiscal reserves can be depleted faster than one might expect**. In the six years from 1998-99, we used up some $200 billion of the fiscal reserves. We currently have a list of known commitments. Outstanding commitments from capital works amount to $340 billion. Statutory pension liabilities amount to $700 billion. Debt guarantees stand at $80 billion. Before committing to new recurrent initiatives, there is a clear need for the Government and the community to consider long-term affordability. How best to optimise the use of the fiscal reserves is an issue that merits serious consideration. We need to take early and pragmatic actions to carry out a fiscal consolidation process with a view to providing a healthy and sustainable fiscal system for our next generation.

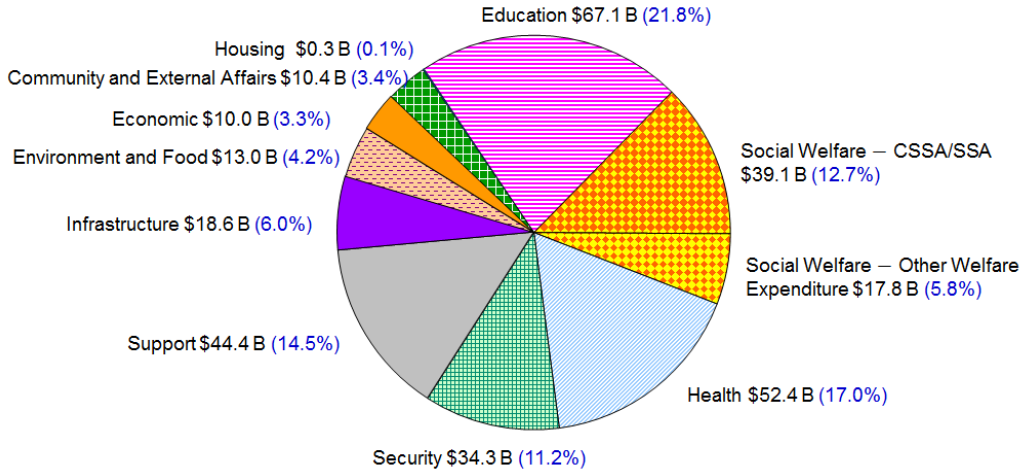
1.6 The following sections will analyse in greater detail the current state of the Government's expenditure, revenue and fiscal balances, alongside the challenges ahead.

Government expenditure

Recurrent expenditure

1.7 Total government expenditure is estimated to be $421 billion (including repayment of $9.8 billion in bonds and notes) for 2014-15. Recurrent government expenditure accounts for about 73% ($307.4 billion) and is broken down as follows –

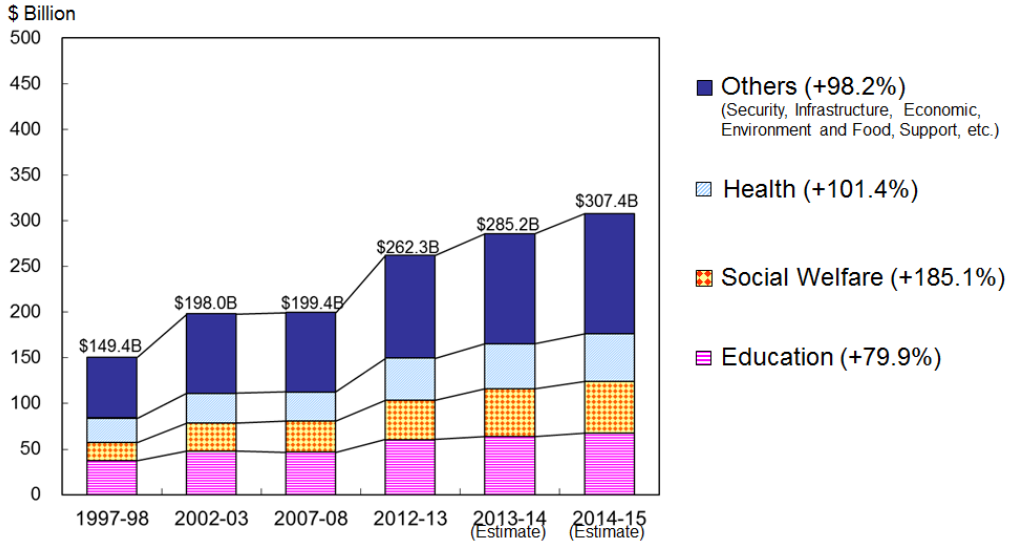
Chart 1.5 – Estimated recurrent expenditure for 2014-15 ($307.4 billion)



1.8 As is evident, education, social welfare and health are the key policy area groups that together consume about 60% of Government's total recurrent expenditure.

1.9 On the basis of the 2014-15 original estimates, the Government's recurrent expenditure would have doubled since 1997-98. As *Chart 1.6* illustrates, social welfare is forecast to record a cumulative increase of over 180%, health over 100% and education some 80% since 1997-98.

Chart 1.6 – Recurrent expenditure growth since 1997-98



Challenges

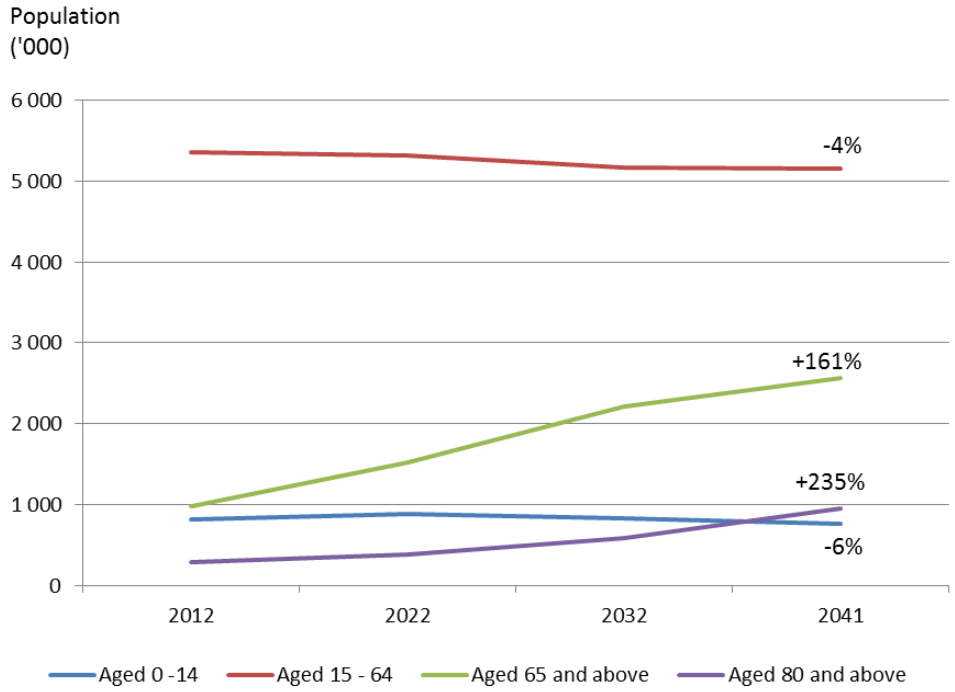
1.10 Despite rapid increases in expenditure to date, pressure for the Government to incur more resources to improve public services and to meet the rising aspirations of the community will continue to mount. Expectations are hard to be managed within the resources available.

1.11 Meanwhile, longer term fiscal pressures on health and social welfare spending given an ageing population must not be overlooked.

1.12 Between 2012 and 2041 –

(a) the **total population** in Hong Kong is forecast to increase by about 19%, from 7.1 million to 8.5 million;

Chart 1.7 – Population changes by age groups



(b) the age group of 65 and above is forecast to increase by 1.6 times, from 13.7% of the total population (980 000) to 30.2% (2.56 million). Within this group, those aged 80 and above is forecast to increase by 2.3 times, from 4.0% of the total population (286 000) to 11.3% (957 000);

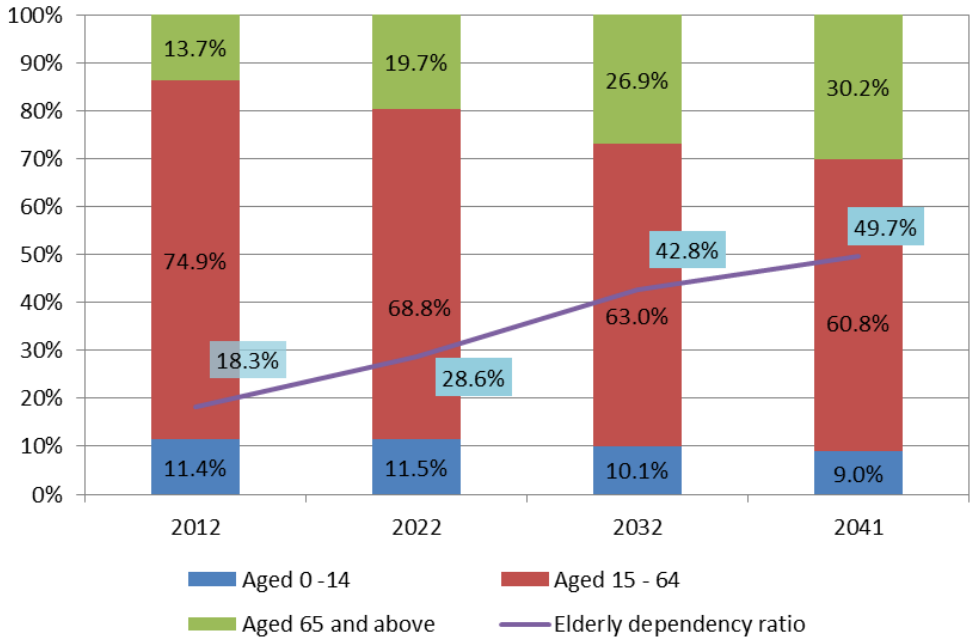
(c) the age group between 15 and 64 is forecast to drop by 4%, from 74.9% of the total population to 60.8%;

(d) the age group up to 14 is forecast to drop by 6%, from 11.4% of the total population to 9%;

(e) the median age is forecast to increase from 42.8 to 51.8; and

(f) the life expectancy for male is forecast to grow from 80.7 to 84.4 and that for female from 86.4 to 90.8.

Chart 1.8 – Proportion of different age groups to total population and elderly dependency ratio



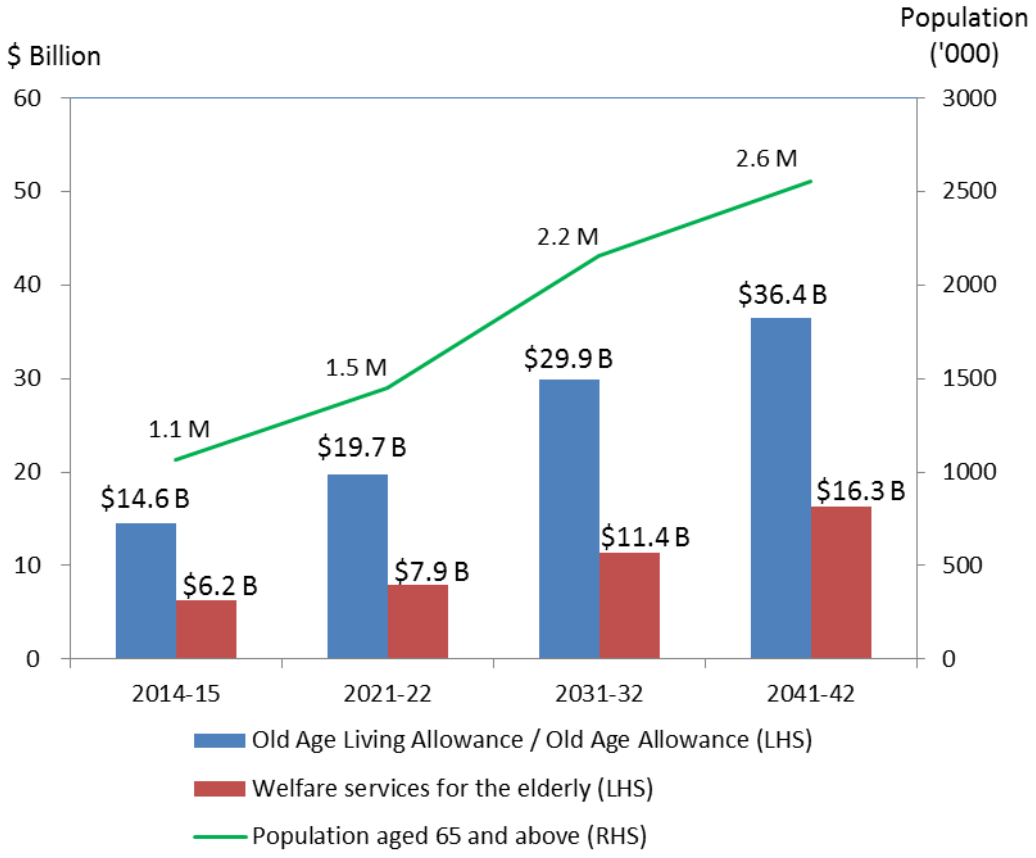
1.13 With the population ageing, the size of the labour force is set to decline, posing a threat, if not drag, on economic growth in the longer term. Resources that can be set aside for new or improved services would logically be constrained.

1.14 At the same time, an expanding and ageing population will put pressure on social welfare and health services expenditure, even if we assume no inflation and no service enhancement over time. By way of illustration, during the period from 2014-15 to 2041-42 –

(a) expenditure on Old Age Living Allowance and Old Age Allowance would increase from $14.6 billion by 1.5 times to $36.4 billion a year;

(b) expenditure on welfare services for the elderly would increase from $6.2 billion by 1.6 times to $16.3 billion a year;

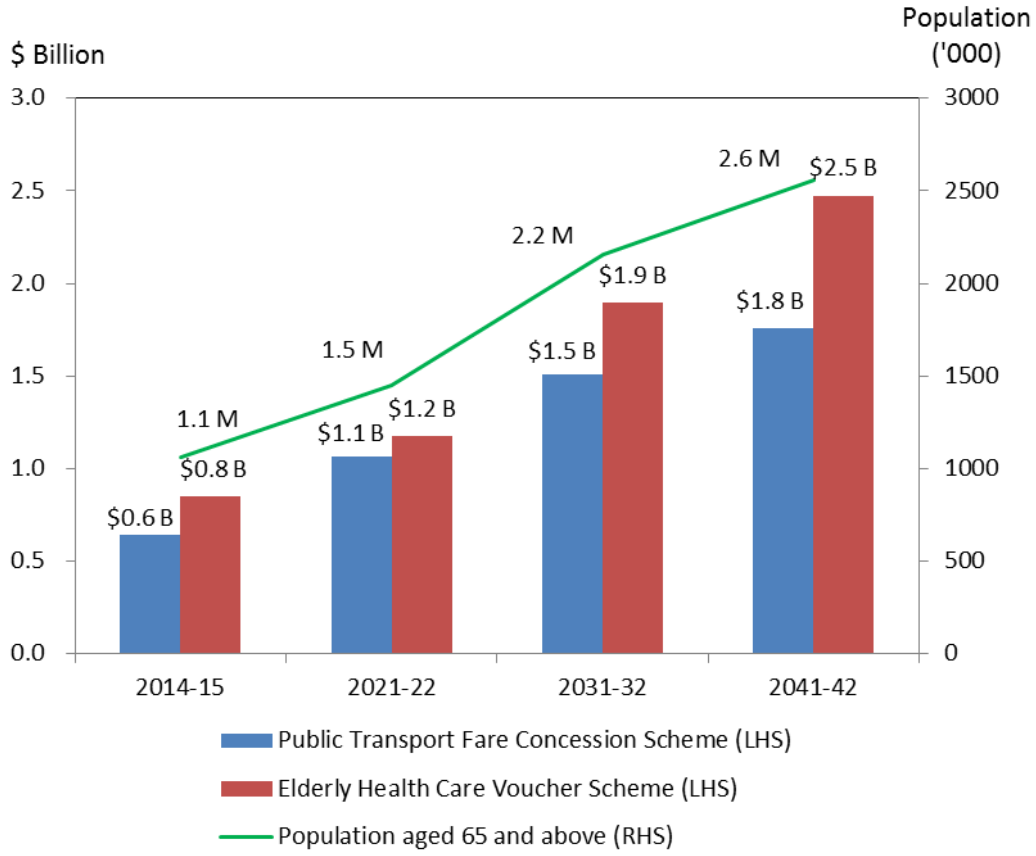
Chart 1.9 – Annual expenditure on Old Age Living Allowance / Old Age Allowance and welfare services for the elderly (in 2013 constant prices)



(c) expenditure on the Public Transport Fare Concession Scheme for the Elderly and Eligible Persons with Disabilities would triple from $0.6 billion to $1.8 billion a year;

(d) expenditure on the Elderly Health Care Voucher Scheme would more than triple from $0.8 billion to $2.5 billion a year; and

Chart 1.10 – Annual expenditure on Public Transport Fare Concession Scheme and Elderly Health Care Voucher Scheme (in 2013 constant prices)



(e) as the elderly has greater demand for healthcare services (e.g. the hospitalisation rate for the elderly is higher and their average length of stay in hospital is longer), population ageing would drive up the recurrent subvention requirements of the Hospital Authority from $47.2 billion by 81% to $85.6 billion a year.

Chart 1.11 – Hospitalisation rates by age group in 2012-13

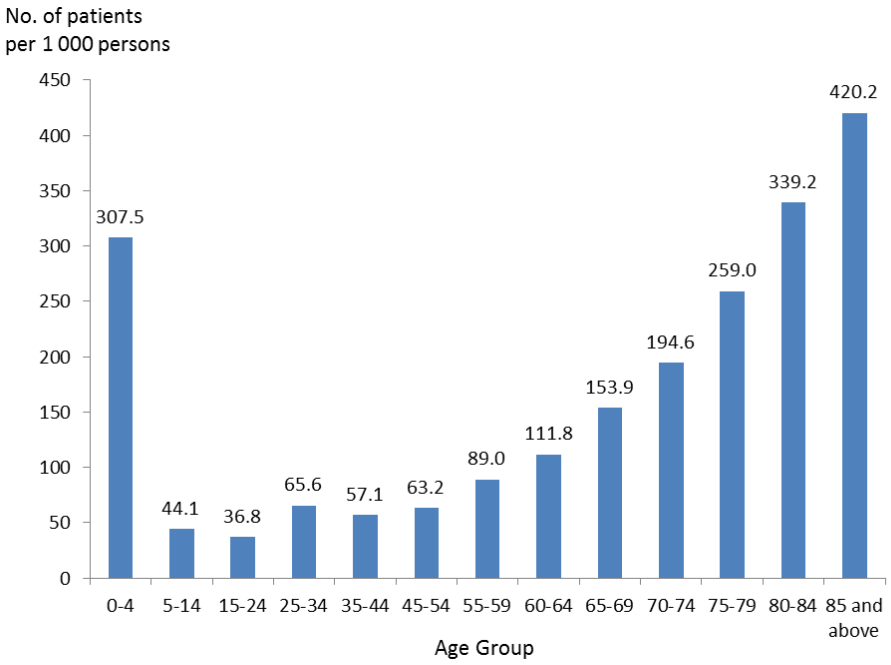


Chart 1.12 – Average length of stay (days) by age group in 2012-13

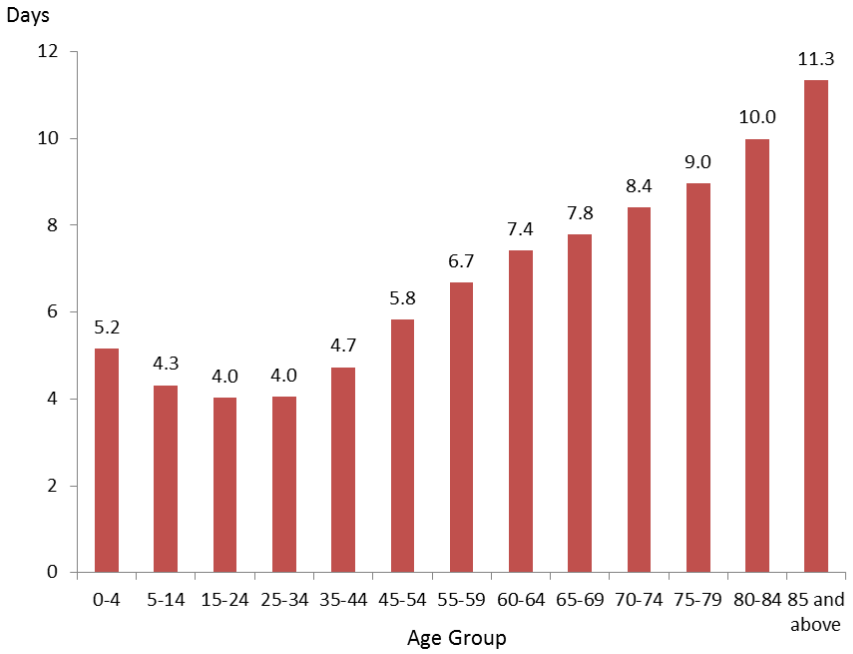
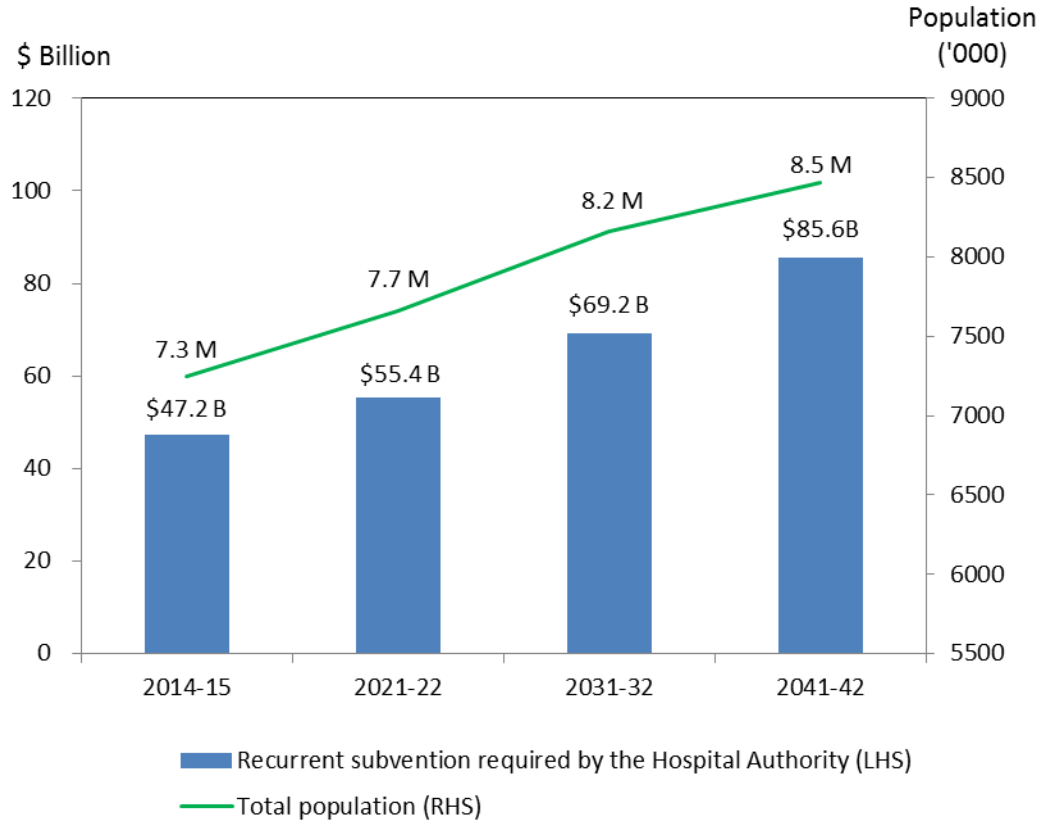


Chart 1.13 – Annual recurrent subvention required by the Hospital Authority (in 2013 constant prices)



1.15 Worth noting is also the fact that there are inherent inelasticities in government expenditure. Over 10% of the Government's recurrent expenditure relates to social security payments; another 30% relates to personal emoluments and related expenditure for the Government and 30% relates to payouts of similar nature for the subvented sector. As revealed by the past trends, these payments tend to go up more frequently and quickly than going down.

Capital expenditure

1.16 Government investment in infrastructure has been on the rise. The Finance Committee of the Legislative Council approved 137 projects under the Capital Works Reserve Fund (CWRF) with a total commitment of $281 billion in the last three legislative sessions from 2010-11 to 2012-13. It is estimated that there will be over 400 approved works projects (excluding minor works projects funded under CWRF block allocations) as at end March 2014 and the total unfunded commitment of these approved projects is some $340 billion.

1.17 The cash flow requirement of capital works projects under the CWRF is about $71 billion for 2014-15, higher than the average of some $60 billion for the preceding five years. The cash flow is expected to be on the rise given the peaking of the construction programme for many railway infrastructure projects, cross-boundary facilities and other mega projects from 2016 to 2018.

1.18 Other than projects under the CWRF, there are social welfare related works projects funded under the Lotteries Fund. Taken together, these CWRF and Lotteries Fund works projects are estimated to have a substantial cash flow requirement of some 3.2% of GDP in 2014-15.

1.19 The Government's accounts are distinct from that of the Housing Authority which is a statutory body established under the Housing Ordinance (Cap. 283). Although it is the requirements of the Housing Authority to balance its recurrent expenditure on its estates, the Government will have to support the public housing programme where necessary. The public housing production programme of the Housing Authority is too substantial to be overlooked.

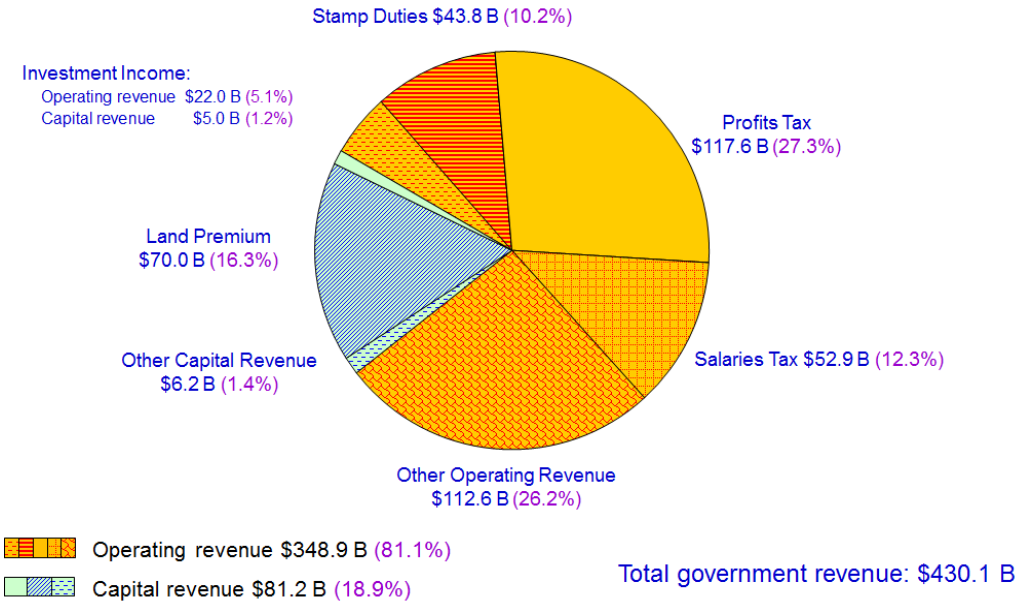
Challenges

1.20 The cash flow requirements of the Government's capital works programme, along with those under the Lotteries Fund, are reaching record peak levels. Whether the construction sector has capacity and resources enough to cope with the works programme is an issue that needs to be addressed. The Government's potential liability arising from supporting the public housing programme under the Housing Authority should also be kept in mind.

Government revenue

1.21 Total government revenue is estimated to be $430.1 billion for 2014-15, broken down as follows –

Chart 1.14 – Estimated government revenue for 2014-15 ($430.1 billion)



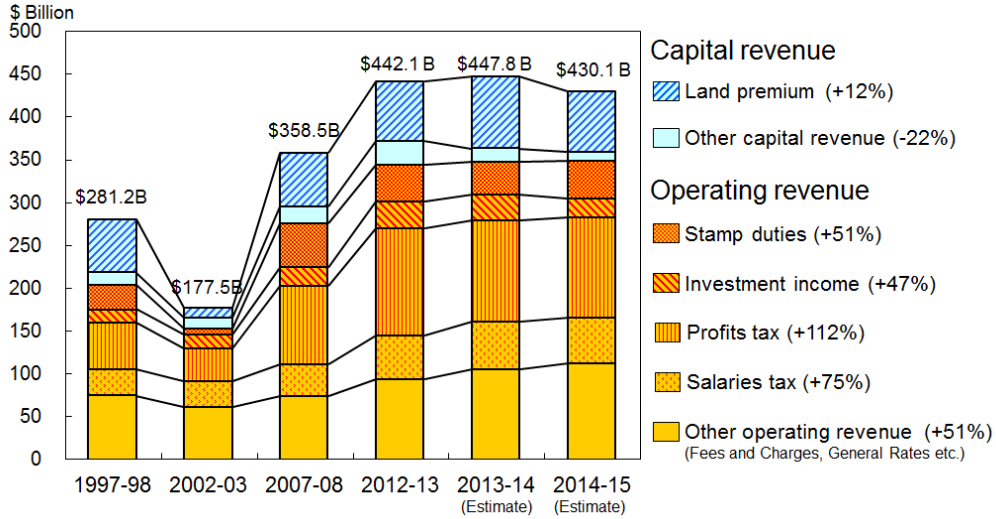
Note: Major items under Other Operating Revenue include General Rates, Bets and Sweeps Tax, Motor Vehicle Tax, and Fees and Charges.

1.22 Profits tax, salaries tax, land premium, stamp duties and investment income are the major revenue sources of the Government, contributing about 72% of the total estimated revenue in 2014-15.

1.23 For the **17 years from 1997-98**, government revenue would increase by a cumulative 52.9% from $281.2 billion in 1997-98 to $430.1 billion in 2014-15. This represents an average **growth of 2.5% per annum**, which is comparable to the average nominal GDP growth rate of 2.9% per annum during the same period. In other words, the growth in government revenue has been broadly commensurate with the growth of the economy in the long run when the effects of economic cycles smoothen out.

1.24 For the **five years from 2009-10**, total government revenue would grow at an average of **6.2% per annum**, from $318.4 billion in 2009-10 to $430.1 billion in 2014-15. This growth rate also follows closely the 6.0% per annum growth in nominal GDP for the same period.

Chart 1.15 – Government revenue growth since 1997-98



Challenges

1.25 Whilst government revenues have tended to fare better than expected in recent years, there are underlying concerns that our revenue sources are not diversified enough, that the tax base for profits and salaries tax remains narrow, that our key revenue sources also tend to be very volatile, and that an ageing population would add to the burden of the next generation of taxpayers and the community at large.

1.26 The Government is increasingly reliant on direct tax revenue (from profits tax, salaries tax and property tax), land premium and investment income to finance its expenditure. Contributions from more stable revenue items, such as fees and charges, have dropped. The following is a summary –

Chart 1.16 – Ratio between direct tax and indirect tax since 1997-98

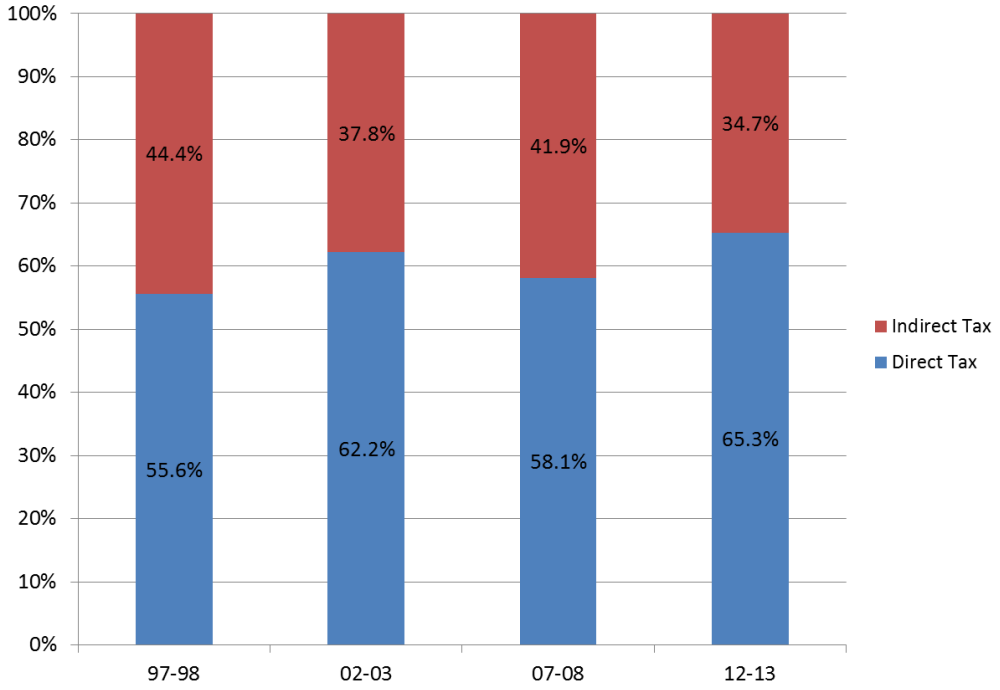
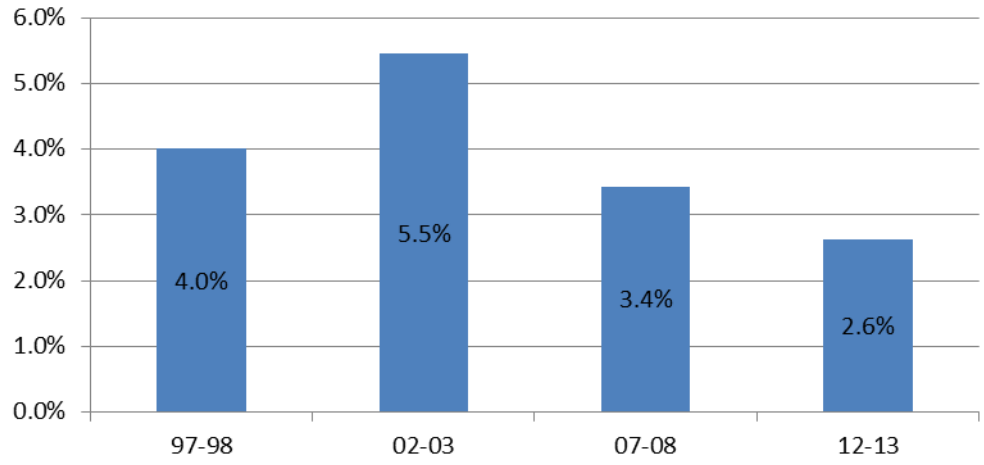


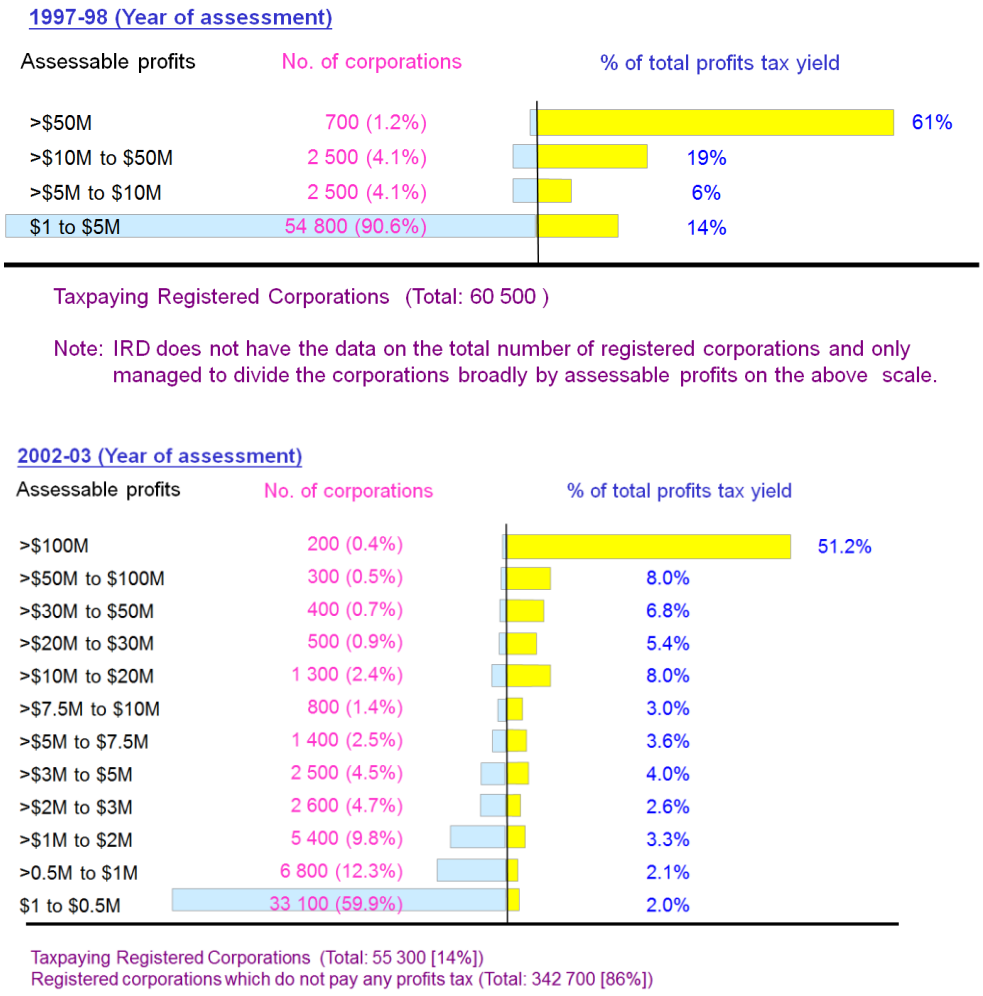
Chart 1.17 – Fees and charges as a percentage of total revenue since 1997-98



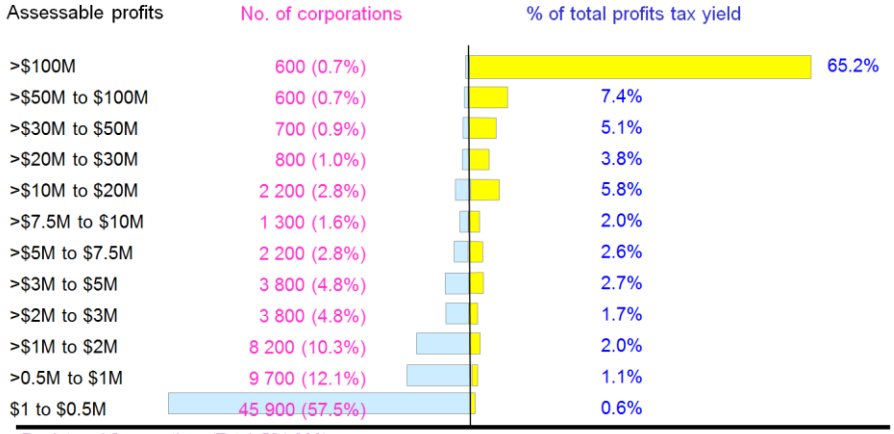
1.27 The tax base of profits tax has remained low, with only 11% of registered corporations (or 94 900) paying profits tax for the 2011-12 tax year, compared with 14% for 2007-08 and 2002-03. The top-paying 700 to 800 corporations contributed 64.4% of the overall profit tax revenue for the 2011-12 tax year, compared with 61% for the 1997-98 tax year.

1.28 As is, the profitability of these corporations would have a direct bearing on how much revenue the Government receives, and how much the Government can spend. To ensure the stability of government revenue, Government should avoid increasing or excessive reliance on the top 1% of the registered corporations.

Chart 1.18 – Distribution of profits taxpayers for the 1997-98 2002-03, 2007-08 and 2011-12 tax years

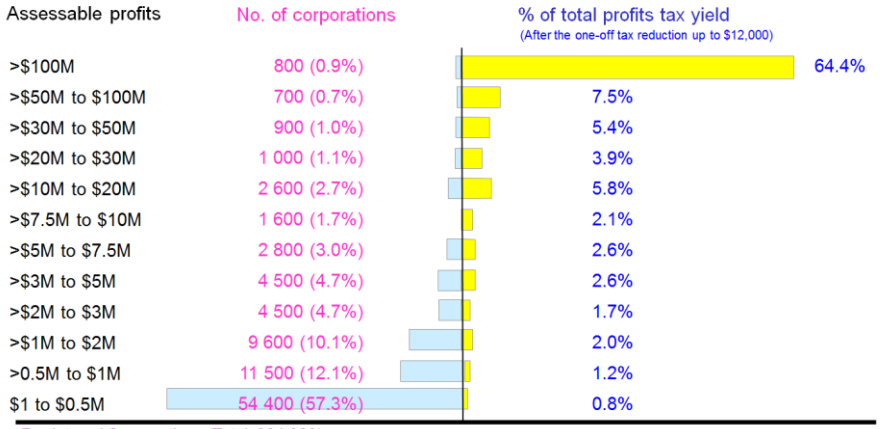


2007-08 (Year of assessment)



Registered Corporations (Total: 581 000)
Taxpaying Registered Corporations (Total: 79 800 [14%])
Registered corporations which do not pay any profits tax (Total: 501 200 [86%])

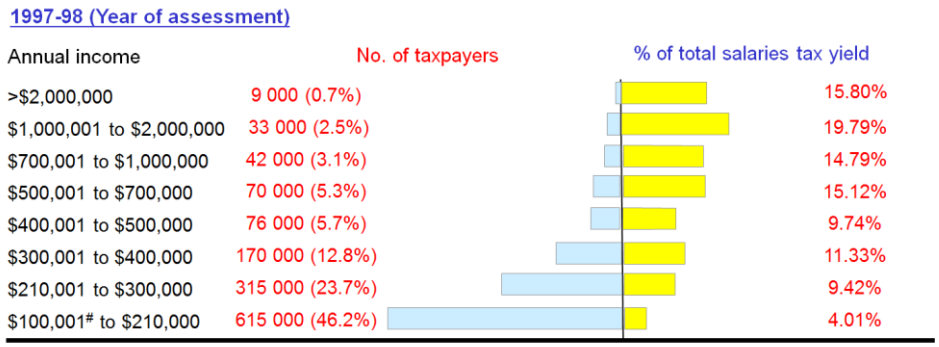
2011-12 (Year of assessment)



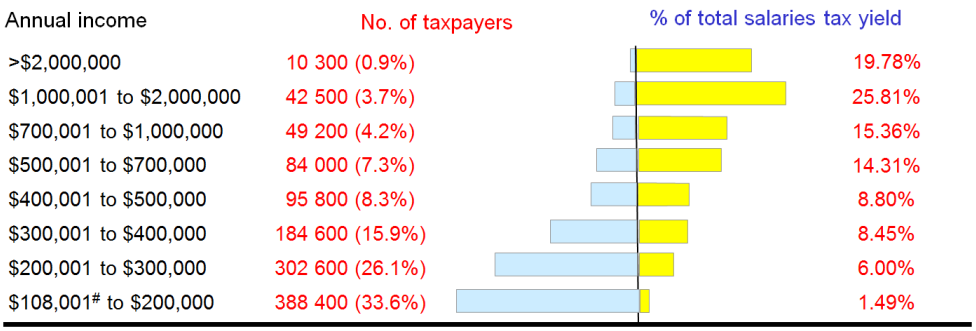
Registered Corporations (Total: 864 000)
Taxpaying Registered Corporations (Total: 94 900 [11%])
Registered corporations which do not pay any profits tax (Total: 769 100 [89%])

1.29 As for salaries tax, only 45% of the working population paid salaries tax for the 2011-12 tax year. Reliance on the high-income individuals is also on the rise. In 2011-12, the top 200 000 salaries taxpayers contributed 81.7% of the salaries tax; in 1997-98, they contributed 71.6%.

Chart 1.19 – Distribution of salaries taxpayers for the 1997-98. 2002-03, 2007-08 and 2011-12 tax years



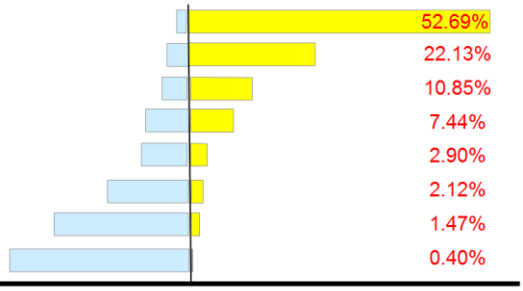
Working population (3 162 800)
Taxpayers (1 330 000 [42.1%])
Non-taxpayers (1 832 800 [57.9%])
The basic allowance for individuals in the 1997-98 year of assessment is $100,000



Working population (3 219 500)
Taxpayers (1 157 400 [35.9%])
Non-taxpayers (2 062 100 [64.1%])
The basic allowance for individuals in the 2002-03 year of assessment is $108,000

2007-08 (Year of assessment)

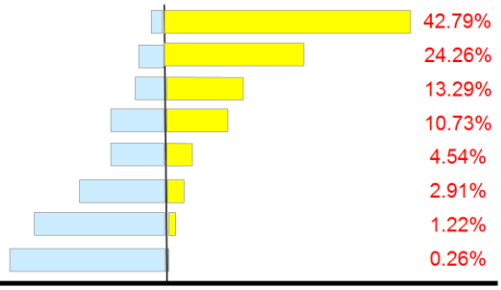
Annual income	No. of taxpayers	% of total salaries tax* yield
>$2,000,000	25 000 (1.7%)	52.69%
$1,000,001 to $2,000,000	56 000 (4.0%)	22.13%
$700,001 to $1,000,000	66 000 (4.6%)	10.85%
$500,001 to $700,000	112 000 (7.9%)	7.44%
$400,001 to $500,000	120 000 (8.5%)	2.90%
$300,001 to $400,000	213 000 (15.1%)	2.12%
$200,001 to $300,000	353 000 (24.9%)	1.47%
$100,001# to $200,000	471 000 (33.3%)	0.40%



Working population (3 493 400)
Taxpayers (1 416 000 [40.5%])
Non-taxpayers (2 077 400 [59.5%])
* After the one-off tax reduction up to $25,000
# The basic allowance for individuals in the 2007-08 year of assessment is $100,000

2011-12 (Year of assessment)

Annual income	No. of taxpayers	% of total salaries tax* yield
>$2,000,000	32 000 (2.0%)	42.79%
$1,000,001 to $2,000,000	75 000 (4.6%)	24.26%
$700,001 to $1,000,000	89 000 (5.5.%)	13.29%
$500,001 to $700,000	158 000 (9.7%)	10.73%
$400,001 to $500,000	159 000 (9.7%)	4.54%
$300,001 to $400,000	257 000 (15.7%)	2.91%
$200,001 to $300,000	394 000 (24.0%)	1.22%
$108,001# to $200,000	470 000 (28.8%)	0.26%



Working population (3 600 000)
Taxpayers (1 634 000 [45.4%])
Non-taxpayers (1 966 000 [54.6%])
* After the one-off tax reduction up to $12,000
# The basic allowance for individuals in the 2011-12 year of assessment is $108,000

1.30 Income from our major revenue sources tends to be very volatile, fluctuating widely with economic conditions or changes in policy. As *Table 1.1* illustrates –

(a) profits tax revenue ranged between 2.9% of GDP in 1999-2000 ($37.7 billion) and 6.2% in 2012-13 ($125.6 billion);

(b) land premium ranged between 0.4% of GDP in 2003-04 ($5.4 billion) and 4.6% of GDP in 1997-98 ($62.5 billion);

(c) stamp duties ranged between 0.6% of GDP in 2002-03 ($7.5 billion) and 3.1% of GDP in 2007-08 ($51.5 billion); and

(d) salaries tax revenue – though relatively less volatile, still fluctuated between 1.9% of GDP in 1998-99 ($25.1 billion) and 2.7% in 2011-12 ($51.8 billion).

Table 1.1 – Volatility of key revenue sources

Revenue item	**Range from 1997-98 to 2013-14**		**Estimated revenue in 2014-15**	
	% of GDP	**equivalent $ Billion**	**% of GDP**	**equivalent $ Billion**
Profits tax	2.9% - 6.2%	37.7 - 125.6	5.3%	117.6
Salaries tax	1.9% - 2.7%	25.1 - 51.8	2.4%	52.9
Stamp duties	0.6% - 3.1%	7.5 - 51.5	2.0%	43.8
Land premium	0.4% - 4.6%	5.4 - 62.5	3.2%	70.0
Investment income	0.1% - 3.3%	0.9 - 41.9	1.2%	27.0
Other revenue	4.6% - 7.0%	77.7 - 88.0	5.3%	118.8
Total revenue	13.3% - 22.6%	175.6 - 437.7	19.4%	430.1

1.31 With an ageing population, the local labour force is projected to reach its peak in 2018 and dwindle throughout the 2020s, as the retirement of baby-boomers outweighs the new entrants from the younger generations. There will be pressure on salaries tax and other operating revenues. Besides, the elderly dependency ratio will worsen – by 2041, two persons of working age (people aged 15 to 64) would support one dependent elderly person, instead of five supporting one today.

Fiscal reserves

1.32 In the light of successive years of budget surplus, our fiscal reserves is forecast to stand at $745.9 billion as at end March 2014. This is equivalent to 35.1% of the GDP or 21 months of government expenditure. Enviably high, the level of fiscal reserves has induced demands for service improvements on many fronts. However, fiscal reserves can be exhausted. Within the fiscal reserves, only the portion held in the General Revenue Account (about $394 billion) is for meeting the day-to-day cash flow requirements of the Government; the balance held in the Land Fund (about $220 billion) has **no authorised use**; and the balances held in various Funds (e.g. CWRF, Innovation and Technology Fund, Loan Fund, Lotteries Fund) set up by Resolutions of the Legislative Council (about $132 billion) **have their respective designated use**.

Challenges

1.33 The pressure to spend the fiscal reserves on services must be weighed carefully against the pressure to keep and save these for the longer term benefits to the community.

Conclusion

1.34 Hong Kong is able to withstand short to medium term fiscal challenges. But we are not immune to pressure and threats - pressure to increase spending, threat of slow-down in revenue growth, and pressure to run down the fiscal reserves, etc. The pressure to cope with an ageing population aggravates the concerns about fiscal sustainability in the long run. We will present the fiscal picture in the following chapters.

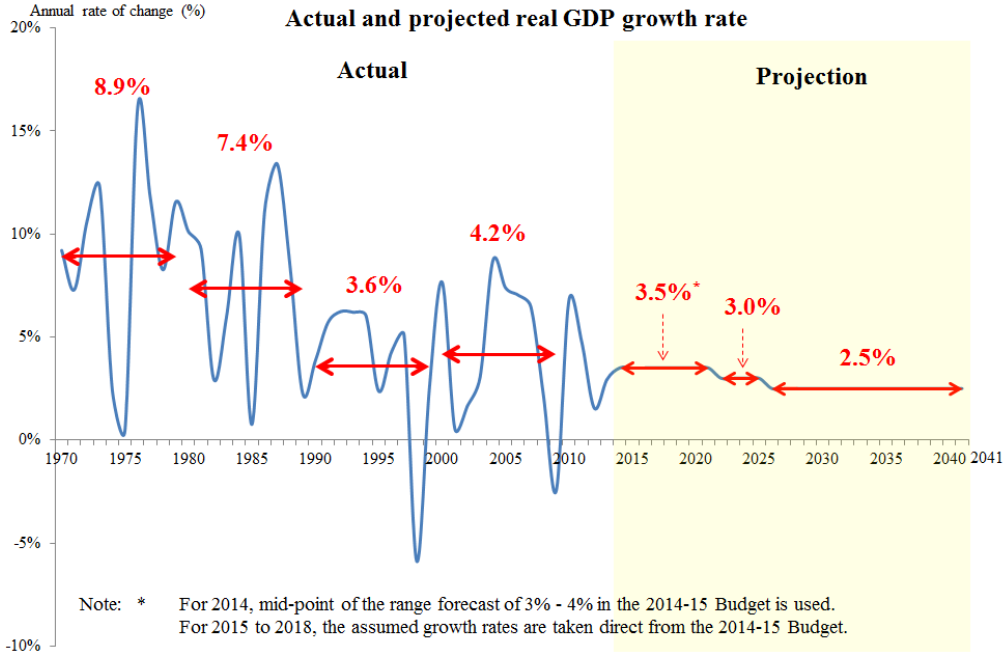
Chapter 2 – Macroeconomic Assumptions

Overview

2.1 The Working Group is tasked to review long-term projections on the state of public finances up to 2041. As with all long-term fiscal projections, a natural starting point lies in the macroeconomic assumptions on economic growth and various price movements.

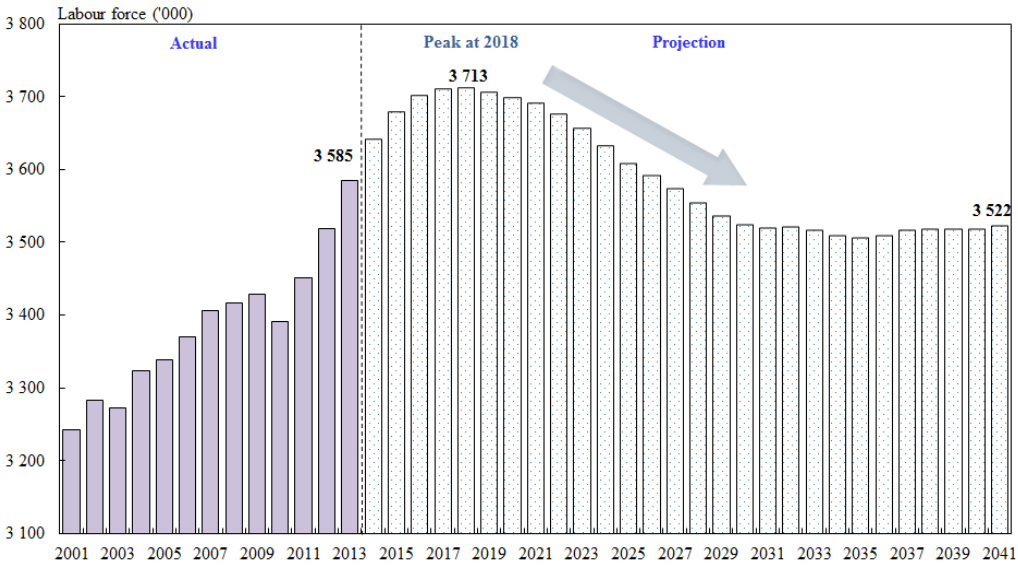
2.2 Over the past decades, while Hong Kong has successfully transformed into an advanced service-based economy, growth has been decelerating as the economy successively climbed up the value chain. Analysed by the 10-year growth trend, GDP growth has trended down from 8.9% per annum in the 1970s, to 7.4% per annum in the 1980s, and 5.0% per annum in the mid-1990s. Trend growth averaged at 3.4% per annum in the post-1997 era.

Chart 2.1 – Hong Kong economy has been decelerating in the past four decades; growth is expected to settle at a slower pace in the coming three decades or so



2.3 Looking further ahead, under the existing population policies, with local labour force expected to peak by 2018 and then embark on a secular decline until the early 2030s, Hong Kong's long-term growth prospect in the coming three decades will unavoidably be constrained, even assuming that the productivity growth in our workforce can keep in pace with the vibrant performance in the past.

Chart 2.2 – Labour force is expected to decline after 2018, only to stabilise in the 2030s



Notes : Figure for 2013 is provisional.
The projections from 2014 onwards are based on *Updated Hong Kong Labour Force Projections for 2013 to 2041, Hong Kong Monthly Digest of Statistics, the Census and Statistics Department (C&SD) (September 2013).*

2.4 The Working Group has adopted a **Base Case** (regarded as the best estimate) that assumes that real GDP growth would stay at **3.5%** per annum from 2014 to 2021 and gradually decelerate to **3%** for 2022 to 2025, and then further to **2.5%** from 2026 to 2041. The macro-economic assumptions for the short to medium term (2014 to 2018) follow those in the 2014-15 Budget and are accepted by the Working Group as given. The Base Case assumptions from 2014 to 2041 imply **an average projected real GDP growth rate of 2.8% per annum**, lower than the historical trend growth rate of 3.4% since 1997-98.

2.5 For sensitivity analysis purpose, two more Cases have been examined. They are a **High Case** and a **Low Case** which are respectively **0.5 percentage point higher and lower** than the assumed real GDP growth rates under the Base Case from 2019 onwards.

2.6 On top of these Cases, a hypothetical **Shock Case** has also been constructed, assuming an abrupt five-year downturn as from 2015. The Shock Case is included purely for sensitivity testing to reflect the vulnerability of Hong Kong should severe external shocks occur. It does not represent the Government's view on the economy from 2015 onwards (see paragraph 2.16(c)).

2.7 The Working Group has also adopted a set of price assumptions that are relevant to this fiscal projection exercise, making references to the historical trends as well as the global, regional and local economic developments. Detailed considerations behind the key macroeconomic assumptions under the Base Case are set out in **Annex B**.

2.8 A summary of the core macroeconomic assumptions for the **Base Case** is set out below –

Base Case (Annual rate of change)

Period	Real GDP	GDP deflator	CCPI* (Underlying)	Public construction output price	Private sector wages
2014@	3.5%	1%	3.7%	6%	5%
2015 – 2018@	3.5%	2%	3.5%	6%	5%
2019 – 2021	3.5%	1.5%	3%	5%	4%
2022 – 2025	3%	1.5%	3%	4.5%	4%
2026 – 2041	2.5%	1.5%	3%	4%	4%
2015 – 2041 (27 years)	**2.8%**	**1.6%**	**3.1%**	**4.5%**	**4.1%**

Notes: * Unless otherwise specified, the underlying Social Security Assistance Index of Prices is assumed to be the same as that in the underlying CCPI.

@ The assumptions for real GDP, GDP deflator and CCPI for 2014 to 2018 follow those in the 2014-15 Budget Speech. For real GDP growth in 2014, the mid-point of the range forecast of 3 – 4% is used.

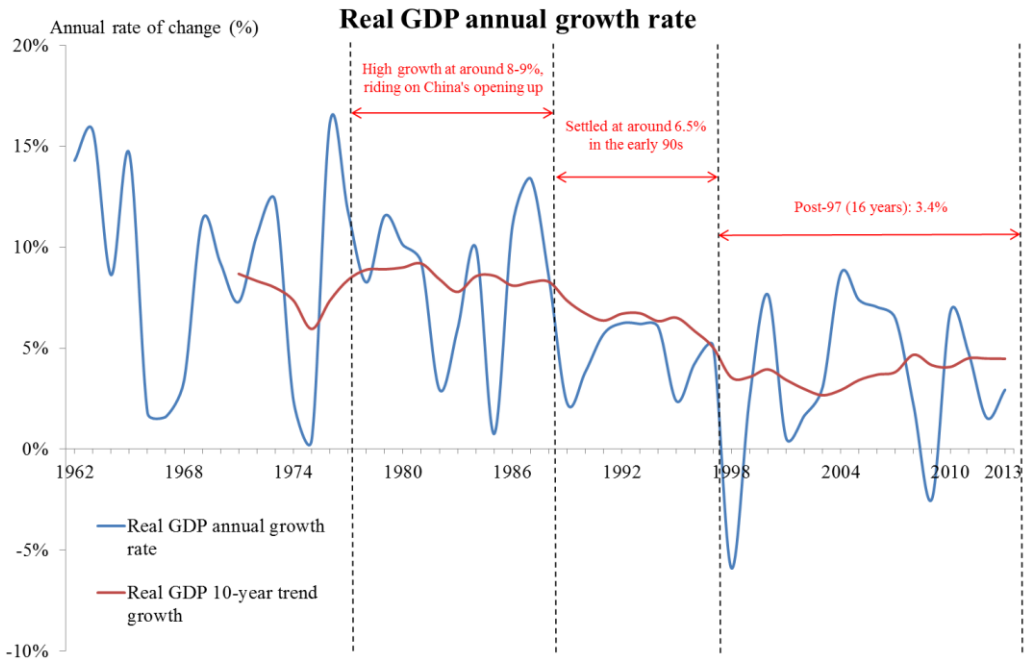
Real GDP assumptions under the Base Case

Analysing past economic growth trend

2.9 As a small and open economy subject to the influences of the global economy, Hong Kong experienced many ups and downs over the past 50 years.

2.10 Yet after smoothing out the economic cycles, it is also evident from *Chart 2.3* that in terms of the 10-year trend growth, Hong Kong's economic growth has steadily decelerated over time, epitomizing the evolution from a developing economy marked by high growth to an advanced economy with lower growth. Analysed by phases of development, our average trend growth rate hovered at around 8 – 9% per annum for most of the 1980s, riding on the Mainland's opening up since 1978 and our ensuing economic restructuring into a service-based economy serving as China's business hub and financial centre. Hong Kong's trend economic growth then settled at around 6.5% per annum in the early 1990s, as the economic restructuring towards more service- and knowledge-based activities continued, followed by an average growth rate of 3.4% per annum in the 16-year period after 1997.

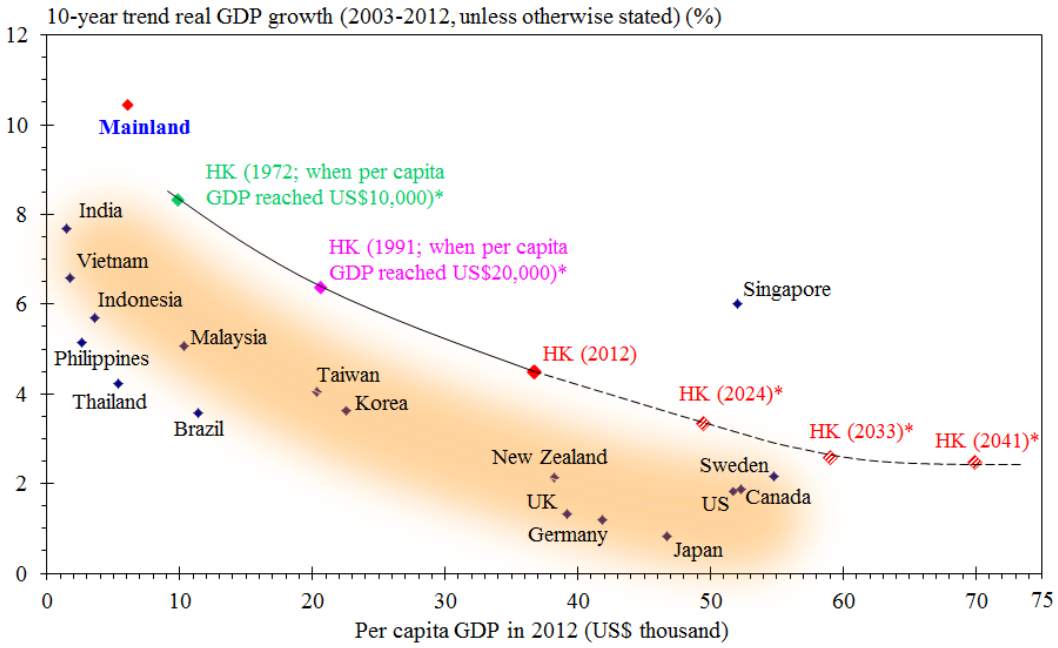
Chart 2.3 – Cyclicality aside, economic growth trend is decelerating, as HK advanced into higher income economy



2.11 Such deceleration in our trend economic growth can be attributed to several factors. On the supply side, the two key factors of production, labour and capital, have both seen decelerating growth over time (See *Charts 2.5* and *2.6* for the historical trends on labour force and capital stock). From the perspective of labour productivity, Hong Kong was the beneficiary from several waves of economic restructuring. In particular, during the 1980s and early 1990s, Hong Kong's transformation into a service-based economy unleashed a new round of labour productivity growth. Yet, as the transformation has been largely completed by around the mid-1990s, the incremental bonus from such sectoral shifts has diminished over time.

2.12 From a broader perspective looking at the global-wide experience, one common phenomenon is that the trend economic growth will generally go lower as an economy becomes increasingly mature (*Chart 2.4*).

Chart 2.4 – Economic growth bound to go lower as the economy becomes more mature



Notes: * Per capita GDP figures for these data points are in 2012 constant dollar terms, i.e. they have been adjusted for change in prices over time for more meaningful comparisons. The figures beyond 2013 are projected figures derived from the macroeconomic assumptions under the Base Case and C&SD's population projection.

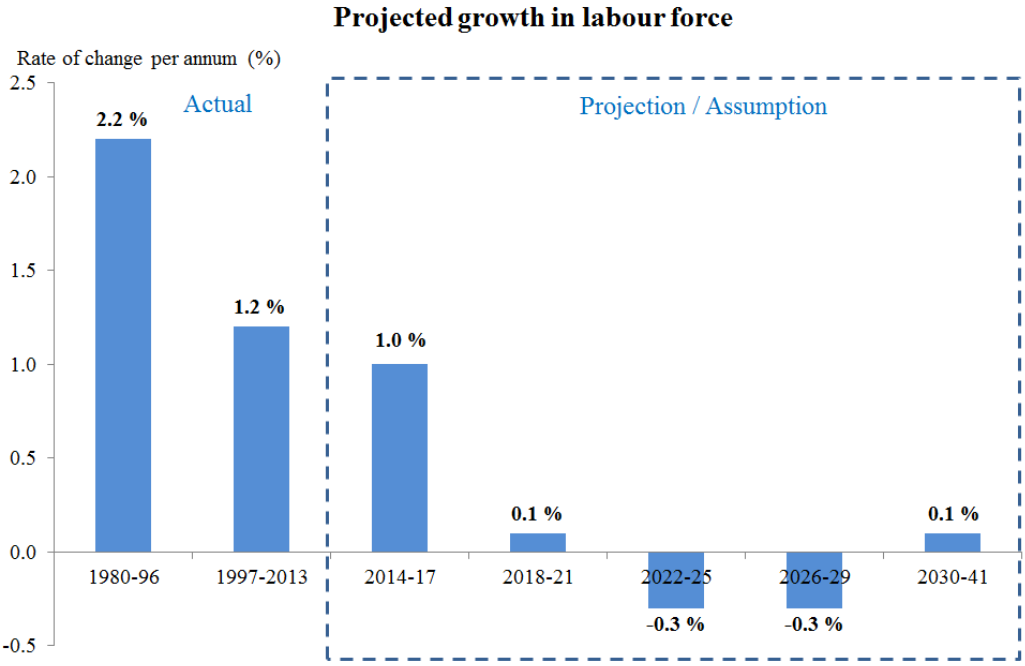
Economic growth potential set to slow under population ageing

2.13 The most immediate and direct challenge brought about by population ageing is the shrinkage of our labour force. According to the projections by the Census and Statistics Department released in September 2013, under the existing population policy, labour force is expected to stagnate in the late 2010s and then decline persistently throughout the 2020s. If foreign domestic helpers are excluded, **labour force would start to decline after 2018** (see *Chart 2.2*). It will only turn steadier in 2030s under the assumption that some of the Type II babies[1] born in the earlier years will come back to Hong Kong and gradually enter the labour force.

1 Type II babies refer to babies born in Hong Kong whose mothers are Mainland women and whose fathers are not Hong Kong Permanent Residents. There will be negligible Type II babies from 2013 onwards, due to new measures introduced.

2.14 With such a labour force profile in the coming three decades, the implication for long-term economic growth prospect is that the GDP growth potential will inevitably be affected in the period beyond the medium term *(Chart 2.5)*.

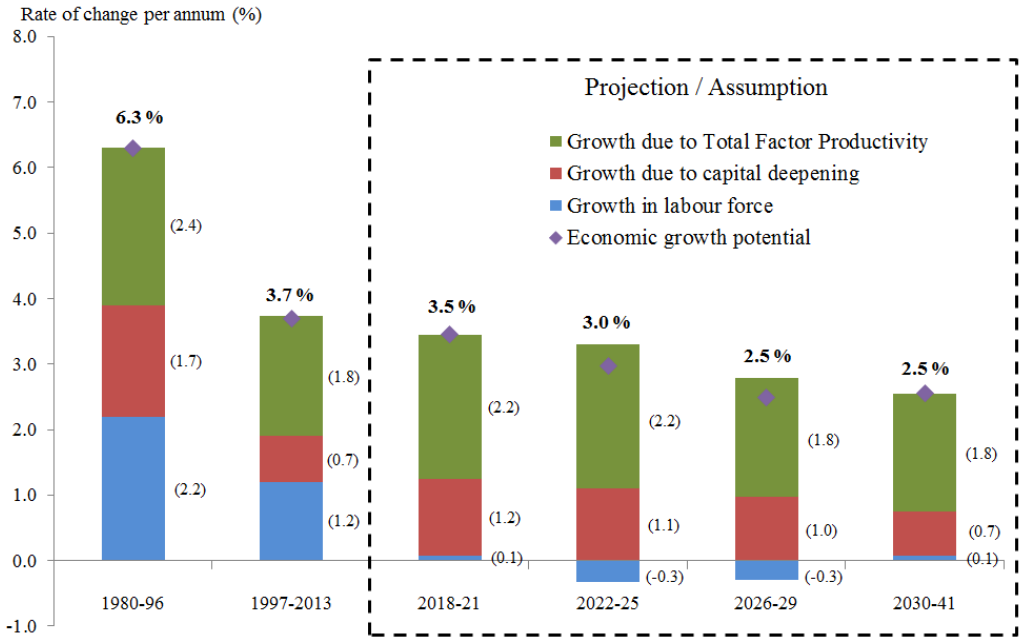
Chart 2.5 – Economic growth will inevitably be constrained as labour force stagnates after 2018



Note : The projections from 2014 onwards are based on *Updated Hong Kong Labour Force Projections for 2013 to 2041, Hong Kong Monthly Digest of Statistics, the Census and Statistics Department (September 2013)*, after adding back the projected number of foreign domestic helpers.

2.15 Thus, even with capital intensification and sustained growth in Total Factor Productivity (see **Annex B** for the analytical framework), Hong Kong's economic growth potential still looks set to slow as the labour force stagnates after 2018. *Chart 2.6* provides a breakdown on the economic growth potential assumptions under the Base Case beyond the medium term.

Chart 2.6 – Economic growth potential looks set to decelerate over the long term as labour force starts to stagnate



Notes : ( ) Contribution to the economic growth potential in percentage point.

Economic growth potential refers to the **potential output** growth under full employment and normal intensity of usage of other factors of production. As such, the growth rates presented here for 1980-1996 and 1997-2013 differ slightly from the **actual GDP** growth rates.

See **Annex B** for the methodology of the analytical framework and the rationale underlying the growth projection.

Macroeconomic assumptions under the High Case, Low Case and Shock Case

2.16 The macroeconomic assumptions under the **Base Case** are important to this fiscal projection exercise, but the use of assumptions over such a long time horizon into the distant future also means that the extent of uncertainty involved is inevitably huge. To ensure the robustness of the fiscal projection results, three more cases of GDP and price assumptions have been worked out for sensitivity testing purpose –

(a) **High Case:** Faster growth and higher inflation than the Base Case from 2019 onwards, by 0.5 percentage point per annum.

(b) **Low Case:** Slower growth and lower inflation than the Base Case from 2019 onwards, by 0.5 percentage point per annum.

(c) **Shock Case:** Being a small and open economy, Hong Kong is susceptible to adverse shocks in the global economy. The 1997-98 Asian Financial Crisis and the 2008-09 Global Financial Tsunami are two examples of severe shocks that had hit Hong Kong hard, causing economic recession and a concurrent plunge in government revenue. For the purpose of scenario testing, the Working Group has constructed a hypothetical case that assumes the Hong Kong economy to dip into a recession in 2015 and 2016, followed by a sluggish recovery in 2017 to 2019 (see **Annex C** for the specifications of the Shock Case). Although the economy is assumed to return to the growth path as that in the Base Case from 2020 onwards, the nominal GDP level in this Shock Case would still be permanently lower than that in the Base Case by 33% from 2020 till 2041 (*Chart 2.8*).

2.17 A summary of the assumptions on the real GDP under the four Cases are as follows –

Assumptions on real GDP (Annual rate of change)

<table>
<tr><th></th><th>Base Case</th><th>High Case</th><th>Low Case</th><th>Shock Case</th></tr>
<tr><td>2014</td><td>3.5%</td><td>3.5%</td><td>3.5%</td><td>3.5%</td></tr>
<tr><td>2015</td><td rowspan="4">3.5% p.a.</td><td rowspan="4">3.5% p.a.</td><td rowspan="4">3.5% p.a.</td><td>-4.5%</td></tr>
<tr><td>2016</td><td>-3.5%</td></tr>
<tr><td>2017</td><td>0.5%</td></tr>
<tr><td>2018</td><td>1.5%</td></tr>
<tr><td>2019</td><td rowspan="3">3.5% p.a.</td><td rowspan="3">4% p.a.</td><td rowspan="3">3% p.a.</td><td>2.5%</td></tr>
<tr><td>2020</td><td>3.5%</td></tr>
<tr><td>2021</td><td>3.5%</td></tr>
<tr><td>2022 – 2025</td><td>3% p.a.</td><td>3.5% p.a.</td><td>2.5% p.a.</td><td>3% p.a.</td></tr>
<tr><td>2026 – 2029</td><td>2.5% p.a.</td><td>3% p.a.</td><td>2% p.a.</td><td>2.5% p.a.</td></tr>
<tr><td>2030 – 2041</td><td>2.5% p.a.</td><td>3% p.a.</td><td>2% p.a.</td><td>2.5% p.a.</td></tr>
<tr><td>2015 – 2041 (27 years)</td><td>2.8% p.a.</td><td>3.3% p.a.</td><td>2.4% p.a.</td><td>2.0% p.a.</td></tr>
</table>

Note : The GDP forecast for 2014 is based on the mid-point of the range forecast of 3 – 4% as announced in the 2014-15 Budget. The assumptions for 2015 to 2018 also follow those in the 2014-15 Budget.

Chart 2.7 – Real GDP 10-year trend growth rates under the four Cases

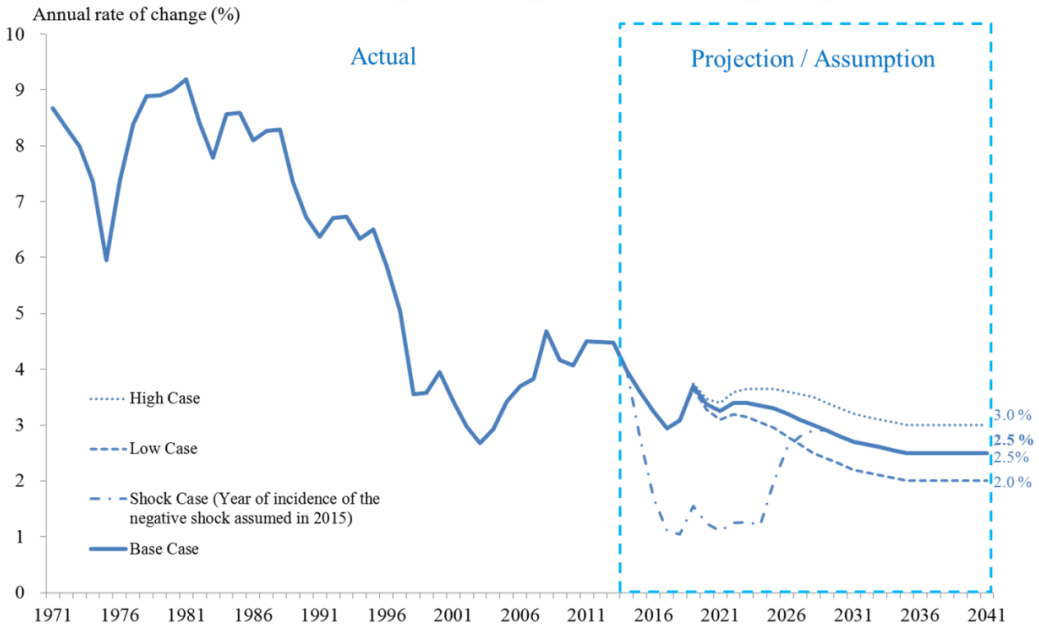
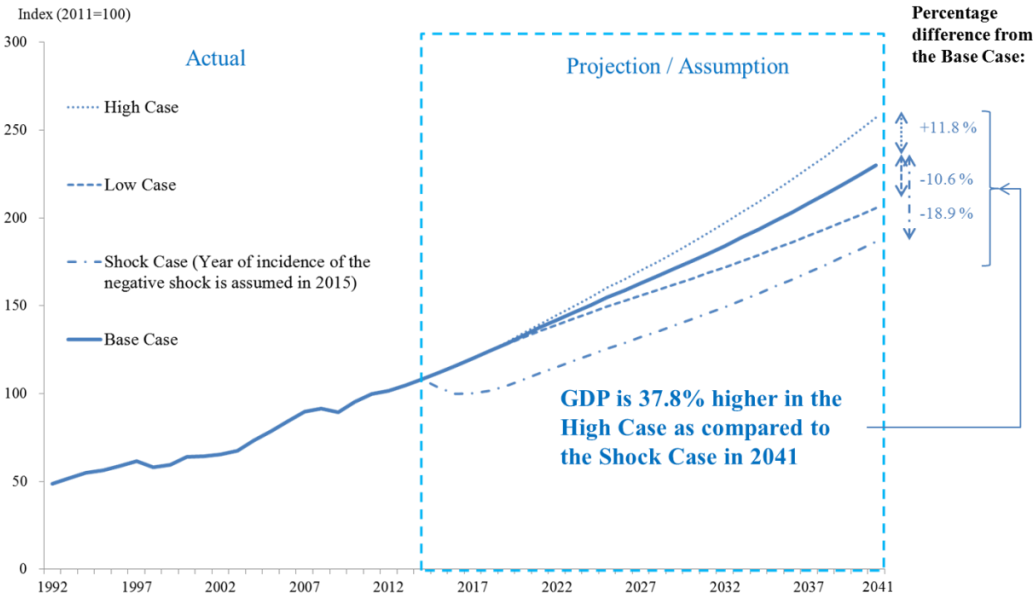


Chart 2.8 – Real GDP cumulative growth under the four Cases



2.18 The CCPI assumptions under the four Cases are as follows –

Assumptions on underlying CCPI (Annual rate of change)

<table>
<tr><th></th><th>Base Case</th><th>High Case</th><th>Low Case</th><th>Shock Case</th></tr>
<tr><td>2014</td><td>3.7%</td><td>3.7%</td><td>3.7%</td><td>3.7%</td></tr>
<tr><td>2015</td><td rowspan="3">3.5% p.a.</td><td rowspan="3">3.5% p.a.</td><td rowspan="3">3.5% p.a.</td><td>-2.5%</td></tr>
<tr><td>2016</td><td>-2.5%</td></tr>
<tr><td>2017</td><td>-0.5%</td></tr>
<tr><td>2018</td><td rowspan="3">3% p.a.</td><td rowspan="3">3.5% p.a.</td><td rowspan="3">2.5% p.a.</td><td>1.5%</td></tr>
<tr><td>2019</td><td>2%</td></tr>
<tr><td>2020</td><td>3%</td></tr>
<tr><td>2021</td><td>3%</td></tr>
<tr><td>2022 - 2025</td><td>3% p.a.</td><td>3.5% p.a.</td><td>2.5% p.a.</td><td>3% p.a.</td></tr>
<tr><td>2026 - 2029</td><td>3% p.a.</td><td>3.5% p.a.</td><td>2.5% p.a.</td><td>3% p.a.</td></tr>
<tr><td>2030 - 2041</td><td>3% p.a.</td><td>3.5% p.a.</td><td>2.5% p.a.</td><td>3% p.a.</td></tr>
<tr><td>2015 - 2041
(27 years)</td><td>3.1% p.a.</td><td>3.5% p.a.</td><td>2.6% p.a.</td><td>2.4% p.a.</td></tr>
</table>

Note : The assumptions for 2014 to 2018 are taken direct from the 2014-15 Budget.

Chart 2.9 – Consumer price inflation (as measured by CCPI) 10-year trend rates of change under the four Cases

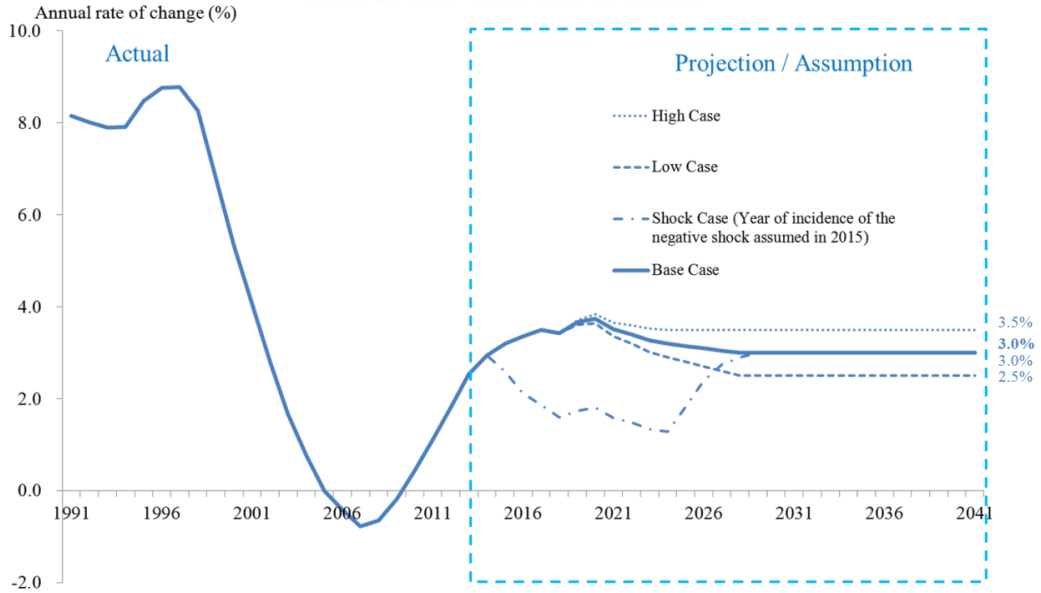
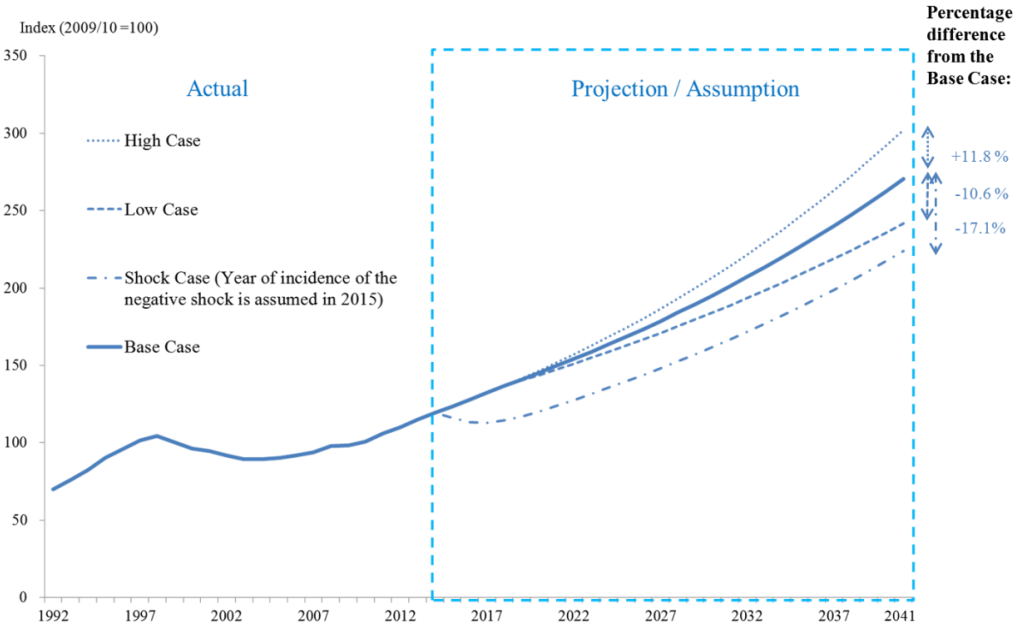


Chart 2.10 – Consumer price inflation (as measured by CCPI) cumulative rates of change under the four Cases



2.19 The nominal GDP assumptions under the four Cases are as follows –

Assumptions on nominal GDP (Annual rate of change)

<table>
<tr><th></th><th>Base Case</th><th>High Case</th><th>Low Case</th><th>Shock Case</th></tr>
<tr><td>2014</td><td>4.5%</td><td>4.5%</td><td>4.5%</td><td>4.5%</td></tr>
<tr><td>2015</td><td rowspan="4">5.5% p.a.</td><td rowspan="4">5.5% p.a.</td><td rowspan="4">5.5% p.a.</td><td>-8.5%</td></tr>
<tr><td>2016</td><td>-7.5%</td></tr>
<tr><td>2017</td><td>-1.5%</td></tr>
<tr><td>2018</td><td>1.5%</td></tr>
<tr><td>2019</td><td rowspan="3">5% p.a.</td><td rowspan="3">6% p.a.</td><td rowspan="3">4% p.a.</td><td>3%</td></tr>
<tr><td>2020</td><td>5%</td></tr>
<tr><td>2021</td><td>5%</td></tr>
<tr><td>2022 – 2025</td><td>4.5% p.a.</td><td>5.5% p.a.</td><td>3.5% p.a.</td><td>4.5% p.a.</td></tr>
<tr><td>2026 – 2029</td><td>4% p.a.</td><td>5% p.a.</td><td>3% p.a.</td><td>4% p.a.</td></tr>
<tr><td>2030 – 2041</td><td>4% p.a.</td><td>5% p.a.</td><td>3% p.a.</td><td>4% p.a.</td></tr>
<tr><td>2015 – 2041
(27 years)</td><td>4.4% p.a.</td><td>5.3% p.a.</td><td>3.6% p.a.</td><td>2.9% p.a.</td></tr>
</table>

Note : The assumptions for 2015 to 2018 are taken direct from the 2014-15 Budget. For 2014, the mid-point of the range forecast of 4 – 5% is used.

Chart 2.11 – Nominal GDP 10-year trend growth rates under the four Cases

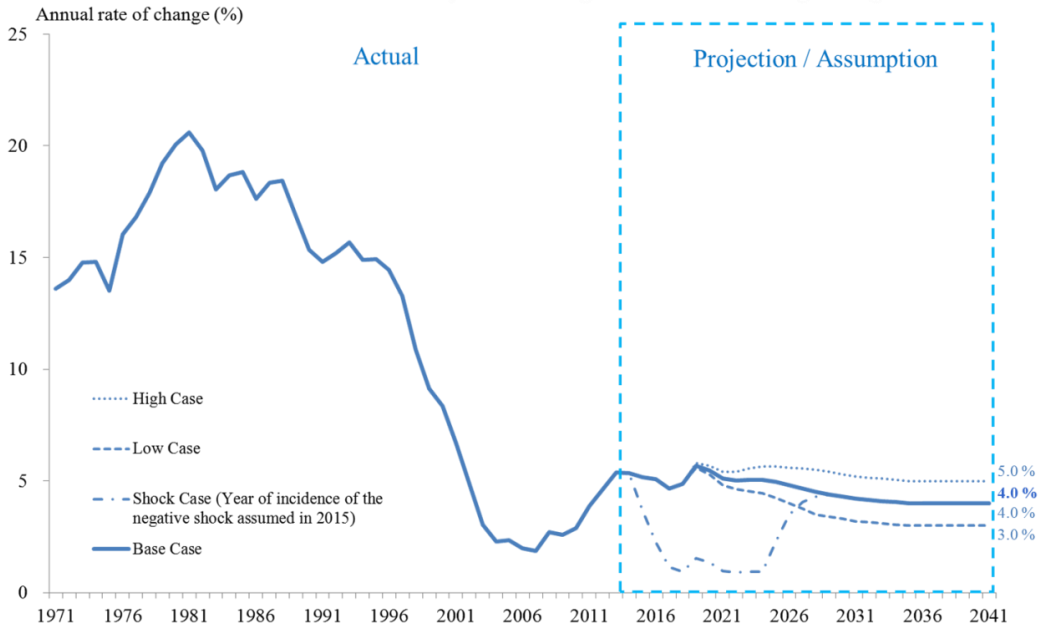
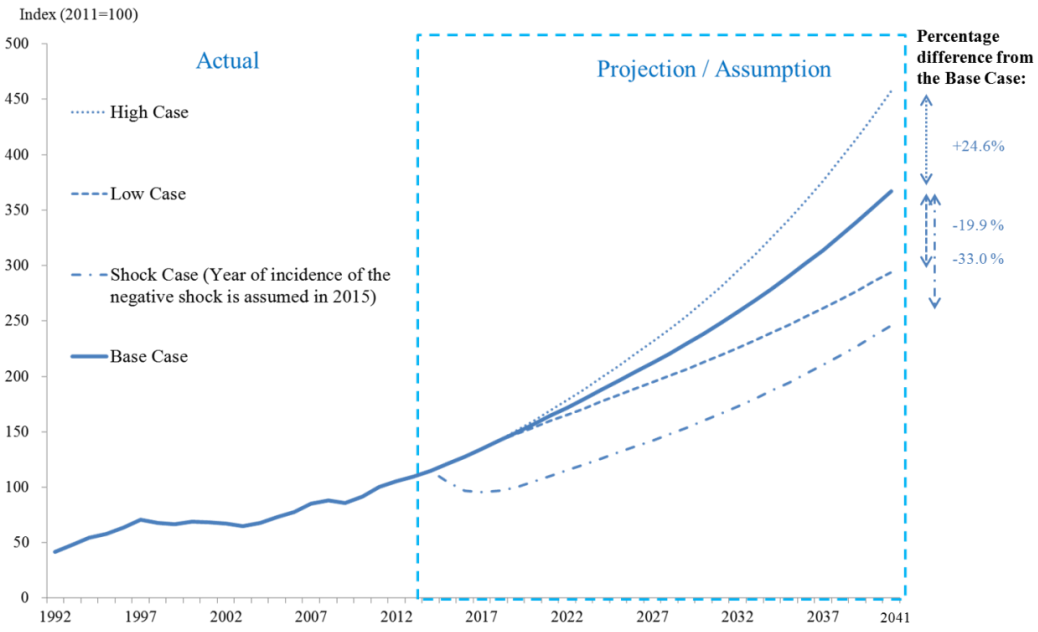


Chart 2.12 – Nominal GDP cumulative growth under the four Cases



2.20 Other price indicators have also been adjusted accordingly in these three extra Cases, based on the assumed deviations in the assumed changes in CCPI from the Base Case.

Limitations of the assumptions

2.21 The macroeconomic and price assumptions are solely for the purpose of the long-term projection by the Working Group. Given such a long time horizon of near 30 years, the extent of uncertainty is unavoidably very large. As such, these parameters should **not** be treated as economic forecasts.

Chapter 3 – Expenditure Projections

Overview

3.1 On the basis of the macroeconomic assumptions set out in Chapter 2, the Working Group has examined the expenditure requirements for the three policy area groups which are particularly sensitive to demographic changes - namely, **education, social welfare and health.** They account for the lion's share (about 60%) of the Government's recurrent expenditure in 2014-15. Four projection scenarios have been developed for each –

(a) Under the **No Service Enhancement Scenario**, it is assumed that there would be **no** policy changes and **no** service improvements in these three areas from now to 2041-42. The two key variables determining their recurrent expenditure requirements under this scenario are **demographic changes** and **price changes** (based on the relevant price assumptions as set out in Chapter 2). By way of illustration, this scenario assumes that –

(i) in the field of education, the number of publicly-funded first-year first-degree (FYFD) places in full-time-equivalent term in the University Grants Committee (UGC)-funded sector would remain at 15 000 per cohort as approved by the Executive Council for the 2012/13 – 2014/15 triennium, and that we continue to maintain the 12-year free education policy;

(ii) in the field of social welfare, this scenario assumes that the number of elderly taking up the Old Age Allowance (OAA), Old Age Living Allowance (OALA), etc. as a percentage of the elderly population for the relevant age cohort would remain the same; thus, as the total elderly population grows, expenditure on the elderly-related funding schemes would grow correspondingly without any increase in payment rates. Based on past trends, the number of old-age cases for Comprehensive Social

Security Assistance (CSSA) is assumed to grow in line with overall population growth rather than growth in elderly population; and

(iii) in the field of health, the scenario assumes that the number of bed days and the average length of hospital stay for the different age groups would remain as is; demographic changes would merely lead to proportionate changes in the expenditure on these age groups. No medical advancement (i.e. no adoption of new medical technology, no new drugs and no new medical devices) is assumed.

The projections are based on the current policies and service levels, including the new policies and initiatives announced in the 2014 Policy Address or reflected in the 2014-15 Budget. The projections further assume that resources and delivery capacity are not constraints. This scenario serves as the basic building block for assessing the impact of demographic changes on age-related expenses.

(b) With the scenario at (a) above as the building block, three Service Enhancement Scenarios have been developed –

(i) **Service Enhancement at 1% per annum** assumes that recurrent expenditure on education, social welfare and health would grow at 1% per annum on top of demographic changes and price changes;

(ii) **Service Enhancement at 2% per annum** is the same as (i) except that recurrent expenditure on the three areas is assumed to grow at 2% per annum on top of demographic changes and price changes; and

(iii) **Service Enhancement at Historical Trend** assumes that services for education, social welfare and health would be enhanced, at 3.86%, 2.8% and 2.63% per annum respectively (or on average, 3% per annum collectively for the three sectors) trailing historical trends. In the fields of education and social welfare, the trends since 1997-98 have been used. In the field of health, the Working Group adopted the trend rate since 2007-08 to take away the distortions caused by the outbreak of SARS in 2003-04.

The Working Group adopted a broad brush approach to deduce the historical service enhancement rates for the three policy area groups, by attributing past expenditure changes to three factors – namely, demographic changes, price changes and the balance, "service enhancements". The historical service enhancement rates deduced were 3.86% per annum for education, 2.8% per annum for social welfare and 2.63% per annum for health (on average, 3% per annum collectively for the three sectors).

The analysis and expenditure projections on education, social welfare and health services are detailed in **sections (A) to (C)** below.

3.2 The Working Group then examined the expenditure projections for **capital works** and **civil service pensions and Civil Service Provident Fund/ Mandatory Provident Fund contributions,** being known financial pressure points and **other recurrent, non-recurrent and other capital expenditure**. Save for statutory commitments, it is assumed that capital works and other expenditure items would remain a constant share of GDP[1] during the projection period. The analysis and projections for these are set out in **sections (D) to (F)** respectively.

[1] Capital works expenditure is assumed to remain a constant share of real GDP while other expenditure items are assumed to remain a constant share of nominal GDP.

3.3 Within the projection period to 2041-42, there would be occasions under a number of scenarios when the fiscal reserves would be depleted and the Government would need to borrow to make ends meet. **Section (G)** sets out the assumptions on interest expenses.

Base Case

3.4 Under the **No Service Enhancement Scenario** for education, social welfare and health services, **total government expenditure** as a percentage of nominal GDP is projected to increase from 19% of nominal GDP or $421.0 billion in 2014-15 (including repayment of $9.8 billion in bonds and notes) as follows –

	% of GDP	**$ Billion**	**Overall growth per annum**
	by 2041-42		
No Service Enhancement	23.9%	1,700	5.3%

The projected trend growth in government expenditure of **5.3% per annum** is higher than the projected trend growth in nominal GDP of 4.4% per annum.

3.5 This means that with demographic and price changes alone, even assuming no further enhancements to education, social welfare and health services to 2041-42, total government expenditure would increase by 4.9 percentage points of nominal GDP within three decades.

3.6 Under the three **Service Enhancement Scenarios**, **total government expenditure** would grow as follows –

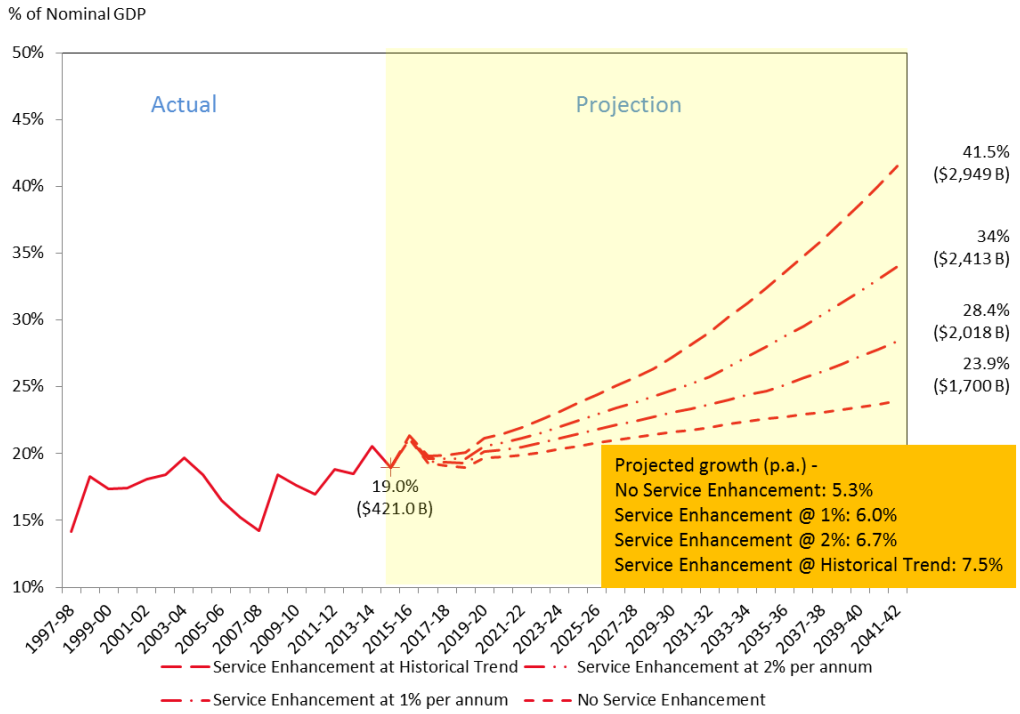
Service Enhancement	**% of GDP**	**$ Billion**	**Overall growth* per annum**
	by 2041-42		
@ 1% per annum	28.4%	2,018	6.0%
@ 2% per annum	34.0%	2,413	6.7%
@ Historical Trend	41.5%	2,949	7.5%

* Covering demographic and price changes and service enhancement.

The projected trend growth in government expenditure of **6.0% to 7.5% per annum exceeds** the post-handover average annual growth of 4.7% in government expenditure. It also **exceeds** the projected nominal GDP growth of 4.4% per annum.

3.7 This means that on top of the demographic and price changes already reflected in the No Service Enhancement Scenario, if services in education, social welfare and health would be enhanced between 1% and the historical trends at roughly 3% per annum, total government expenditure would increase by 9.4 to 22.5 percentage points (vs 4.9 percentage points under the No Service Enhancement Scenario), reaching 28.4% to 41.5% of nominal GDP within three decades. This would far exceed the current public expenditure guideline of 20% of nominal GDP.

Chart 3.1 – Total government expenditure from 1997-98 to 2041-42 under the Base Case



Sensitivity analysis

3.8 In addition to the above projections under the Base Case macroeconomic assumptions, the Working Group has also reviewed how the projections would vary under the High Case, Low Case and Shock Case with different underlying macroeconomic assumptions as defined in Chapter 2. The results are summarised below –

(a) For the **No Service Enhancement Scenario**, the projected total government expenditure in 2041-42 is as follows –

Total government expenditure by 2041-42 (% of GDP)	**Base Case**	**High Case**	**Low Case**	**Shock Case[2]**
No Service Enhancement	23.9%	22.7%	27.1%	29.3%

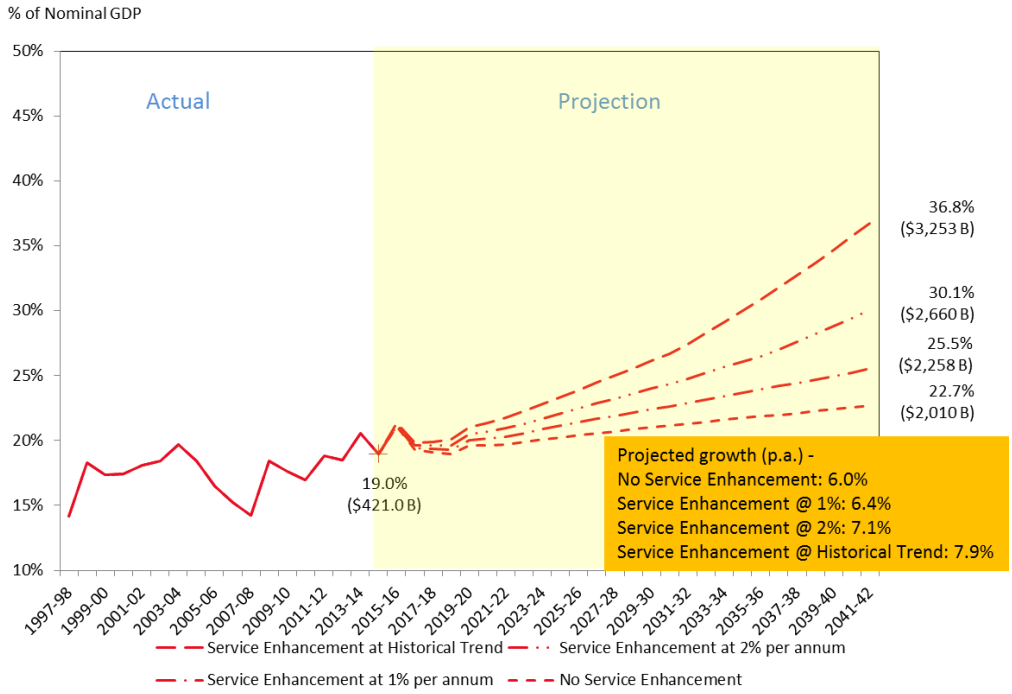
(b) For the **Service Enhancement Scenarios**, the projected total government expenditure in 2041-42 would be as follows –

Total government expenditure by 2041-42 (% of GDP)	**Base Case**	**High Case**	**Low Case**	**Shock Case[2]**
Service Enhancement @ 1% per annum	28.4%	25.5%	32.1%	34.6%
@ 2% per annum	34.0%	30.1%	38.4%	41.3%
@ Historical Trend	41.5%	36.8%	46.9%	50.4%

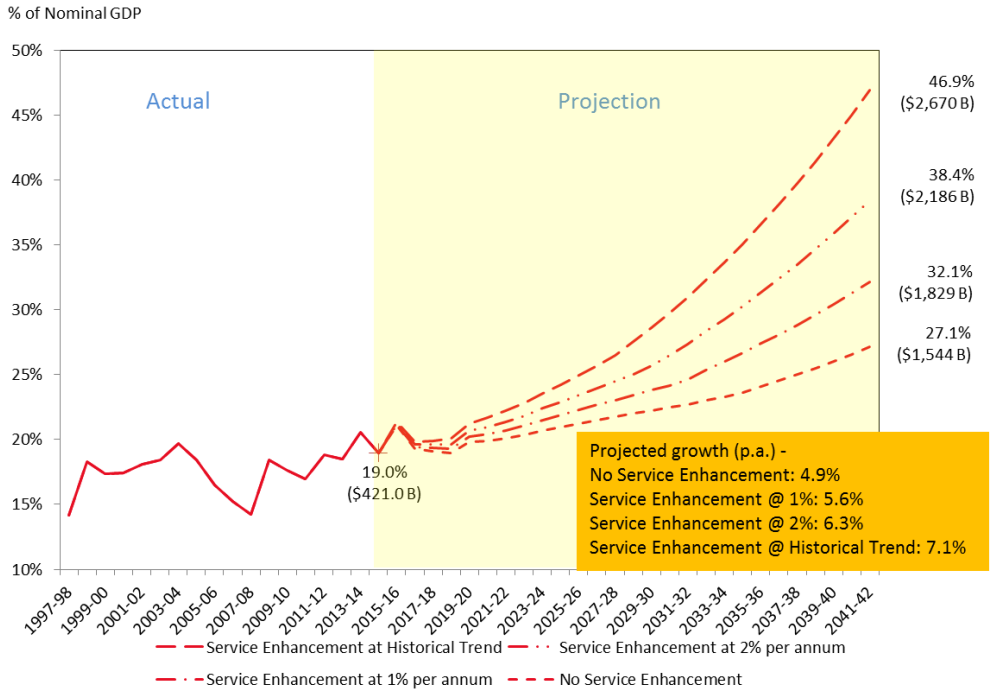
[2] In projecting expenditure under the Shock Case, the Working Group has made reference to the austerity / expenditure control measures adopted in past to cope with fiscal difficulties. Such measures include civil service pay freeze and reduction, freezing social security payments and controlling expenditure growth.

Charts 3.2 to 3.4 – Total government expenditure from 1997-98 to 2041-42 under the High, Low and Shock Cases

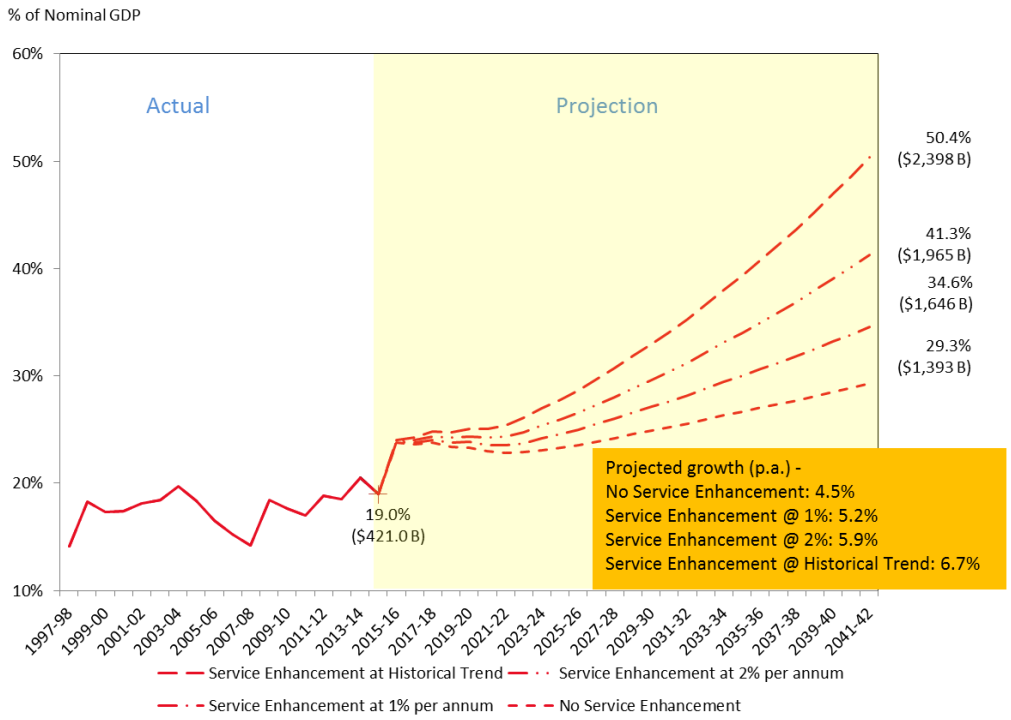
High Case



Low Case



Shock Case



3.9 The above scenarios have not taken into account the funding pressures which the **Housing Authority** would face under the 2014 Policy Address commitment to increase the supply of subsidized public housing (about 20 000 Public Rental Housing (PRH) units and 8 000 Home Ownership Scheme (HOS) units per annum). On the basis of the 2013 Policy Address commitment (involving a target supply of 20 000 PRH and 5 000 HOS units per annum) and assuming that the Government would shoulder the Housing Authority's funding shortfall in entirety as projected to arise as from 2019-20, the cumulative **potential liabilities** for the Government could be a further **$130 billion to some $490 billion by 2041-42**.

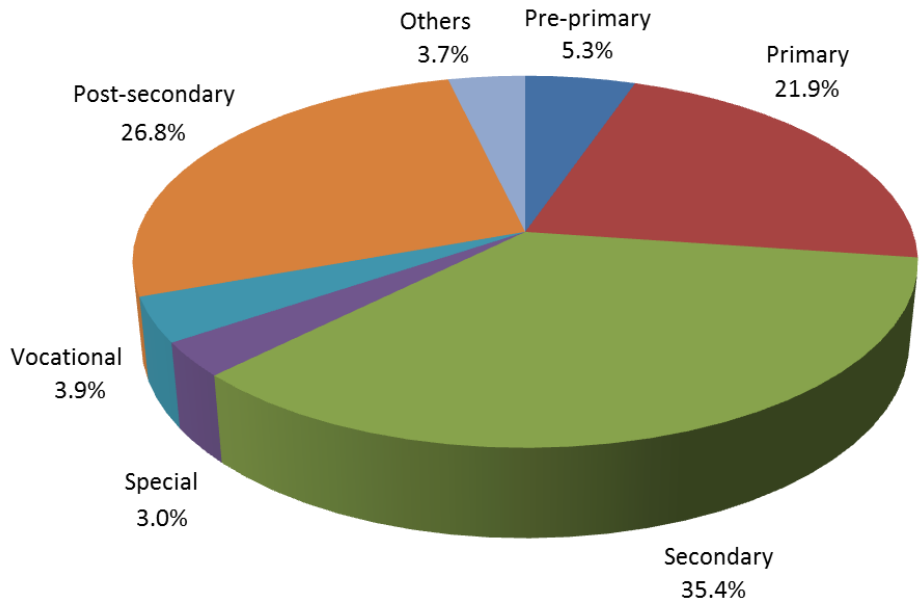
3.10 Unless otherwise indicated, the projections in this Chapter relate to the Base Case. More details on the assumptions, limitations and considerations in relation to the expenditure projections are described at **Annex D**.

(A) Education

3.11 Education is the policy area group with the largest share of recurrent government expenditure. In 2014-15, recurrent government expenditure on education is estimated to be $67.1 billion, representing around 21.8% of the total recurrent government expenditure or 3% of nominal GDP.

3.12 A breakdown of the recurrent expenditure on education by education level in 2014-15 is shown below –

Chart 3.5 – Recurrent education expenditure by education level in 2014-15 ($67.1 billion)



3.13 Around 96% of the recurrent expenditure on education is for the operation of public sector and subsidized primary and secondary schools (including salary grants for teachers and other subsidy grants), and providing subventions to education institutions and subsidies to students from pre-primary to post-secondary levels. Disbursement of expenditure, subventions or subsidies for the pre-primary, primary and secondary education sectors is primarily based on the number of schools, classes, teachers or students. Expenditure on vocational and post-secondary education which accounts for 30.7% of total recurrent education expenditure is supply-driven, depending on the Government's policy as to how

many student places would be provided in these sectors.

3.14 In the 2013/14 school year, there were about 133 000 pre-primary students in 724 kindergartens covered by the pre-primary education vouchers, 280 500 primary students, 379 600 secondary students, 7 850 special school students studying in around 1 000 public sector and subsidized schools. There were 45 800 full-time and 26 300 part-time vocational education student places provided by the Vocational Training Council and 91 600 full-time equivalent student places in the eight UGC-funded institutions. There were some 337 300 students in receipt of some form of financial assistance.

3.15 The Government has invested heavily in education for the purpose of nurturing human capital, facilitating social mobility and sustaining the development of Hong Kong. A number of major education policy initiatives have been introduced since 1997-98 at all levels of education, leading to a marked increase in recurrent expenditure. Some notable examples are –

(a) launch of the Pre-primary Education Voucher Scheme in the 2007/08 school year. Taking into account the plan to increase the voucher value by $2,500 per year in the 2014/15 and 2015/16 school years, it is estimated that about 139 000 kindergarten students will receive the voucher at $20,010 in the 2014/15 school year and the estimated total cost is about $2.6 billion;

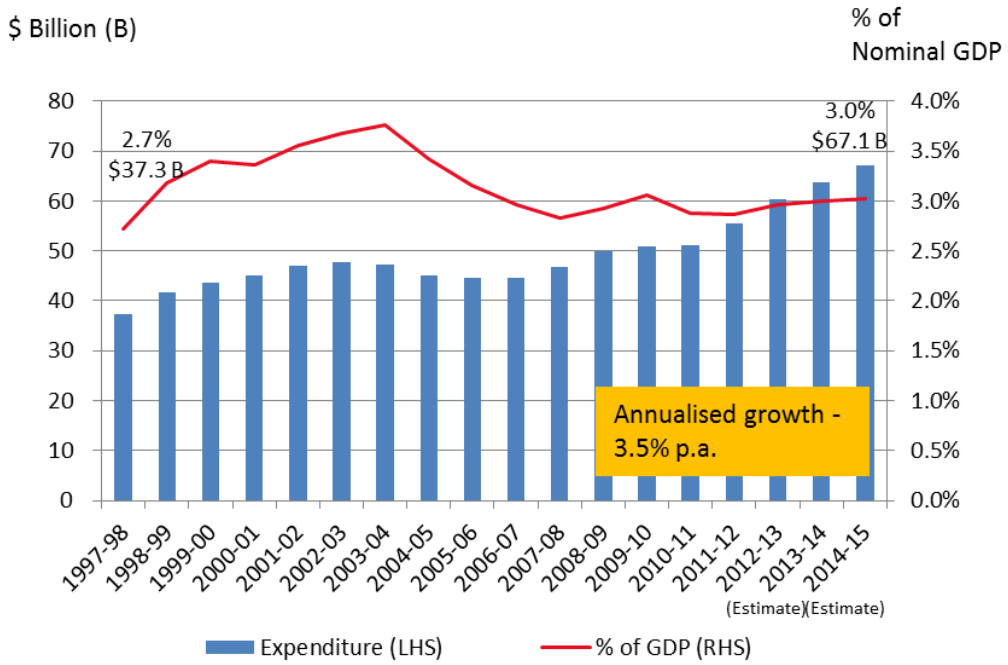
(b) launch of free senior secondary education as from the 2008/09 school year, implementation of the new senior secondary curriculum from the 2009/10 school year and various measures from the 2009/10 school year to stabilise the secondary school sector in the light of the temporary decline in Secondary 1 student population decline (including reduction of allocation class size, Voluntary Optimisation of Class Structure Scheme). From 2007-08 to 2014-15, government expenditure on secondary education has increased by around $6.7 billion;

(c) launch of small class teaching in public sector primary schools as from the 2009/10 school year. From 2008-09 to 2014-15, government expenditure on primary education has increased by around $3.8 billion; and

(d) launch of the 334 new academic structure in the tertiary sector from the 2012/13 school year, and increasing publicly-funded FYFD places for the 2012/13 - 2014/15 triennium to 15 000 places a year and senior year undergraduate places to 8 000 a year. From 2011-12 to 2014-15, government expenditure on post-secondary education has increased by around $4.5 billion.

3.16 As compared with the 1997-98 recurrent expenditure of $37.3 billion on education, the 2014-15 provision of $67.1 billion has increased by about 80% over the 17 years from 1997-98 to 2014-15 (*Chart 3.6*). This is higher than the 61.5% cumulative growth of the nominal GDP.

Chart 3.6 – Recurrent education expenditure from 1997-98 to 2014-15



Projection

3.17 The total population for the age group of 3 to 21 is projected to drop by 8.1% from 1.166 million in 2014 to 1.072 million in 2041. Specifically, the group is forecast to –

(a) drop by 5.7% from 1.166 million in 2014 to 1.099 million in 2020, then

(b) rise by 8.2% to the peak of 1.189 million in 2029, then

(c) drop by 9.8% to 1.072 million in 2041.

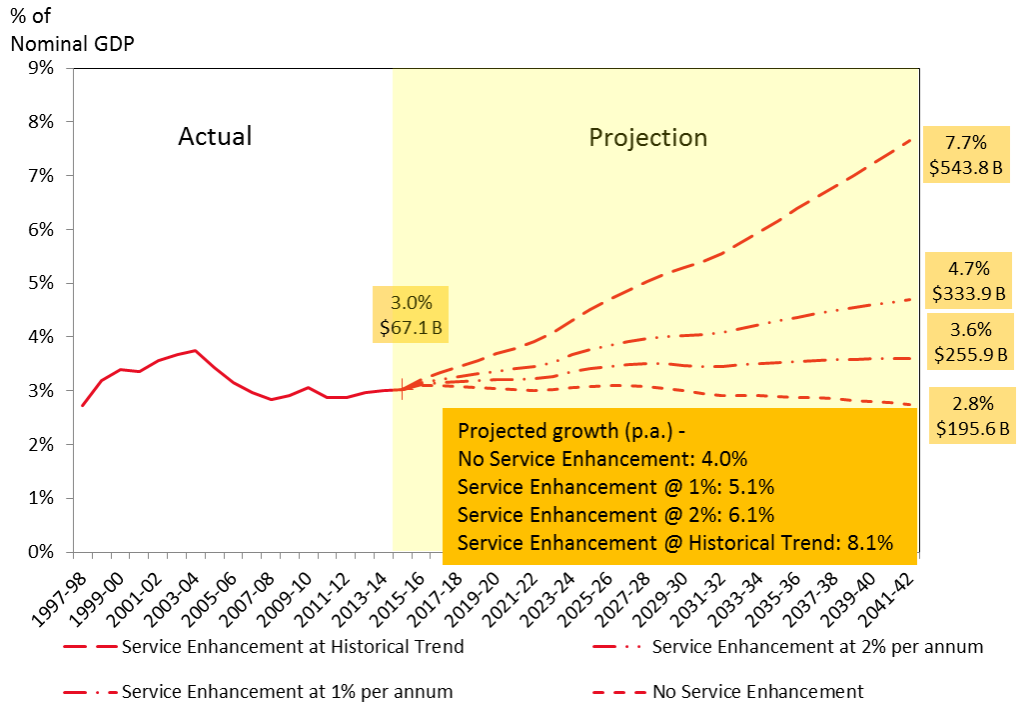
3.18 Based on the assumptions detailed in **Annex D,** recurrent expenditure on education is projected as follows –

(a) Under the **No Service Enhancement Scenario**, recurrent education expenditure as a percentage of nominal GDP would drop from 3% in 2014-15 to 2.8% in 2041-42, mainly owing to the expected decline in total population for the age group of 3 to 21. In dollar terms, there would still be an increase from $67.1 billion to $195.6 billion. It reflects a growth rate of **4.0% per annum**.

(b) Under the three **Service Enhancement Scenarios**, recurrent education expenditure as a percentage of nominal GDP would increase from 3% in 2014-15 to between 3.6% and 7.7% in 2041-42; or in dollar terms, from $67.1 billion to between $255.9 billion and $543.8 billion. This reflects a projected trend growth rate of **5.1% to 8.1% per annum**, exceeding the post-handover average annual growth of 3.5% in recurrent education expenditure.

The projections are illustrated in *Chart 3.7* below.

Chart 3.7 – Recurrent education expenditure from 1997-98 to 2041-42

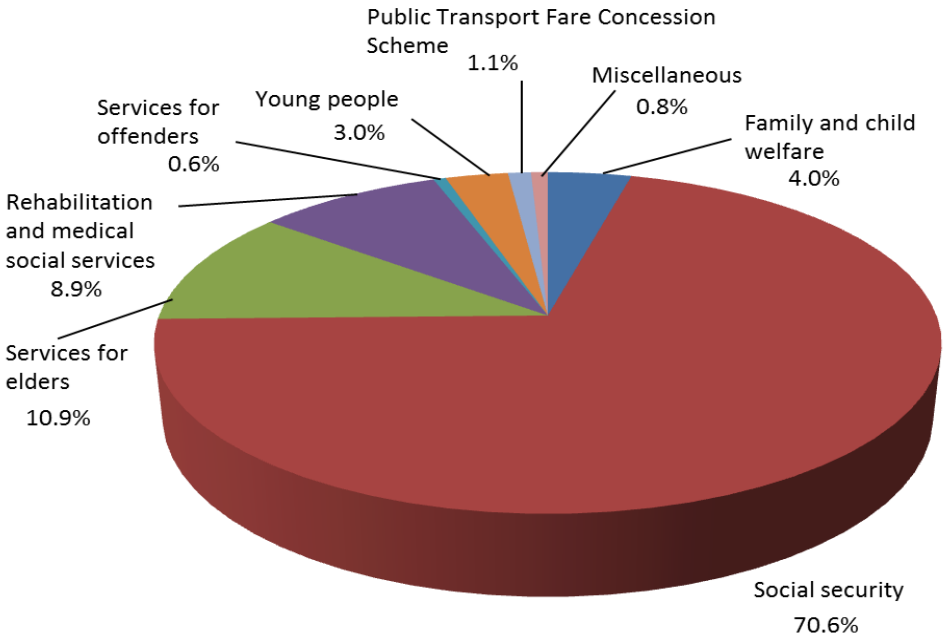


(B) Social welfare

3.19 Social welfare is the policy area group with the second largest share of recurrent government expenditure. In 2014-15, recurrent expenditure on social welfare is estimated to be $56.9 billion, representing around 18.5% of the total recurrent government expenditure or 2.6% of nominal GDP.

3.20 A breakdown of the 2014-15 recurrent expenditure on social welfare by major expenditure categories is shown below –

Chart 3.8 – Recurrent expenditure on social welfare by major expenditure categories in 2014-15 ($56.9 billion)



3.21 Around 70% of the recurrent welfare expenditure for 2014-15 (or about $39.1 billion) relate to **social security payments**, broken down as follows –

(a) Comprehensive Social Security Assistance (CSSA): Based on an average of 255 000 CSSA cases with some 432 000 recipients, the 2014-15 provision for CSSA is about $21.6 billion. At February 2014, the average CSSA payment for a four-member household is $12,438 per month.

(b) Social Security Allowance (about $17.4 billion in 2014-15):

(i) OALA – Based on an estimated caseload of 415 000 and $2,285 each case per month, the annual provision for OALA is about $11.4 billion.

(ii) OAA/Guangdong Scheme – The estimated caseload for OAA and the Guangdong Scheme is 195 000 and 31 000 respectively and the estimated annual provision is about $3.2 billion.

(iii) Disability Allowance (DA) – Based on an estimated caseload of 125 000, the annual provision is about $2.9 billion.

3.22 Around 11% of the recurrent expenditure on social welfare for 2014-15 (or some $6.2 billion) relate to **services for the elderly**. These include –

(a) over 27 000 residential places in care and attention homes and nursing homes, estimated to cost some $4 billion in 2014-15; and

(b) services for over 2 900 day care places, some 24 000 home care cases or places and 211 community elderly centres, estimated to cost some $1.8 billion in 2014-15.

3.23 The Government has introduced major policy initiatives since 1997-98 with a view to improving the scale and depth of services offered to the needy. These include –

(a) launching OALA in 2013 to supplement the living expenses of elderly persons aged 65 or above who are in need of financial support. The annual provision for OALA is about $11.4 billion in 2014-15;

(b) launching the Public Transport Fare Concession Scheme for the Elderly and Eligible Persons with Disabilities ($2 Scheme) in 2012. The average number of passenger trips involving the elderly as of end-September 2013 was around 595 200 a day, and involving persons with disabilities about 80 800 a day. The estimated government subsidy involved is around $600 million for 2014-15;

(c) increasing the support level of Dementia Supplement from 40% to 100% for the elderly in residential care homes and day care centres/units for elderly in 2012-13 with an estimated additional expenditure of $125 million each year;

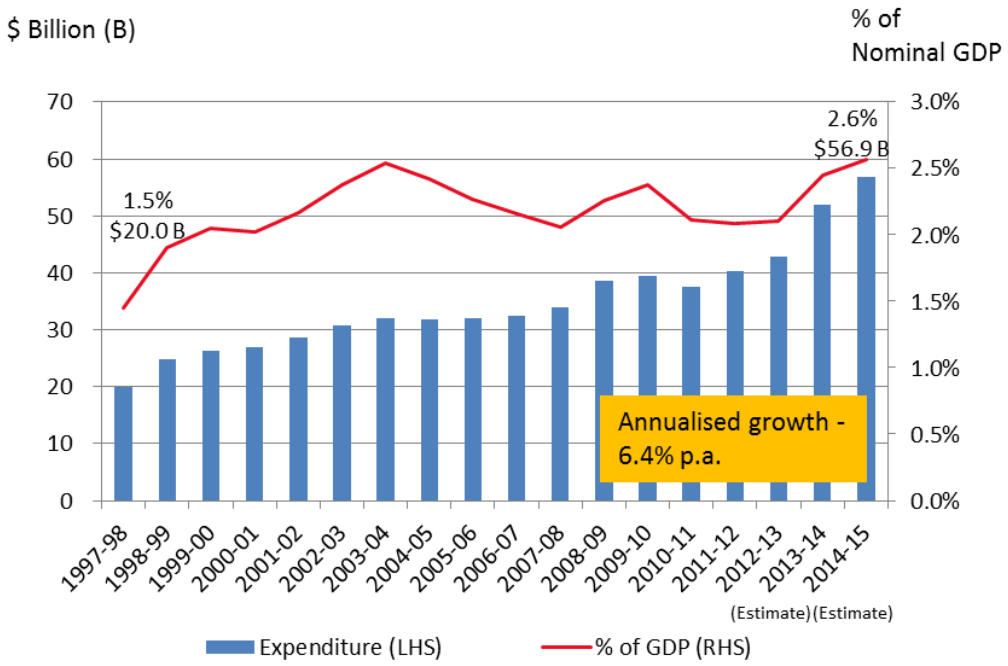
(d) implementing the Integrated Discharge Support Programme for Elderly Patients on a territory-wide basis to provide integrated support services to elderly hospital dischargees who have difficulties taking care of themselves and also to their carers. The estimated expenditure is about $171 million each year; and

(e) providing Community Living Supplement to recipients with disabilities at non-severe level, recipients in ill-health and elders in 2011-12 to better support their stay in the community ($590 million) and Residential Care Supplement to all CSSA recipients aged 60 or above who occupy non-subsidised residential care places for the elderly in 2012-13. The estimated expenditure is about $102 million each year.

3.24 As announced in the 2014 Policy Address, a Low-income Working Family Allowance (LIFA) scheme will be introduced. While details on the scheme are yet to be finalised, the planned provision for the scheme is about $3 billion in a full year, covering more than 200 000 households. Rather than excluding this major initiative from the analysis, the Working Group has assumed that the scheme would be implemented in 2015-16 and the basic parameters would not change within the forecast period and the annual provision would be adjusted in line with the CCPI.

3.25 As compared with the 1997-98 recurrent expenditure of $20 billion on social welfare, the 2014-15 provision at $56.9 billion represents a 185% quantum leap. This is much higher than the 61.5% cumulative growth of nominal GDP over the 17 years from 1997-98 to 2014-15 (*Chart 3.9*).

Chart 3.9 – Recurrent social welfare expenditure from 1997-98 to 2014-15



Projection

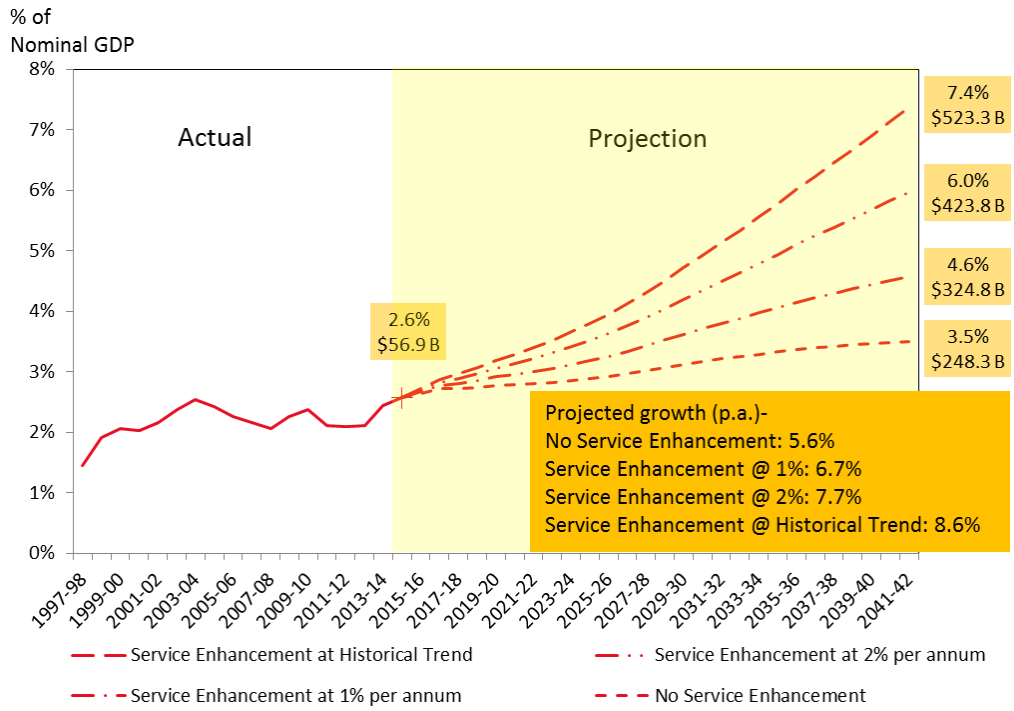
3.26 The elderly population aged 65 and above is projected to rise from 1 018 000 in 2013 to 2 560 000 in 2042. This would obviously have a major impact on the scale and cost of welfare services, many types of which are targeted at the elderly.

3.27 Taking into account the projected change in total and elderly population, recurrent expenditure on social welfare is projected to grow as follows –

(a) Under the **No Service Enhancement Scenario**, recurrent social welfare expenditure as a percentage of nominal GDP would increase from 2.6% in 2014-15 to 3.5% in 2041-42; or in dollar terms, from $56.9 billion to $248.3 billion. It reflects a growth rate of **5.6% per annum**.

(b) Under the three **Service Enhancement Scenarios**, recurrent social welfare expenditure as a percentage of nominal GDP would increase from 2.6% in 2014-15 to between 4.6% and 7.4% in 2041-42; or in dollar terms, from $56.9 billion to between $324.8 billion and $523.3 billion. This implies a projected trend growth rate of **6.7% to 8.6% per annum**, higher than the post-handover average annual growth of 6.4% in recurrent social welfare expenditure.

Chart 3.10 – Recurrent social welfare expenditure from 1997-98 to 2041-42



(C) Health

3.28 Health is the policy area group with the third largest share of recurrent government expenditure. In 2014-15, recurrent government expenditure on health is estimated to be $52.4 billion, representing around 17% of the total recurrent government expenditure or 2.4% of nominal GDP.

3.29 Around 90% of the recurrent expenditure on health is for providing recurrent subvention to the Hospital Authority for its public health services while the remaining 10% is mainly on primary healthcare carried out by the Department of Health.

3.30 The Hospital Authority is a statutory body established on 1 December 1990 under the Hospital Authority Ordinance (Cap. 113) to manage all public hospitals in Hong Kong. Being the principal provider of public healthcare service in Hong Kong, the Hospital Authority assumes the important role of the safety net in the public healthcare system and looks after nearly 90% of inpatient services and 30% of outpatient services in Hong Kong. It manages 42 public hospitals and institutions, 48 specialist outpatient clinics (SOPC) and 73 general outpatient clinics (GOPC). The recurrent subvention to the Hospital Authority supports the delivery of public medical services, including –

(a) In-patient services

The Hospital Authority plans to provide around 27 645 hospital beds as at 31 March 2015 for in-patient services. Based on the Hospital Authority's utilisation profile in 2012-13, it utilised 65% of its recurrent resources for provision of in-patient services which comprises 54% for acute care (for general and mentally ill patients) and 11% for extended care (for convalescence, infirmary, mentally handicapped and mentally ill patients).

(b) Ambulatory and community care

The Hospital Authority utilised about 35% of its recurrent resources for provision of ambulatory and community care services which include accident & emergency (A&E) services, SOPC, GOPC, day hospital as well as community services such as outreach visit by community nurse and psychiatric outreach services in 2012-13. Of this 35%, 31% was taken up by SOPC (21%), GOPC (5%) and A&E (5%). In 2014-15, the Hospital Authority will provide services for around 6 867 000 SOPC, 5 709 000 GOPC and 2 237 000 A&E attendances.

3.31 The resources utilization profiles of the Hospital Authority and the Department of Health are illustrated in *Charts 3.11 and 3.12*.

Chart 3.11 – Hospital Authority's Resource Utilisation Profile in 2012-13

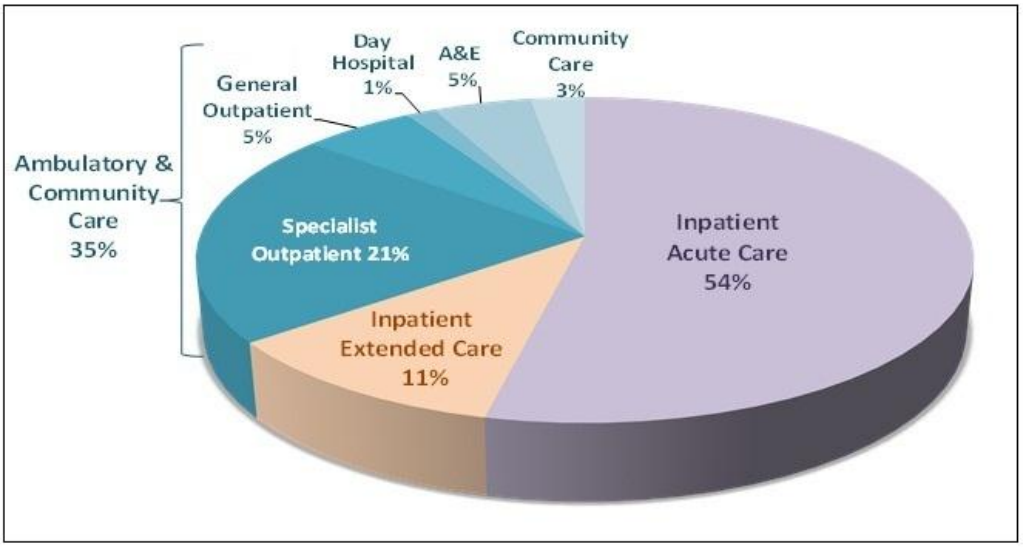
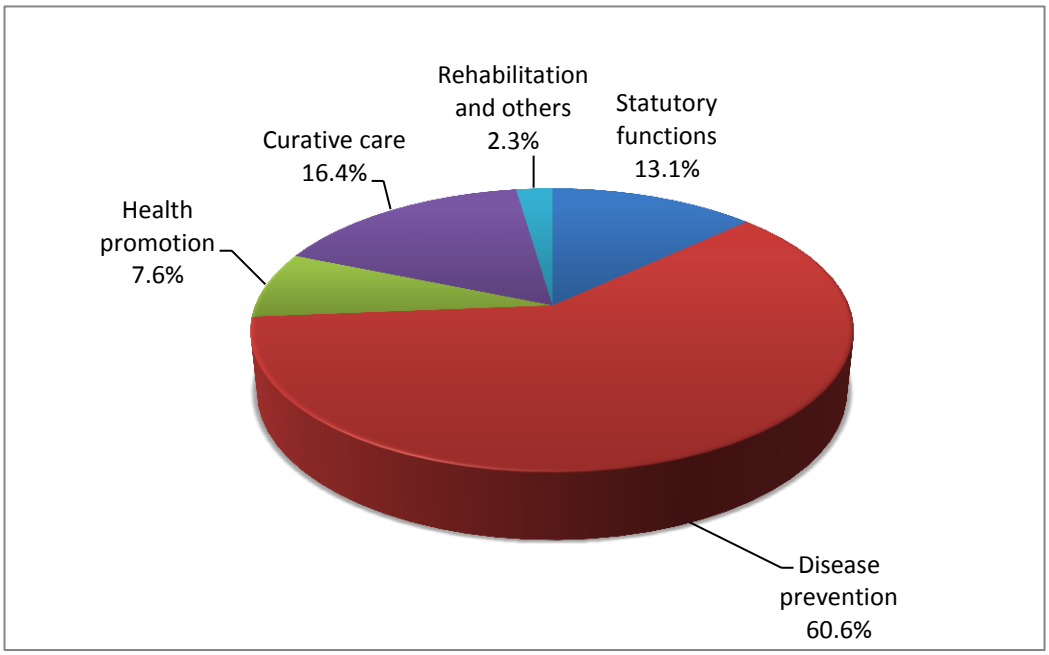


Chart 3.12 – Department of Health's Planned Resource Utilisation Profile in 2014-15



3.32 Since 1997-98, a number of major health policy initiatives have been or are planned to be introduced. These include –

For Hospital Authority

(a) opening 980 additional general (acute and convalescent) hospital beds between 2009-10 and 2014-15, with annual provision of $1.3 billion in 2014-15;

(b) introducing community-based recovery support programme for discharged mentally ill patients using case management approach since 2009-10 and implementing the district-based Community Case Management Programme for persons with severe mental illness since 2010-11 with annual provision of about $0.2 billion in 2014-15;

(c) enhancing primary care services through the development of community health centres/networks and strengthening chronic disease management for diabetic and hypertensive patients since 2009-10 with annual provision of $0.6 billion in 2014-15;

(d) improving the quality of drugs provided to Hospital Authority

patients by widening the scope of Hospital Authority Drug Formulary for more new drugs since 2009-10 with annual provision of $0.7 billion in 2014-15;

(e) enhancing the pharmaceutical product procurement system, supply chain management and drug quality assurance since 2009-10 with annual provision of around $0.2 billion in 2014-15;

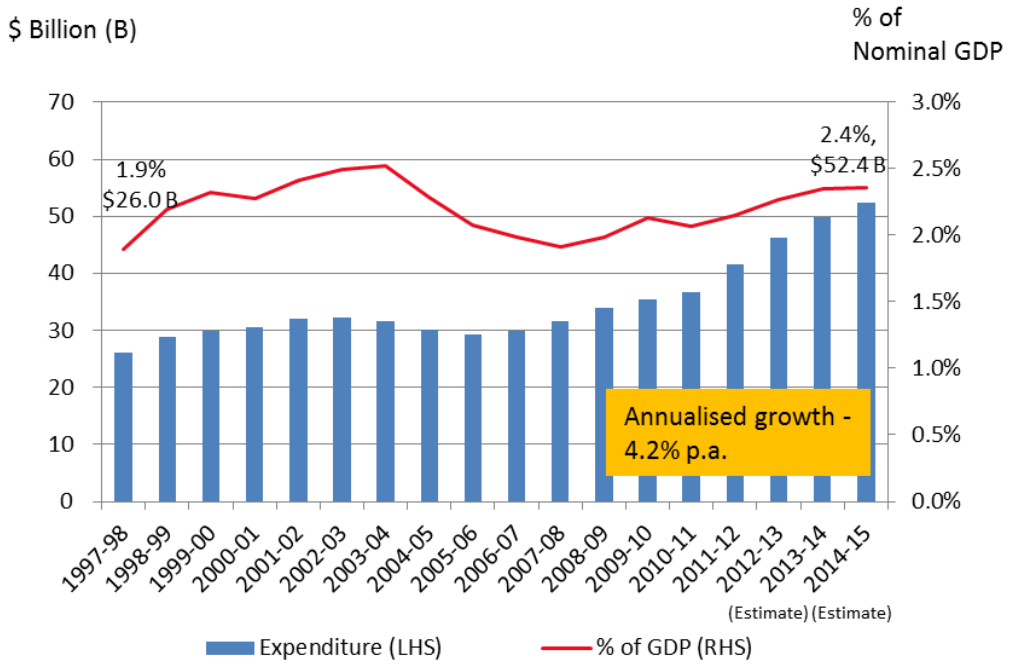
For Department of Health

(f) introducing the Elderly Health Care Voucher Pilot Scheme on 1 January 2009 for enhancing the provision of primary care services to the elderly. The Scheme has been regularized since January 2013. The voucher value per annum was doubled from $500 to $1,000 in 2013 and is further doubled to $2,000 pursuant to the 2014 Policy Address. The provision for 2014-15 is $0.8 billion; and

(g) operation of the Vaccination Office ($0.12 billion in 2014-15), which oversees, inter alia, the operation of two vaccination subsidy schemes, i.e. subsidising children aged six months to less than six years to receive seasonal influenza vaccination at private practitioners' clinics since 2008-09 and subsidising elders aged 65 or above to receive seasonal influenza and pneumococcal vaccinations at private practitioners' clinics since 2009-10.

3.33 As compared with the 1997-98 recurrent expenditure on health of $26 billion, the 2014-15 expenditure at $52.4 billion represents an increase of about 101%. This is higher than the 61.5% cumulative growth of nominal GDP over the 17 years from 1997-98 to 2014-15 (*Chart 3.13*). The annual subvention for the Hospital Authority has increased from $23.8 billion in 1997-98 to $47.2 billion in 2014-15.

Chart 3.13 – Recurrent health expenditure from 1997-98 to 2014-15



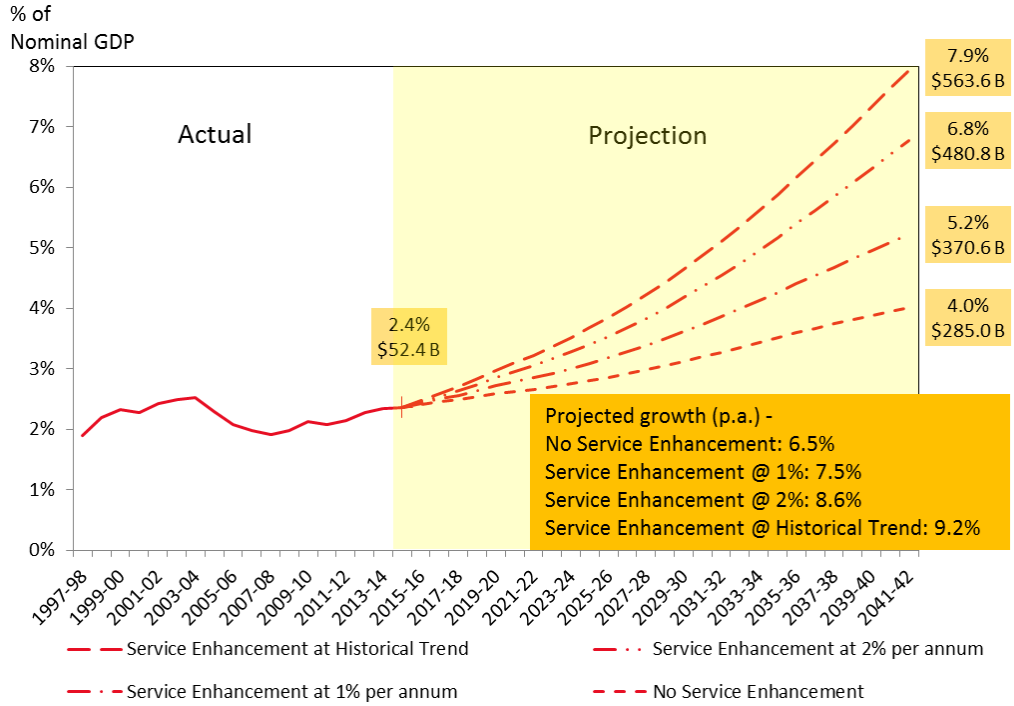
Projection

3.34 Taking into account the projected change in total and elderly population, recurrent expenditure on health is projected to grow as follows –

(a) Under the **No Service Enhancement Scenario**, recurrent health expenditure as a percentage of nominal GDP would increase from 2.4% in 2014-15 to 4.0% in 2041-42; or in dollar terms, from $52.4 billion to $285.0 billion. It reflects a growth rate of **6.5% per annum**.

(b) Under the three **Service Enhancement Scenarios**, recurrent health expenditure as a percentage of nominal GDP would increase from 2.4% in 2014-15 to between 5.2% and 7.9% in 2041-42; or in dollar terms, from $52.4 billion to between $370.6 billion and $563.6 billion. This implies a projected trend growth rate of **7.5% to 9.2% per annum**, higher than the post-handover average annual growth of 4.2% in recurrent expenditure on health services.

Chart 3.14 – Recurrent health expenditure from 1997-98 to 2041-42



3.35 The projected increase in recurrent health expenditure is due to the increase in total and elderly population, the assumed service enhancement and price increase. Amid the accelerating advancement of medical knowledge and technology in the global healthcare industry, the Hospital Authority would need to continue to upkeep its safety and quality of care to a level highly comparable to the international standard. Additional resources are 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). These initiatives are generally termed as "medical advancement" which has been factored in the

assumed service enhancement in the projections. The historical service enhancement factor since 1997-98 was 1.06% per annum, and that since 2007-08 was 2.63% per annum. After much deliberations, the Working Group agreed to adopt the factor of 2.63% for the Service Enhancement at Historical Trend Scenario in order to avoid the distortions caused by SARS.

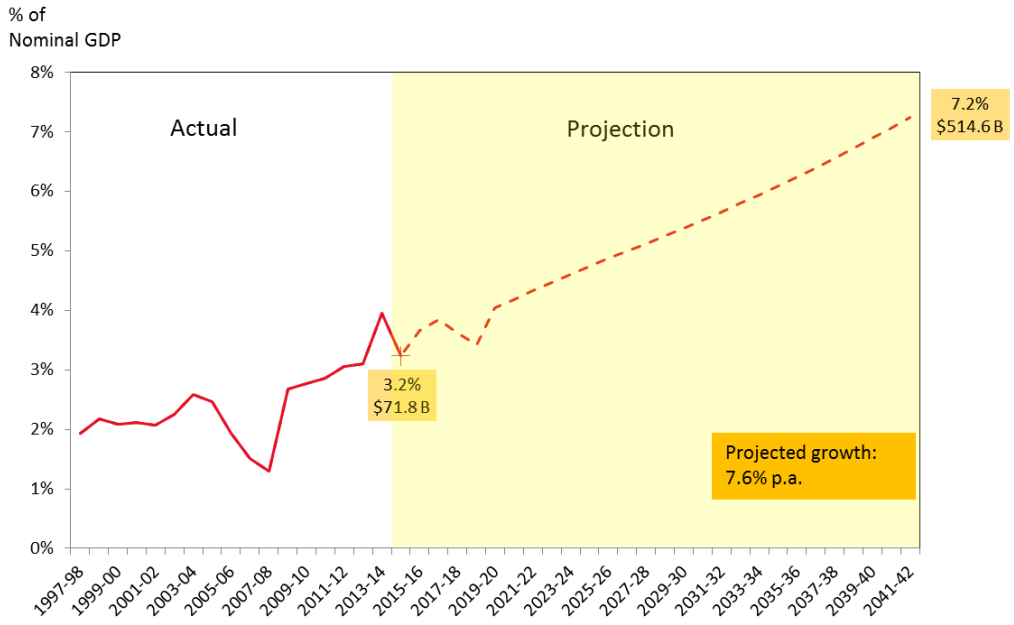
(D) Capital works

3.36 The Government is committed to taking forward infrastructure projects to foster economic development and enhance the quality of life of Hong Kong's citizens. These include highway and transport infrastructure, environmental protection projects, schools, elderly facilities as well as hospital beds which are indirectly age-related. The estimated capital works expenditure to be incurred under the Capital Works Reserve Fund (CWRF) and the Lotteries Fund in 2014-15 is $71.8 billion.

3.37 As compared with the spending of $26.5 billion in 1997-98, the annual cash flow on capital works has increased by a total of about 171% over 17 years.

3.38 Whilst the cash flow requirements on capital works tends to be volatile, the Working Group noted that over a period of some 30 years (from 1982-83 upon the establishment of the Capital Works Reserve Fund to 2014-15), capital works expenditure was on average 3.4% of real GDP. The Working Group assumes that capital works expenditure would be maintained at 3.4% of real GDP over the forecast period. Despite this, construction prices tended to and are assumed to rise faster than general inflation as measured by the GDP deflator. In terms of nominal GDP, capital works expenditure is projected to increase from 3.2% in 2014-15 to 7.2% in 2041-42. In dollar terms, capital works expenditure is projected to increase from $71.8 billion to $514.6 billion, at a growth rate of **7.6% per annum**, higher than the post-handover average annual growth of 6.0% (*Chart 3.15*).

Chart 3.15 – Capital works expenditure from 1997-98 to 2041-42

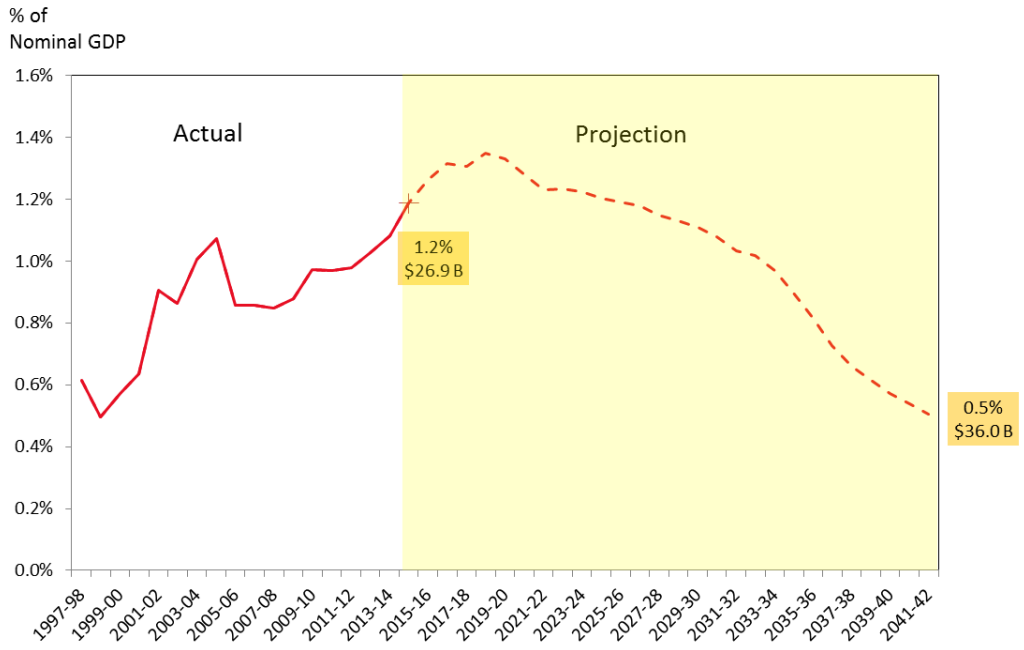


(E) Civil service pensions and Civil Service Provident Fund/ Mandatory Provident Fund contributions

3.39 Pension benefits are payable mainly to the retired civil servants and judicial officers who joined the services before 1 June 2000. The expenditure comprises mainly two elements, namely (a) lump sum pensions gratuity payable at the time of the officer's retirement (commuted pension) and (b) a monthly pension till the pensioner is not eligible for payment. Pension payments are statutory liabilities. As at end-March 2013, there are about 116 000 serving pensionable officers and some 117 000 pensioners.

3.40 On the basis of an actuarial assessment on pension liability updated in October 2013, it is projected that the Government's expenditure on public and judicial service pension benefits would increase gradually from $26.9 billion in 2014-15 to the **peak at $50.9 billion in 2032-33**, when most of the pensionable officers would be retiring and receiving their lump sum pension gratuities over the period. The expenditure is projected to decrease henceforth to $36 billion by 2041-42. In terms of percentage of nominal GDP, pension expenditure would be 1.2% in 2014-15 and 0.5% in 2041-42 (*Chart 3.16*).

Chart 3.16 – Pension expenditure from 1997-98 to 2041-42



3.41 Civil servants joining the service on or after 1 June 2000 are no longer eligible for pension upon their retirement. They are eligible for employer's contribution to Mandatory Provident Fund (MPF) and then Civil Service Provident Fund (CSPF) upon progressing onto permanent terms of appointment in three years' time.

3.42 Expenditure on MPF/CSPF contributions for the existing level of staff is projected to increase from $2.1 billion in 2014-15 to $32.3 billion by 2041-42. This factor has been taken into consideration in the projection of Government's total expenditure.

(F) Other Expenditure

3.43 The projections in sections (A) – (E) above have yet to cover –

(a) recurrent government expenditure on security, infrastructure, economic, housing[3], environment and food, community and external affairs, and support (other than pension benefits) (termed as "**other recurrent expenditure**" in this report), which are less affected by age-related changes in population structure;

(b) **non-recurrent expenditure**, which is expenditure on items of a one-off nature but not involving the acquisition or construction of physical assets; and

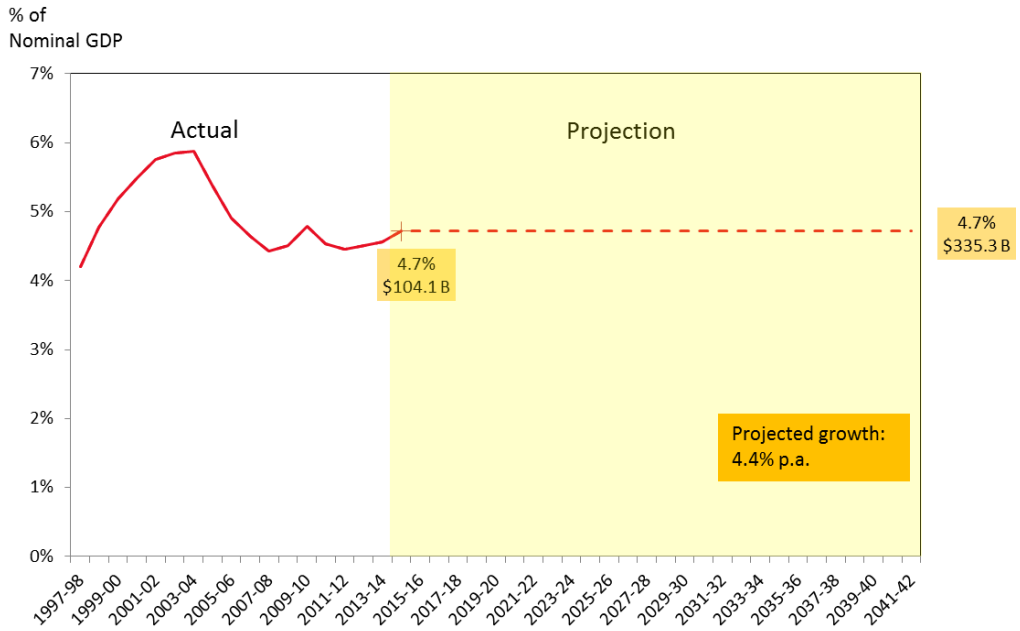
(c) **other capital expenditure**, which includes purchases of equipment and payment from the Capital Investment Fund, Disaster Relief Fund, Innovation and Technology Fund, etc.

3.44 Based on the actual expenditure trends in these portfolios in recent years, the Working Group has assumed that these expenditures would grow as a constant share of nominal GDP from 2014-15 to 2041-42. The expenditure projections for these are as follows –

[3] This expenditure is for exercising building control of former Housing Authority buildings and facilitate the development of private residential property market. It should be distinguished from the funding support for Housing Authority for the construction of public housing.

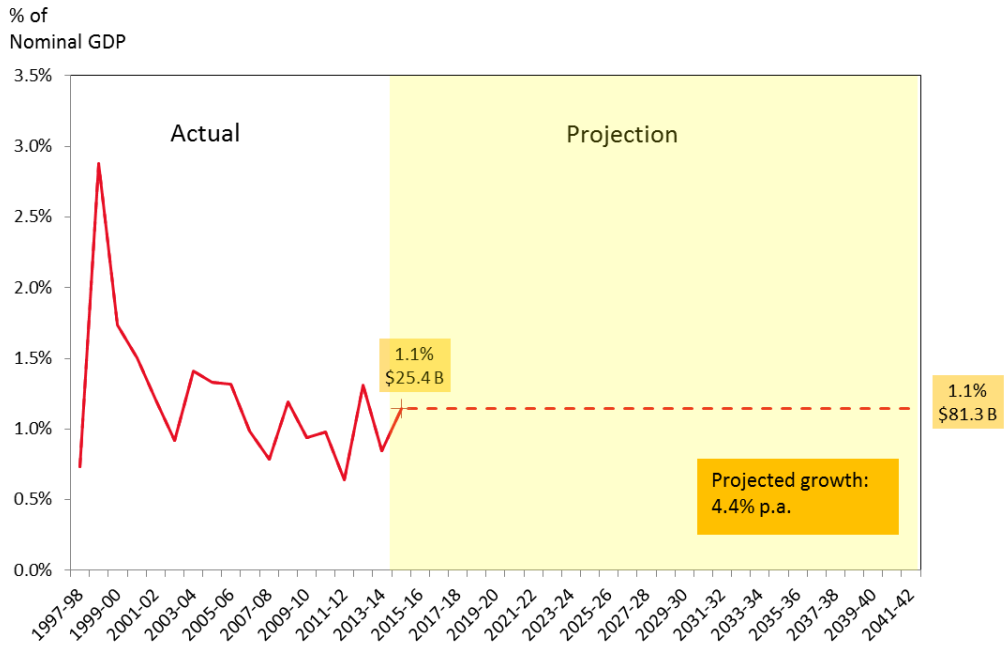
(a) **Other recurrent expenditure** is projected to stay at 4.7% of nominal GDP from 2014-15 to 2041-42; or in dollar terms, from $104.1 billion to $335.3 billion, reflecting a growth rate of 4.4% per annum (*Chart 3.17*).

Chart 3.17 – Other Recurrent Expenditure from 1997-98 to 2041-42



(b) **Non-recurrent** and **other capital expenditure** (after adjustments to exclude one-off fund injections and relief measures) is projected to stay at 1.1% of nominal GDP from 2014-15 to 2041-42; or in dollar terms, increase from $25.4 billion to $81.3 billion, reflecting a growth rate of 4.4% per annum (*Chart 3.18*).

Chart 3.18 – Non-recurrent and other capital expenditure from 1997-98 to 2041-42



(G) Interest Expenses

3.45 Taking into account the revenue projections in Chapter 4, there would be projection scenarios/cases where the fiscal reserves balance would not be sufficient to finance the funding shortfall up to 2041-42. Under these situations, loan financing would be assumed in the projection. Interest cost for such borrowing is assumed at 3.5% per annum, taking into account the prevailing 10-year bond yields and the possible upward trend in the coming years. In the worst scenario, i.e. the Service Enhancement at Historical Trend Scenario under the Shock Case, interest expenses for 2041-42 would reach 8.6% of the nominal GDP, or $409.2 billion. The projected interest expenses have been included in the projection on total government expenditure as appropriate.

Housing Authority

3.46 The expenditure of the Housing Authority does not form part of the government expenditure and is therefore not covered in the projections discussed in the previous sections. However, the Working Group reckons that housing is a top priority of the Government and commitments on the housing programme would have substantive financial implications on the public sector.

3.47 The Housing Authority is a statutory body established in April 1973 under the Housing Ordinance (Cap. 283). It develops and implements a public housing programme which seeks to achieve the Government's policy objective to meet the housing needs of low-income families which cannot afford private accommodation.

3.48 For the purpose of assessing the fiscal pressure which the housing construction programme may have on the Government, the Working Group has examined the preliminary longer term projections of the Housing Authority and has assumed that the funding shortfall of the Housing Authority would be met by government injection in entirety. The Working Group has examined two scenarios –

(a) Scenario 1 – this scenario assumes that the Public Rental Housing (PRH) rent increase is at 5% biennially.

Under this scenario, the projected funding shortfall for the Housing Authority could be $31 billion at the beginning of 2019-20. The amount of funding source required every three years thereafter could be in the range of $29 billion to $82 billion. The total funding shortfall could reach about $490 billion by 2041-42.

(b) Scenario 2 – this scenario assumes that PRH rent increase is at 10% biennially.

Under this scenario, the projected funding shortfall for the Housing Authority could be $27 billion at the beginning of 2020-21. The amount of funding source required every three years thereafter could vary from $15 billion to $33 billion. The total funding shortfall could reach about $130 billion by 2041-42.

3.49 The above analysis assumes that the Housing Authority would be able to comply with the commitment in the 2013 Policy Address, to provide 20 000 PRH units and 5 000 Home Ownership Scheme (HOS) units every year. It does not reflect the commitment in the 2014 Policy Address to provide 8 000 instead of 5 000 HOS units every year. The analysis is without prejudice to the future negotiation between the Government and the Housing Authority.

Conclusion

3.50 Assuming that the economy would grow along the lines set out in the Base Case, the Government's total expenditure is projected to increase from 19% of the nominal GDP or $421.0 billion in 2014-15 to the following levels under the various scenarios –

	Total government expenditure by 2041-42	
	% of GDP	$ Billion
No Service Enhancement	23.9%	1,700
Service Enhancement @ 1% per annum	28.4%	2,018
Service Enhancement @ 2% per annum	34.0%	2,413
Service Enhancement @ Historical Trend	41.5%	2,949

3.51 If the funding shortfalls for the Housing Authority were to be absorbed as Government's ultimate liability, the projected total expenditure for the Government could increase by another $130 billion to $490 billion by 2041-42 (before the commitment announced in the 2014 Policy Address). The projection could involve an extra 0.3 to 1.5 percentage points of the nominal GDP in the years requiring Government's funding support.

3.52 Article 107 of the Basic Law requires the Government to keep the budget commensurate with the growth rate of GDP. The Working Group notes with concern that the projected expenditure growth would outpace the growth of the economy. Proposed measures to contain the expenditure growth are discussed in Chapter 7.

Chapter 4 – Revenue Projections

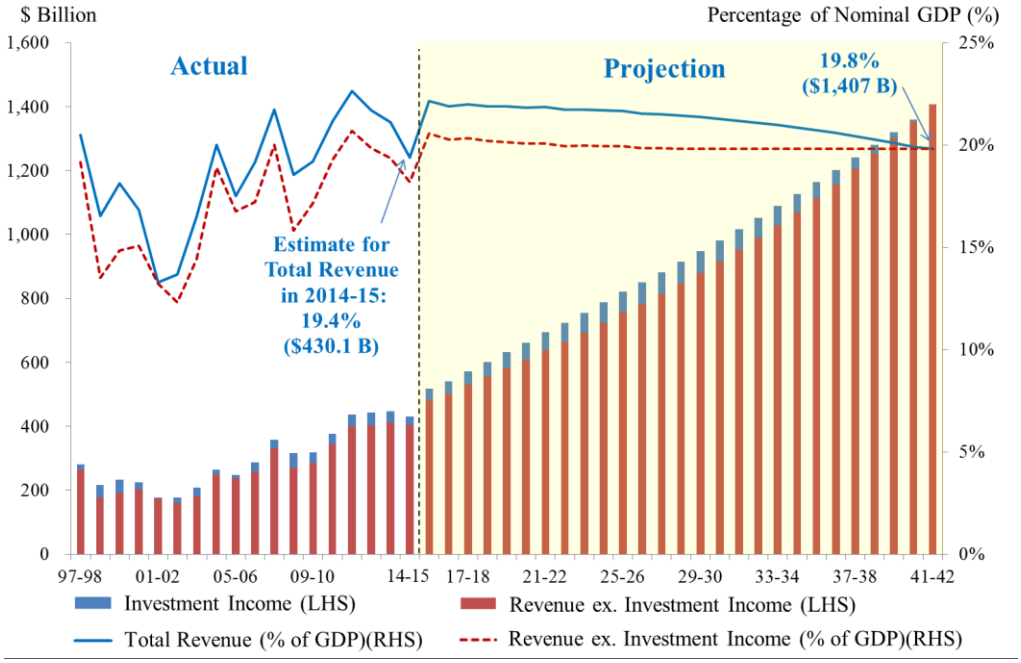
Overview

4.1 Expenditure aside, the Working Group has examined projections on government revenue for the upcoming three decades. The projections are based on an econometric modelling exercise analysing the historical relationship between the major revenue items and the boom-bust cycle of the macro economy, estimated on data over the period 1991-92 to 2012-13.

4.2 Under the **Base Case** using the macroeconomic assumptions as discussed in Chapter 2, government revenue before investment income as ratio of nominal GDP is projected to hover at around or slightly above 20% in mid 2010s up until early 2020s. From 2022 onwards, when the impact of population ageing progressively sets in to undermine economic growth potential, government revenue before investment income is projected to grow at 4.7% per annum over the period 2014-15 to 2041-42. The projected trend growth broadly aligns with the projected trend growth in nominal GDP (4.4% per annum).

4.3 Investment income is projected using an assumed 5% annual rate of return (which is the actual rate of return for 2013-14 and is broadly comparable to the average investment return of 5.3% on the fiscal reserves for the five-year period from 2010-11 to 2014-15) on the average fiscal reserves balance. After taking into account investment income, government revenue is projected to **grow at 4.5% per annum** under the **No Service Enhancement Scenario**. This lies roughly in the mid-range of the 17-year average growth since 1997-98 at 2.5% per annum and the five-year average growth since 2009-10 at 6.2% per annum. Government revenue as ratio of nominal GDP is projected at 19.8% in 2041-42; or in dollar terms, to rise from $430.1 billion in 2014-15 to $1,407 billion in 2041-42.

Chart 4.1 – Projection on government revenue

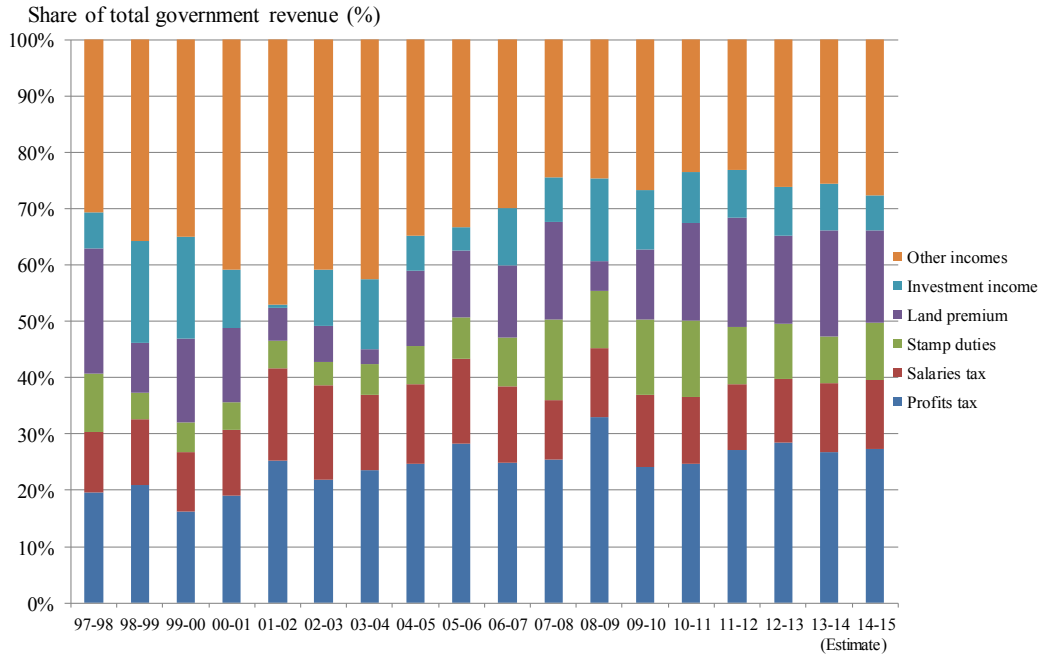


Government revenue – current profile

4.4 Total government revenue is estimated to be $430.1 billion in 2014-15. For analytical purpose, five major revenue items can be identified as key components within the total government revenue. They are profits tax (accounting for 27% of the estimated government revenue in 2014-15), land premium (16%), salaries tax (12%), stamp duties (10%) and investment income (6%), which together account for around 72% of the estimated government revenue in 2014-15. The five major revenue items aside, other incomes include revenue items such as bets and sweeps tax, rates, motor vehicle taxes, duties on alcohol, cigarettes and hydrocarbon oil, etc. (They will be collectively referred to as "other incomes excluding investment income" in paragraphs 4.13 and 4.14 below).

4.5 The relativity of these major revenue items within the total government revenue has shown considerable changes since 1997-98, as can be seen in *Chart 4.2* below –

Chart 4.2 – Share of major revenue items since 1997-98



Government revenue is highly sensitive to economic cycles

4.6 Being a small and open economy, Hong Kong's economic performance is largely susceptible to the vicissitudes of the global economic environment. Government revenue, while being highly sensitive to economic cycles, displays an even larger volatility than the ebbs and flows of the economy, as illustrated in *Chart 4.3*. For instance, when the economy was ensnared in difficulties during the Asian Financial Crisis in 1998, IT bubble burst in 2000 and the Global Financial Crisis in 2008, government revenue plunged much more sharply than that of the nominal GDP. By contrast, government revenue picked up notably faster than nominal GDP at times when the economic conditions were favourable. By and large, in the long run when economic cycles smooth out, growth in government revenue is broadly commensurate with that of nominal GDP, as evident in *Table 4.1*.

Chart 4.3 – Government revenue and nominal GDP for the years since 1991-92

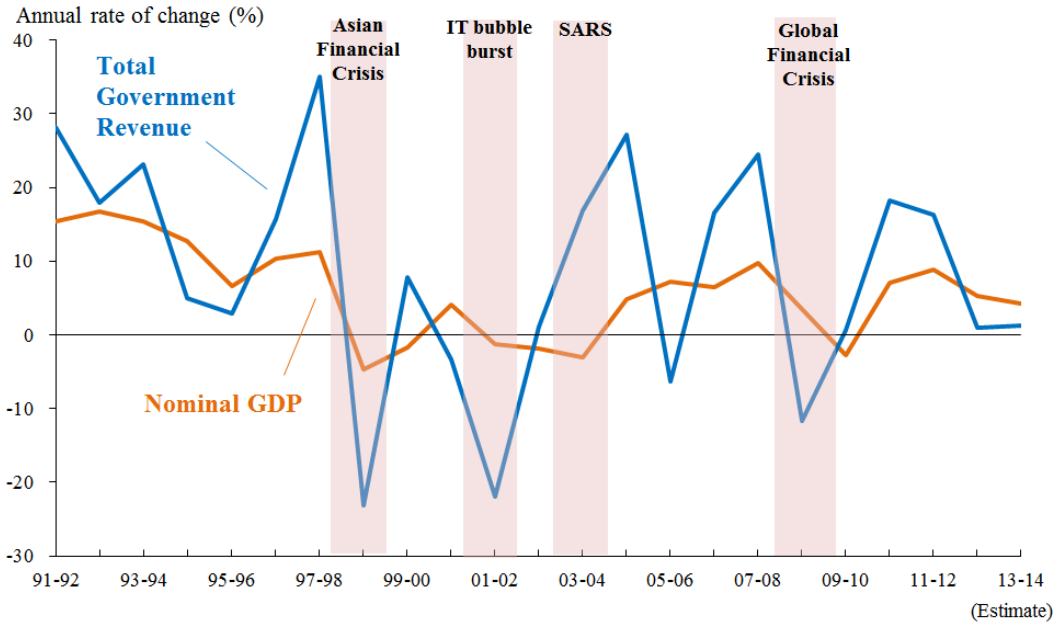


Table 4.1 – Historical growth trends of nominal GDP and government revenue

Period	Nominal GDP	Government revenue
1974-75 – 2013-14 (40 years)	10.3% p.a.	11.7% p.a. (11.7% p.a.)
1984-85 – 2013-14 (30 years)	7.9% p.a.	9.1% p.a (9.1% p.a.)
1998-99 – 2013-14 (16 years)	2.8% p.a.	3.0% p.a. (2.8% p.a.)

Note: Figures in bracket refer to the growth rate of government revenue before investment income.

4.7 To further examine the relationships between the government revenue and the overall economy, the Working Group has analysed the historical patterns between the each of the major revenue items and the then prevailing macroeconomic conditions, as discussed below. For analytical purpose, where relevant the revenue items have been adjusted for the effects of various one-off rebates or major one-off receipts (e.g. receipts from the securitization of government toll tunnels and bridge), so as to better reflect their underlying trends.

Profits tax[1]

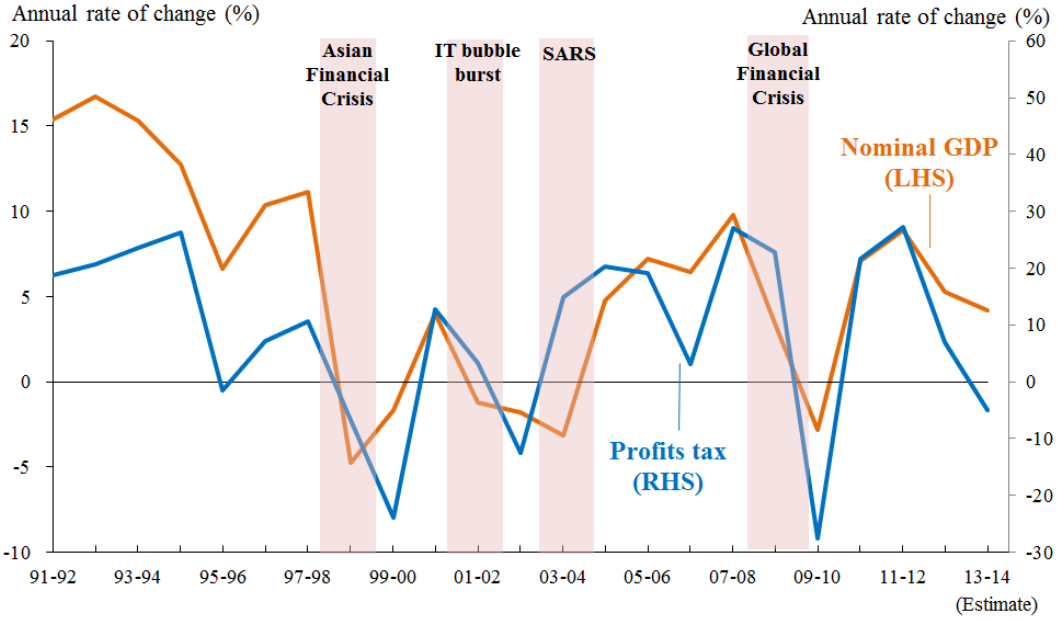
4.8 Profits tax is the largest single contributor within total government revenue, accounting for 27% of the estimated government revenue in 2014-15. As *Chart 4.4* shows, profits tax is highly sensitive to the economic ups and downs, understandably so because corporate's pricing power and hence profitability would generally improve during economic upswings, but they are also the first to be affected during economic downturns.

4.9 Specifically, the profits tax revenue plunged sharply in 1999-2000, hitting a low of 3.1% of nominal GDP, due to the negative shocks from the Asian Financial Crisis and the ensuing profit margin squeeze with the onset of deflation. As the economy turned around and rebounded swiftly after 2003, profits tax revenue as ratio of nominal GDP also rose generally, though interrupted temporarily by the recession in 2008-09. Smoothing out the economic cycles over the period 1991-92 to 2013-14, profits tax revenue as ratio of nominal GDP averaged at 4.4%.

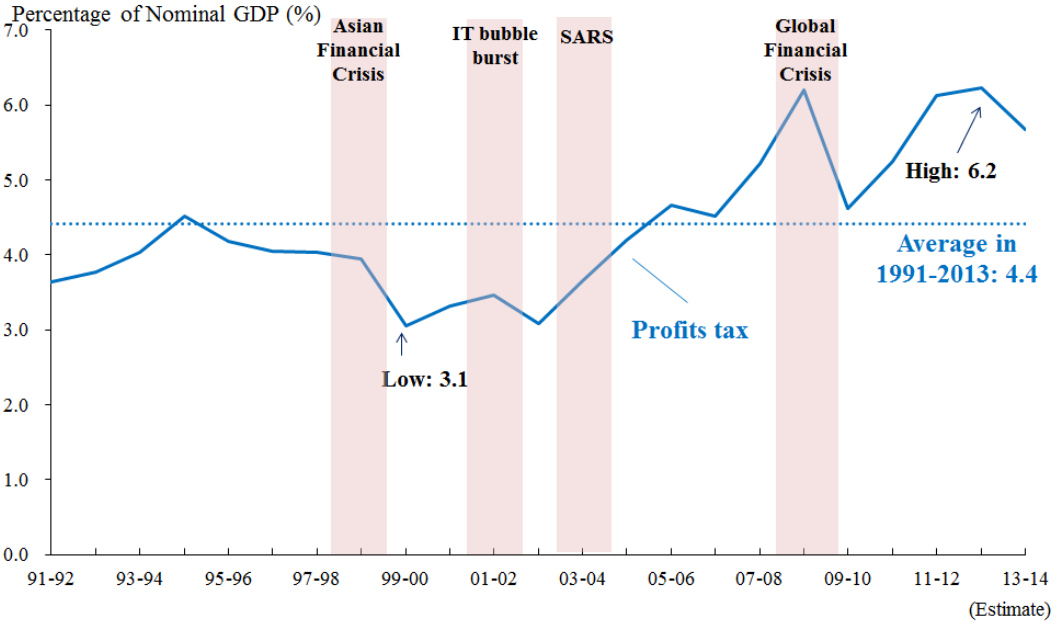
[1] Profits tax figures in paragraphs 4.8 – 4.9 have been adjusted for changes in corporate tax rate and tax rebates, and hence are different from the actual figures.

*Chart 4.4 - Profits tax **

(a) Annual rate of change



(b) As ratio of nominal GDP



Note: * Figures have been adjusted for changes in corporate tax rate and tax rebate, and hence are different from the actual figures.

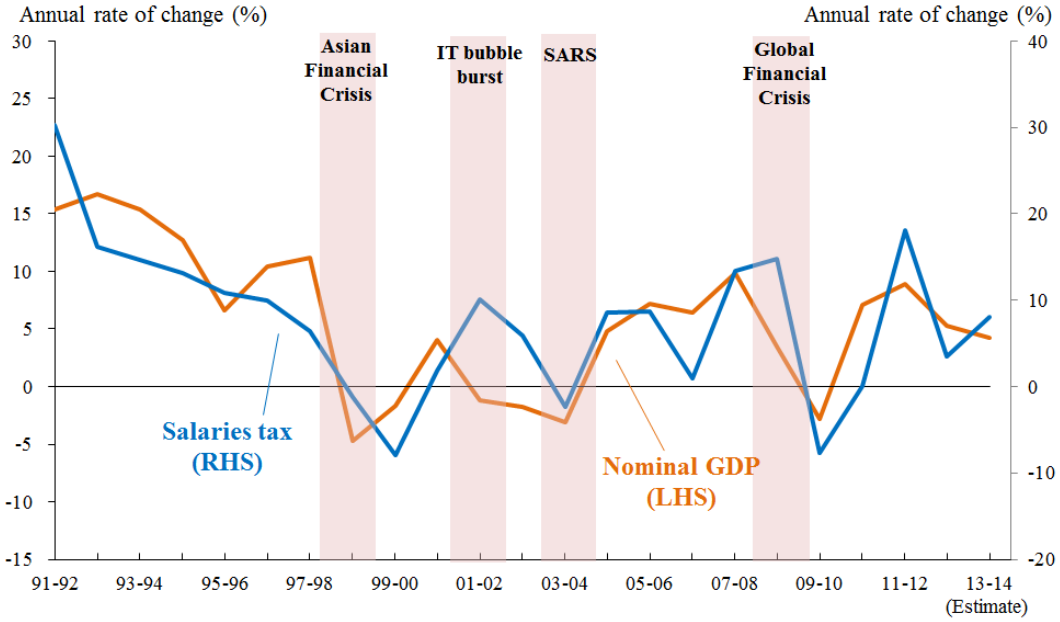
Salaries tax[2]

4.10 Salaries tax is another major item of direct tax, accounting for 12% of the estimated total government revenue in 2014-15. Salaries tax revenue, though also moving in sync with the macro-economic conditions over time, seems to be more stable than that of profits tax (*Chart 4.5*). As ratio of nominal GDP, salaries tax revenue moved within a narrow range of 2.2% (2000-01) to 3.1% (2008-09), the former being affected by the high unemployment and pay cut in the aftermath of the Asian Financial Crisis, and the latter reflecting the sanguine macro-economic conditions in 2007-08 and the tightness in the labour market. The average over the past two decades or so was 2.6% of nominal GDP.

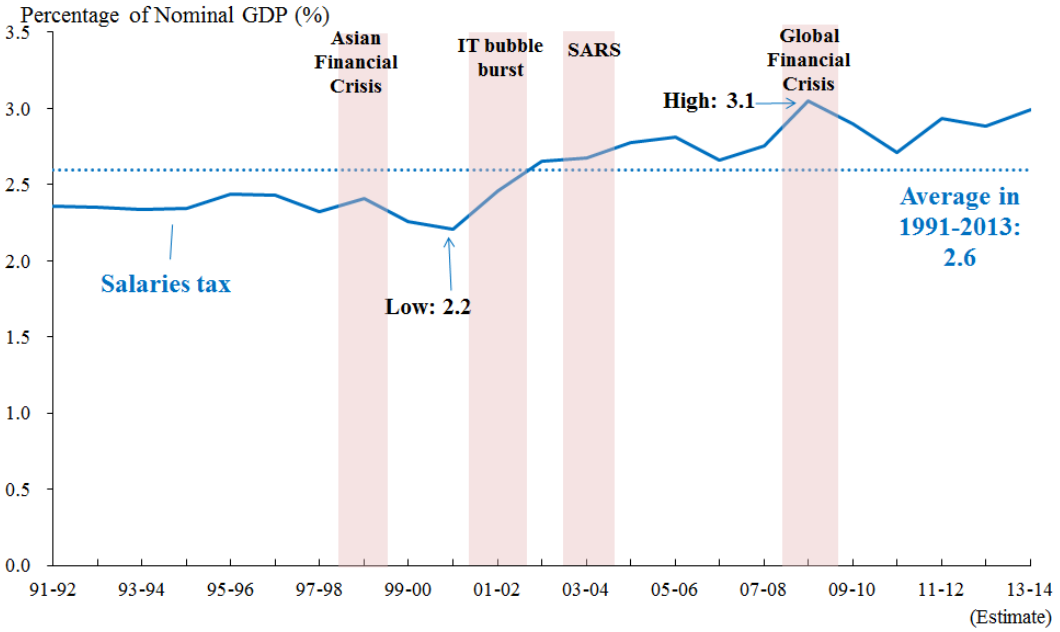
[2] Salaries tax figures in paragraph 4.10 have been adjusted for tax rebates and the effect of changes in deductible allowance over time, and hence are different from the actual figures.

*Chart 4.5 - Salaries tax **

(a) Annual rate of change



(b) As ratio of nominal GDP



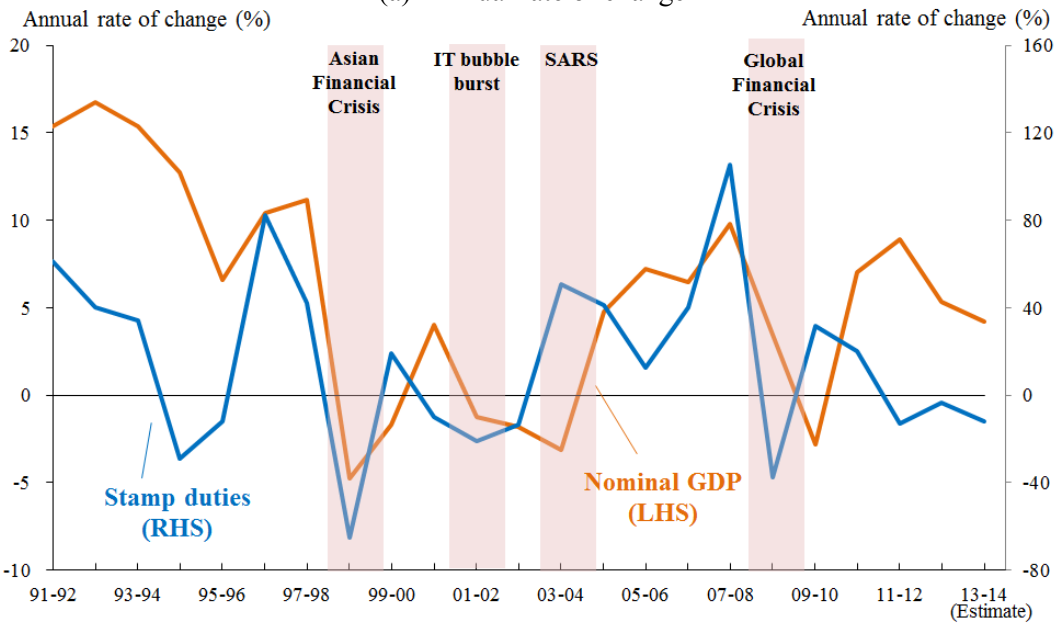
Note: * Figures have been adjusted for tax rebates and the effect of changes in deductible allowances over time, and hence are different from the actual figures.

Stamp duties

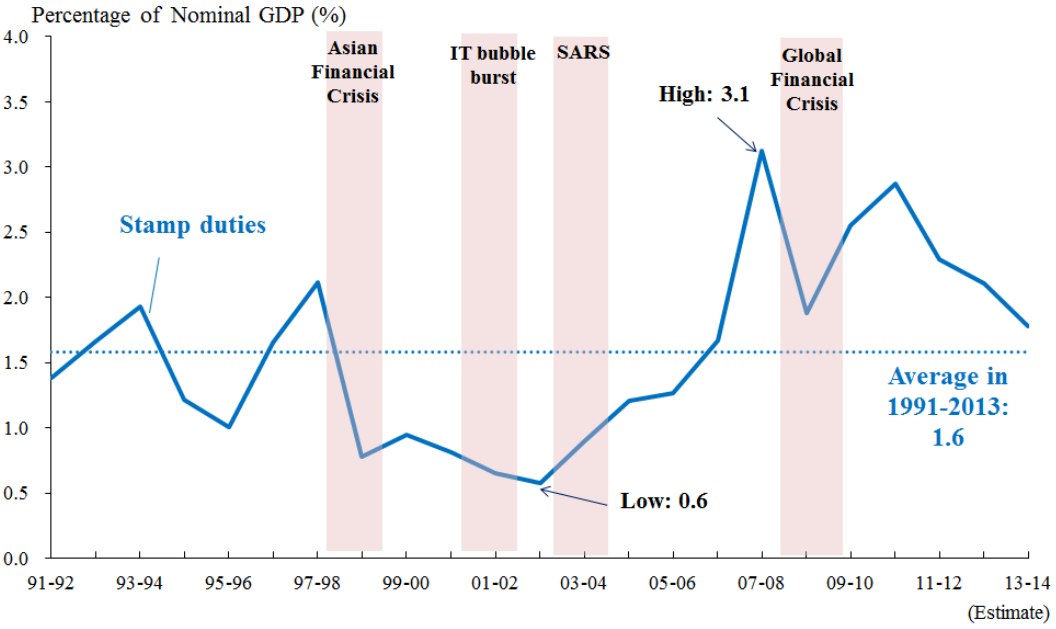
4.11 Stamp duties as a whole accounts for 10% of the estimated total government revenue in 2014-15. Stamp duties from property transactions and stock transactions each takes up around half of this revenue item. As is evident from *Chart 4.6*, stamp duties as a source of revenue is exceptionally volatile, being affected significantly by the sharp swings in asset markets through the years. For instance, when asset markets plunged during the financial crises in 1998-99 and in 2008-2009, the extent of annual rate of decline in stamp duties could range from near 40% to over 60% in an individual year. On the other hand, when asset market conditions were buoyant, stamp duties also rose sharply, much more than that of the overall macroeconomic conditions as measured by nominal GDP. As such, stamp duties as ratio of nominal GDP fluctuated markedly from a low of 0.6% in 2002-03 when the property market reached its trough, to a high of 3.1% in 2007-08 when the stock market was very vibrant, averaging at 1.6% from 1991-92 to 2013-14.

Chart 4.6 - Stamp duties

(a) Annual rate of change



(b) As ratio of nominal GDP



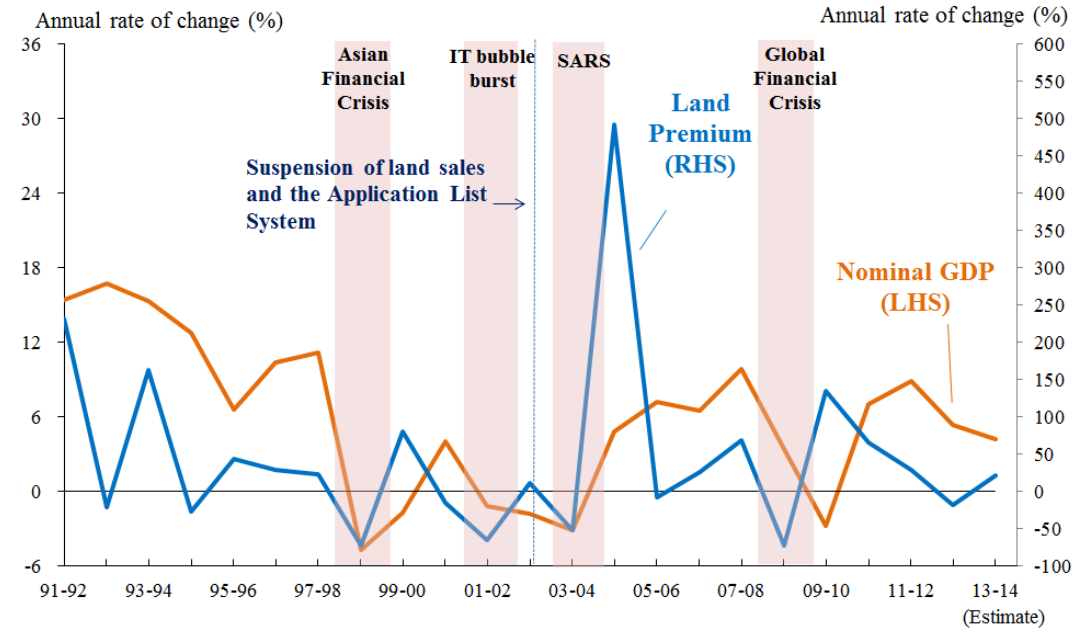
Land premium[3]

4.12 Land premium accounts for 16% of the estimated total government revenue in 2014-15. It is by far the most volatile revenue item among all the major revenue components. The swings over the years have been tremendous, being significantly affected by the property market developments on the one hand and also the Government's ensuing policy response on the other. As *Chart 4.7* shows, land premium as ratio of nominal GDP fluctuated sharply from a high of 5.2% in 1997-98 to a distinct low of 0.4% in 2003-04. In the more recent years, with the buoyancy of the property market and also the Government's efforts to put out more land, land premium as ratio of nominal GDP generally went higher, to 4.0% in 2013-14, higher than the average of 2.8% from 1991-92 to 2013-14.

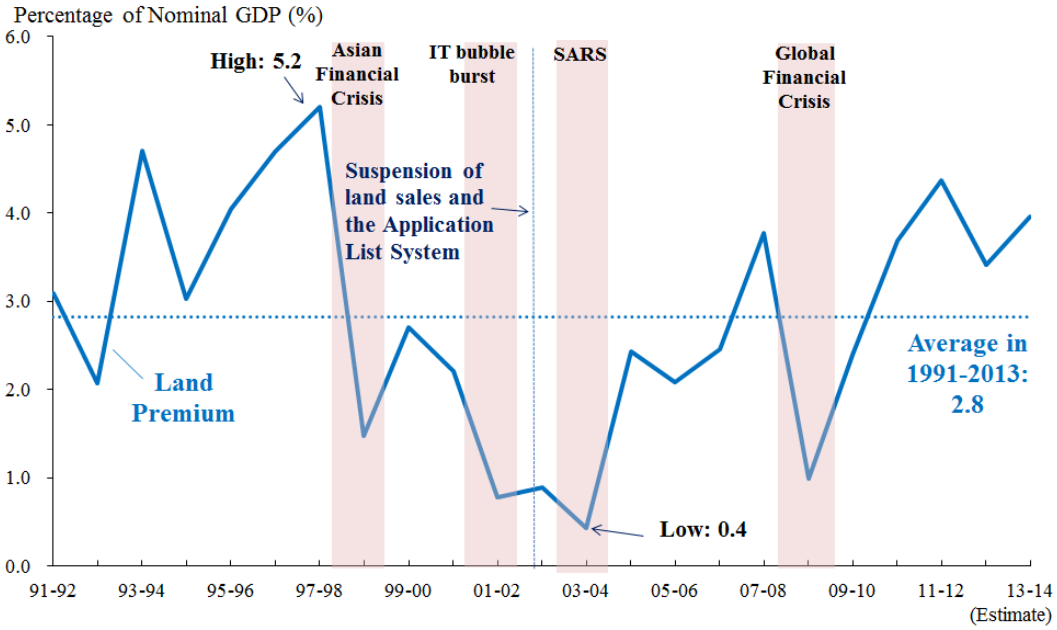
[3] Land premium figures in paragraph 4.12 have been adjusted for the share of land premium allocated in the ex-HKSARG Land Fund from 1985-86 to 1997-98, and hence are different from the actual figures.

*Chart 4.7 - Land premium **

(a) Annual rate of change



(b) As ratio of nominal GDP

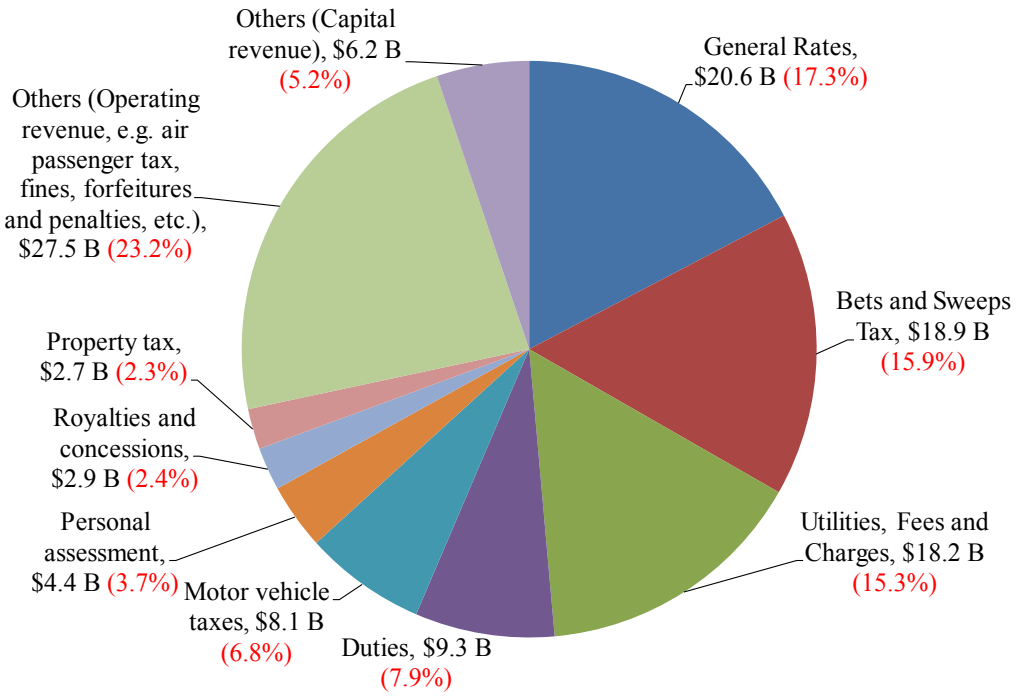


Note: * Figures have been adjusted for the share of land premium allocated in the ex-HKSARG Land Fund from 1985-86 to 1997-98, and hence are different from the actual figures.

Other incomes excluding investment income[4]

4.13 Apart from the four major components separately analysed in paragraphs 4.8 – 4.12, the remaining revenue items are much smaller in dollar terms and share, including General Rates (5% of estimated total government revenue in 2014-15); Bets and Sweeps Tax (4%); Utilities, Fees and Charges (4%); and Duties (2%). Taken together, these other revenue items account for around 28% of the estimated total government revenue in 2014-15, a detailed breakdown is given in *Chart 4.8*.

Chart 4.8 - Other incomes excluding investment income, by component in 2014-15



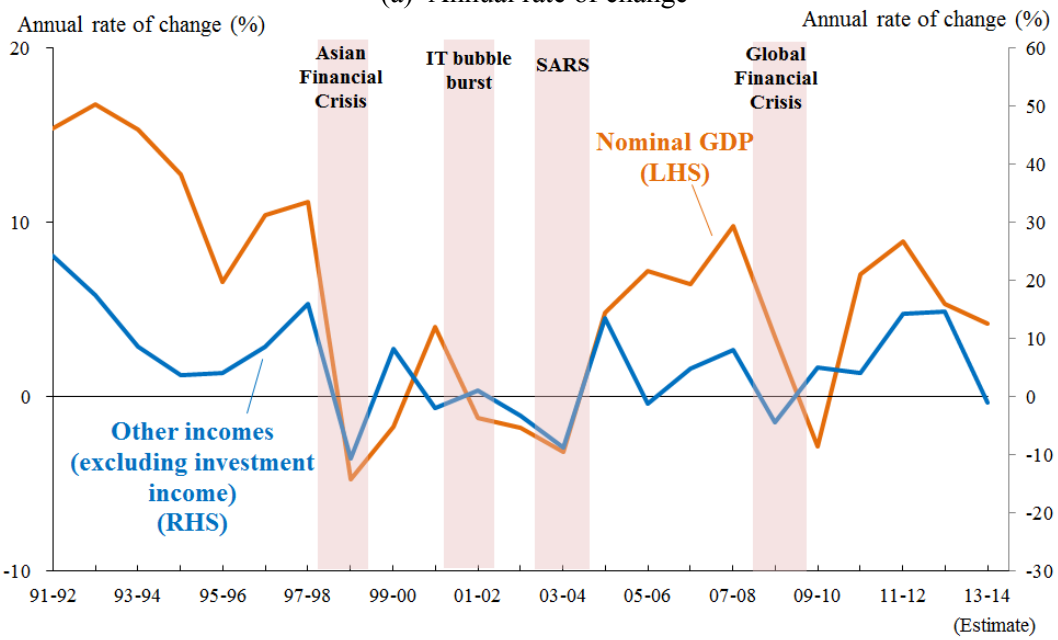
Other incomes excluding investment income, $118.8 billion in 2014-15

4.14 This revenue item, being the summation of revenue items with diverse nature, generally moved in tandem with nominal GDP over the years (*Chart 4.9*). The ratio of other income to nominal GDP moved a range of a high in 7.2% in 1992-93 to a low of 5.2% in 2008-09, averaging at 6.1% from 1991-92 to 2013-14.

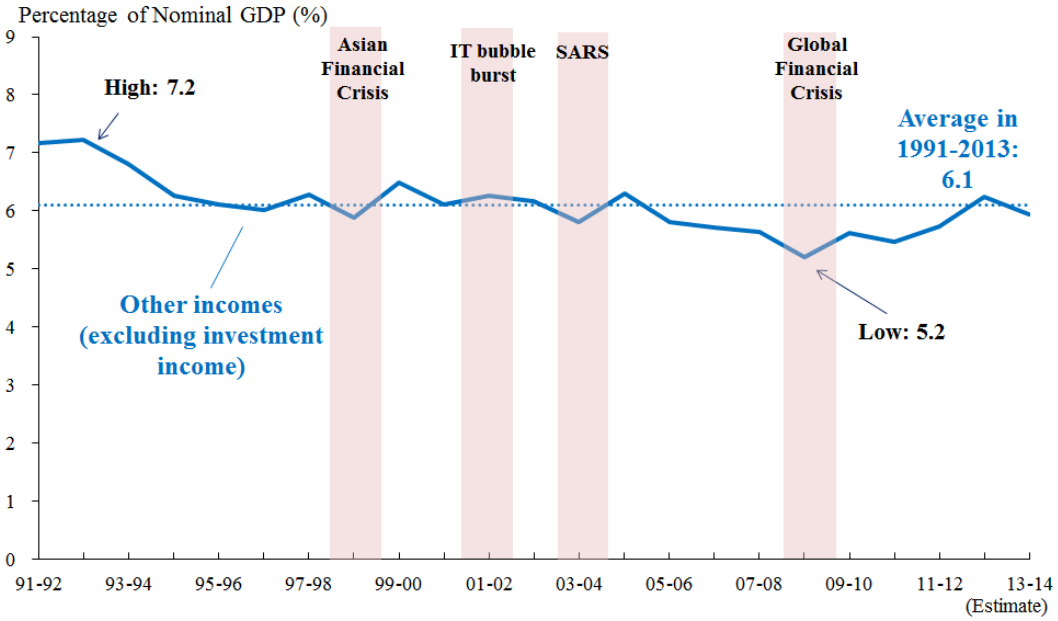
[4] Other incomes excluding investment income in paragraph 4.14 have been adjusted for the one-off rates concession and a number of major one-off receipts, and hence are different from the actual figures.

*Chart 4.9 - Other incomes excluding investment income **

(a) Annual rate of change



(b) As ratio of nominal GDP



Note: * Figures have been adjusted for one-off receipts, namely proceeds from the sale of loans to the Hong Kong Mortgage Corporation, the partial privatization of MTRC, and the securitization of government toll tunnels and bridge, and one-off rates concession in various years, and hence are different from the actual figures.

Projection methodology and results

4.15 Following the analysis in the foregoing paragraphs, in respect of the five major revenue items, namely profits tax, salaries tax, stamp duties, land premium and other incomes excluding investment income, an econometric modelling exercise has been undertaken to estimate the historical relationship between these revenue items with the then prevailing economic conditions (for details, please see the technical appendix in **Annex E**). Based on the estimated parameters from these econometric models and the macroeconomic assumptions [5] under the **Base Case**, projections for the five individual revenue items are produced and then aggregated up to render the projection for the government revenue before investment income. Projections are also produced for the purpose of sensitivity analyses under the other three Cases (i.e. **High Case**, **Low Case** and **Shock Case**).

4.16 The long-term projection results for the government revenue before investment income under the growth and price assumptions of **Base Case** and the other three Cases are as follows –

(a) **Base Case**: Government revenue before investment income is projected to increase from $403 billion in 2014-15 to $1,407 billion in 2041-42. As a ratio of nominal GDP, the government revenue before investment income is forecast to edge down gradually from around 20% or slightly above in mid-2010s and early 2020s to 19.8% in 2041-42. For the 27 years taken together, the projected trend growth between 2014-15 and 2041-42 is 4.7% per annum, broadly on par with the assumed trend growth of 4.4% in nominal GDP over the same period (*Charts 4.10 and 4.11*).

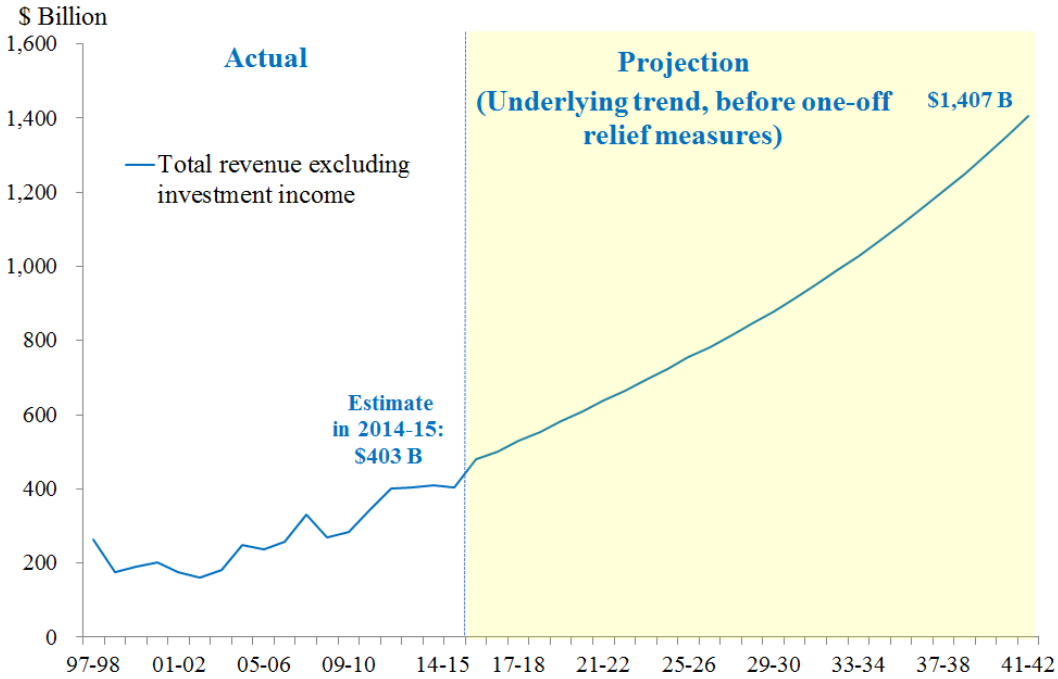
[5] Please see Chapter 2 for a detailed discussion of the growth and price assumptions under the four Cases.

(b) **High Case**: With higher GDP growth rate assumed after 2018, government revenue before investment income is projected to increase by 6.3% per annum between 2014-15 and 2041-42, reaching $2,076 billion (or 23.5% of nominal GDP) in 2041-42 (*Chart 4.12*).

(c) **Low Case**: Government revenue before investment income is projected to increase by only 3.2% per annum, rising to $937 billion (or 16.5% of nominal GDP) in 2041-42 (*Chart 4.12*).

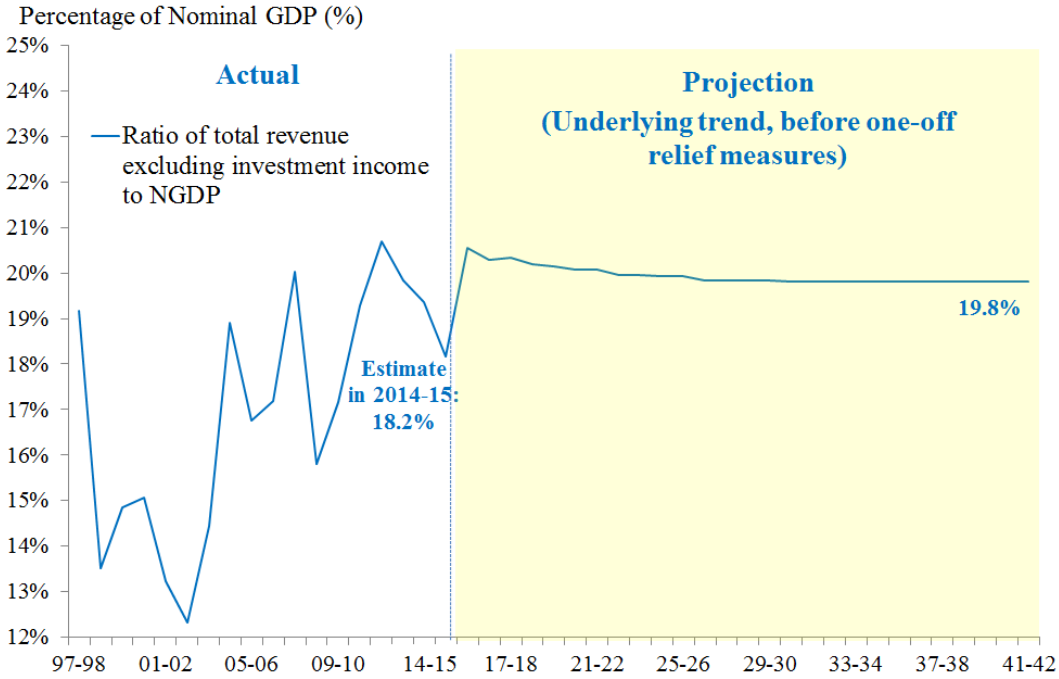
(d) **Shock Case**: Government revenue before investment income is projected to plummet to a low of $294 billion (or 15.6% of nominal GDP) in 2016-17 from $403 billion in 2014-15, amid a severe economic downturn brought about by a hypothetical five-year shock starting in 2015-16 (for details of the Shock Case, see Para 2.16(c)). While the trend economic growth is assumed to return to normal (i.e. same as the macroeconomic assumption under the **Base Case**) from 2020-21 onwards, government revenue before investment income is projected at only $943 billion (or 19.8% of nominal GDP) in 2041-42, which is around 33% lower than the projected level under the **Base Case**. This represents a markedly lower trend growth rate of 3.2% per annum between 2014-15 to 2041-42 (*Chart 4.12*).

Chart 4.10 - Projection of government revenue before investment income under the Base Case



Note: Figure for 2014-15 refers to the original estimate in the 2014-15 Budget.

Chart 4.11 - Projection of government revenue (before investment income) as ratio of nominal GDP under the Base Case

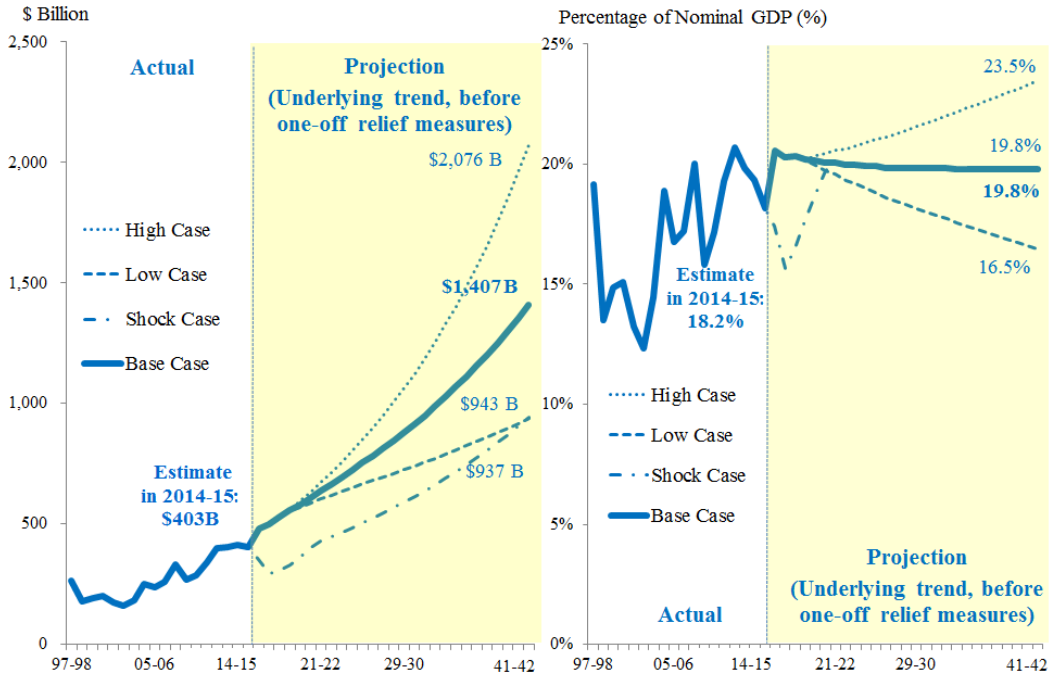


Note: Figure for 2014-15 refers to the original estimate in the 2014-15 Budget.

Chart 4.12 - Sensitivity analyses of government revenue (before investment income)

(i) Projection of government revenue (before investment income)

(ii) Projection of the ratio of government revenue (before investment income) to nominal GDP



Investment income

4.17 Investment income refers to the investment return of the Government's fiscal reserves placed with the Exchange Fund, which is managed by the Hong Kong Monetary Authority. Effective from 1 April 2007, the rate of return for the Government's fiscal reserves of a year is set at the average return of the Exchange Fund's investment portfolio over the past six years. For the purpose of this fiscal projection exercise, the rate of return is assumed at 5% per annum (which is the actual rate of return for 2013-14 and is broadly comparable to the average investment return of 5.3% on the fiscal reserves for the five-year period from 2010-11 to 2014-15).

4.18 Over the projection period 2015-16 to 2041-42, the average annual investment income as ratio of nominal GDP would range from 0.6% under the **Service Enhancement at Historical Trend Scenario**, to 1.3% under the **No Service Enhancement Scenario.** For all the four expenditure scenarios, the projection results indicate that investment income would successively fall to zero during the projection period, as persistent fiscal deficits surface and fiscal reserves are being continuously drawn down. After taking into account investment income, government revenue is projected to rise from $430.1 billion in 2014-15 by 4.5% per annum to $1,407 billion in 2041-42 under the **No Service Enhancement Scenario**.

Conclusion

4.19 Population ageing would have profound implications on public finances, not only on the expenditure side, but also on the revenue side. It is clear from the analysis in this Chapter that government revenue hinges crucially on whether the macro economy can stay vibrant, and as such, when the impact of population ageing increasingly sets in to undermine economic vitality and long term GDP growth potential, government revenue is bound to slow in tandem. On the expenditure side, as Chapter 3 has already discussed, population ageing would bring pressures on spending, particularly in the areas of healthcare and social welfare. In short, demographic changes would pose a drag on our revenue growth and simultaneously bring pressures on the expenditure front.

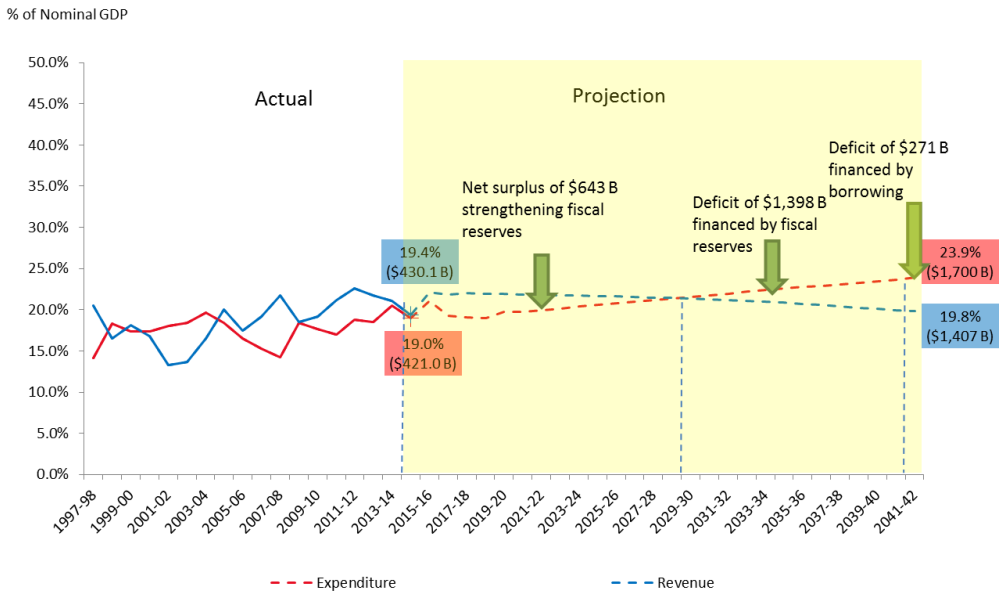
Chapter 5 – Fiscal Sustainability

Overview

5.1 This Chapter consolidates the expenditure and revenue projections set out in Chapters 3 and 4, and presents the overall fiscal outlook of the Government up to 2041-42.

5.2 The projection results indicate that under the **No Service Enhancement Scenario**, where only demographic changes and price factors are assumed, there would a persistent shortfall in revenue to finance the Government's operations, i.e. a structural deficit, as from the year 2029-30 under the Base Case.

Chart 5.1 – Projection on revenue and expenditure under Base Case, No Service Enhancement Scenario

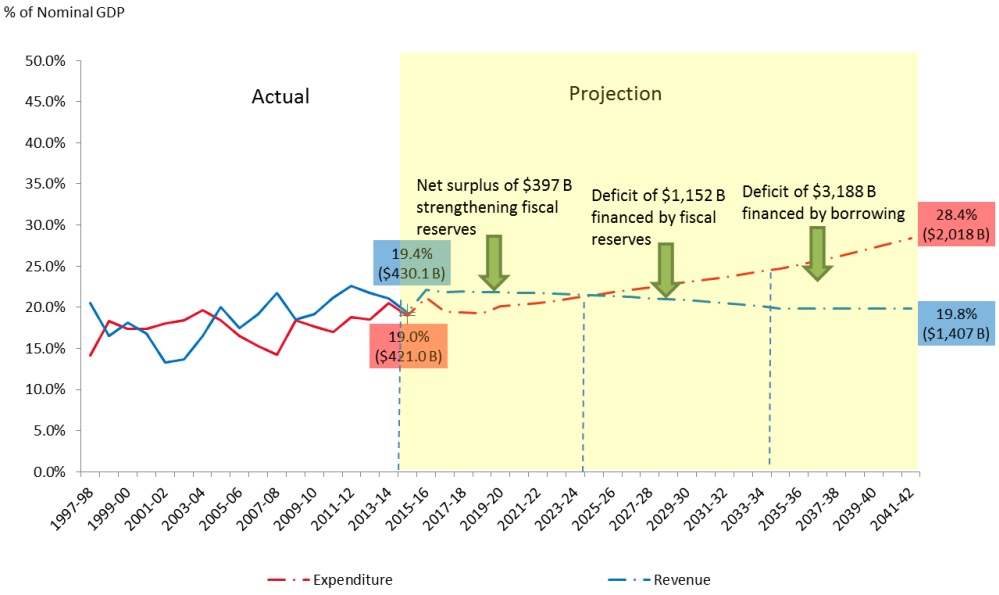


5.3 **Under the various Service Enhancement Scenarios**, where services for education, social welfare and health would be enhanced at either 1%, 2% or rates trailing the historical trends of the respective spending programmes, and where capital works and other expenditure items would remain a constant share of GDP, a

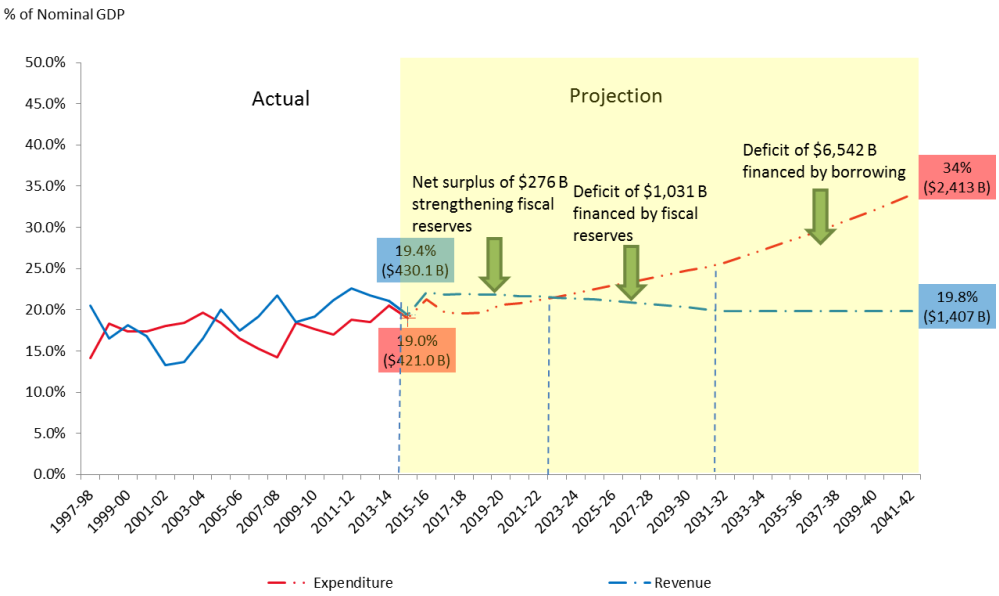
structural deficit would surface even earlier, between 2021-22 and 2024-25, under the Base Case.

Chart 5.2 – Projection on revenue and expenditure under Base Case, Service Enhancement Scenarios

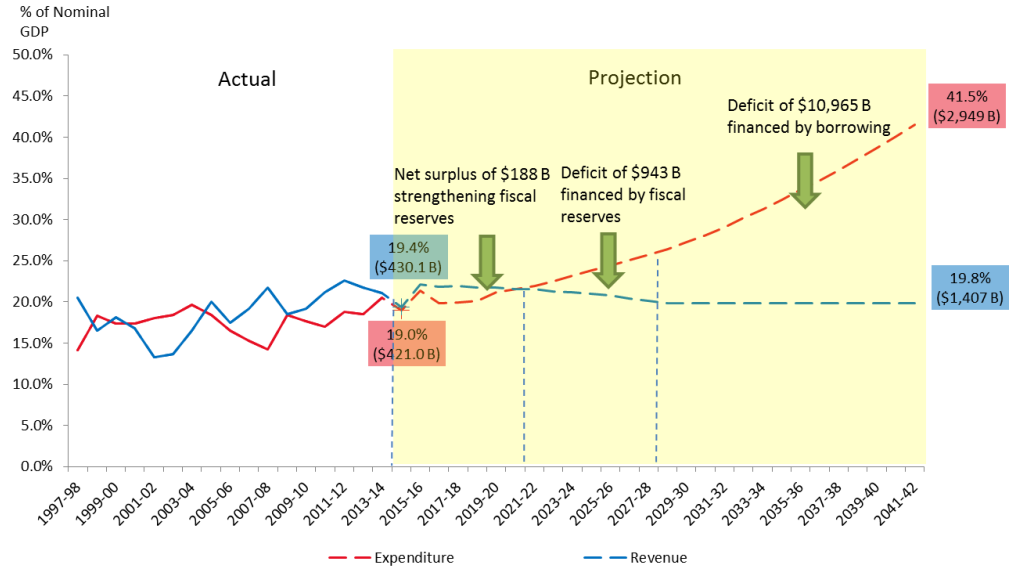
@1% per annum



@2% per annum



@ Historical Trend



5.4 It is worth noting that structural deficit differs from a cyclical deficit in that it exists regardless of the point in the business cycle (i.e. not resulted from changes in the economic cycle). Structural deficit is caused by an underlying imbalance in government revenue and expenditure.

5.5 Once a structural deficit strikes, the Government would need to dip into the fiscal reserves to finance the Government's operations. The draw down of the fiscal reserves balance would reduce the investment income and hence further worsen the deficit problem.

5.6 Unless something could be done in the circumstances to redress the structural deficit problem, the fiscal reserves would be depleted within a decade or so (within 12 years under the No Service Enhancement Scenario, or within seven to ten years under the Service Enhancement Scenarios) after the onset of the structural deficit.

5.7 Sensitivity analyses under different macroeconomic assumptions (i.e. the High Case, Low Case and Shock Case defined in Chapter 2) show similar results with structural deficit anticipated to surface within a decade or two.

5.8 The projections have not taken into account the potential financial support needed for the Housing Authority. If the projected $490 billion funding shortfall of the Housing Authority has to be met by government injections, the surface of structural deficit and depletion of the fiscal reserves would be both advanced by three years under the No Service Enhancement Scenario.

Fiscal outlook

5.9 Under the **Base Case** macroeconomic assumptions, the structural deficit problem would start in 2029-30 even in the **No Service Enhancement Scenario** (*Chart 5.1*). The structural deficit would continue to grow thereafter.

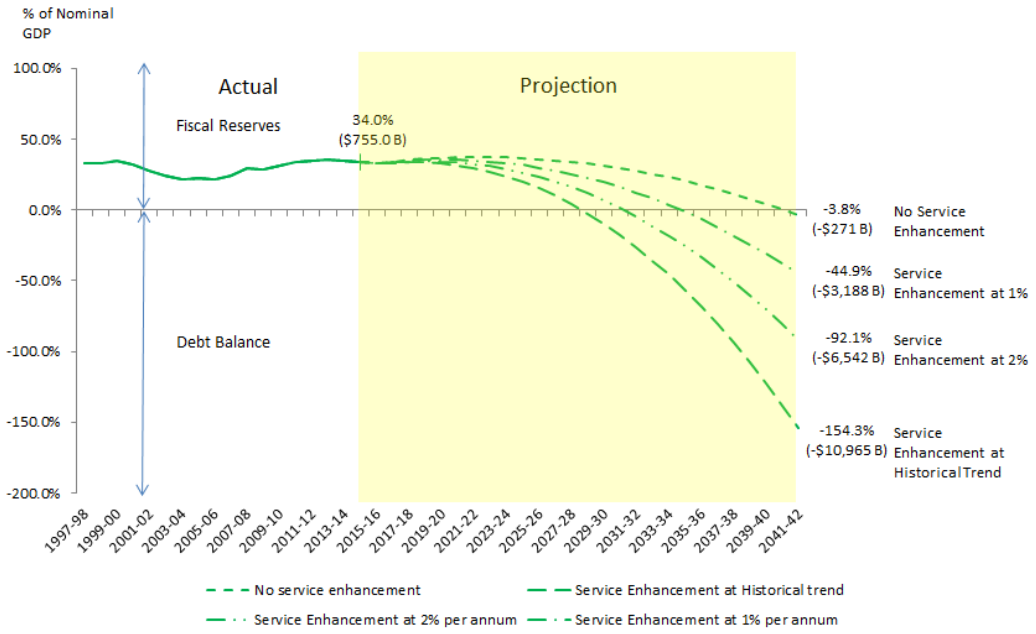
Base Case	Projected start of Structural Deficit	Projected depletion of Fiscal Reserves	Fiscal Gap in 2041-42	
			% GDP (nominal)	$ Billion
No Service Enhancement Scenario	2029-30	2041-42	4.1%	293

5.10 Before the surface of the structural deficit problem, the fiscal reserves balance is projected to rise from $755 billion (34.0% of nominal GDP) in 2014-15 to $1,398 billion (32.8% of nominal GDP) in 2028-29. Thereafter, it would be depleted in 2041-42 and resulted into debt liabilities at a level of $271.1 billion (3.8% of nominal GDP) (*Chart 5.3*).

5.11 Under the **Service Enhancement Scenarios**, the structural deficit problem would start within a decade or two, as detailed below –

Base Case	Projected start of Structural Deficit	Projected depletion of Fiscal Reserves	Fiscal Gap in 2041-42	
			% GDP (nominal)	$ Billion
Service Enhancement Scenarios *@ 1% per annum*	2024-25	2034-35	8.6%	611
@ 2% per annum	2022-23	2031-32	14.2%	1,006
@ historical trend	2021-22	2028-29	21.7%	1,542

Chart 5.3 – Projection on fiscal reserves / debt balance under Base Case



Sensitivity Analysis

5.12 The Working Group has reviewed the sensitivity analyses performed on the revenue and expenditure projections under the High Case, Low Case and Shock Case as defined in Chapter 2 –

(a) **High Case** – the faster growth in the economy would yield higher revenue and at the same time higher inflation rates would increase the expenditure in nominal terms. The faster economic growth would also drive up those categories of expenditure which are assumed to grow in line with GDP.

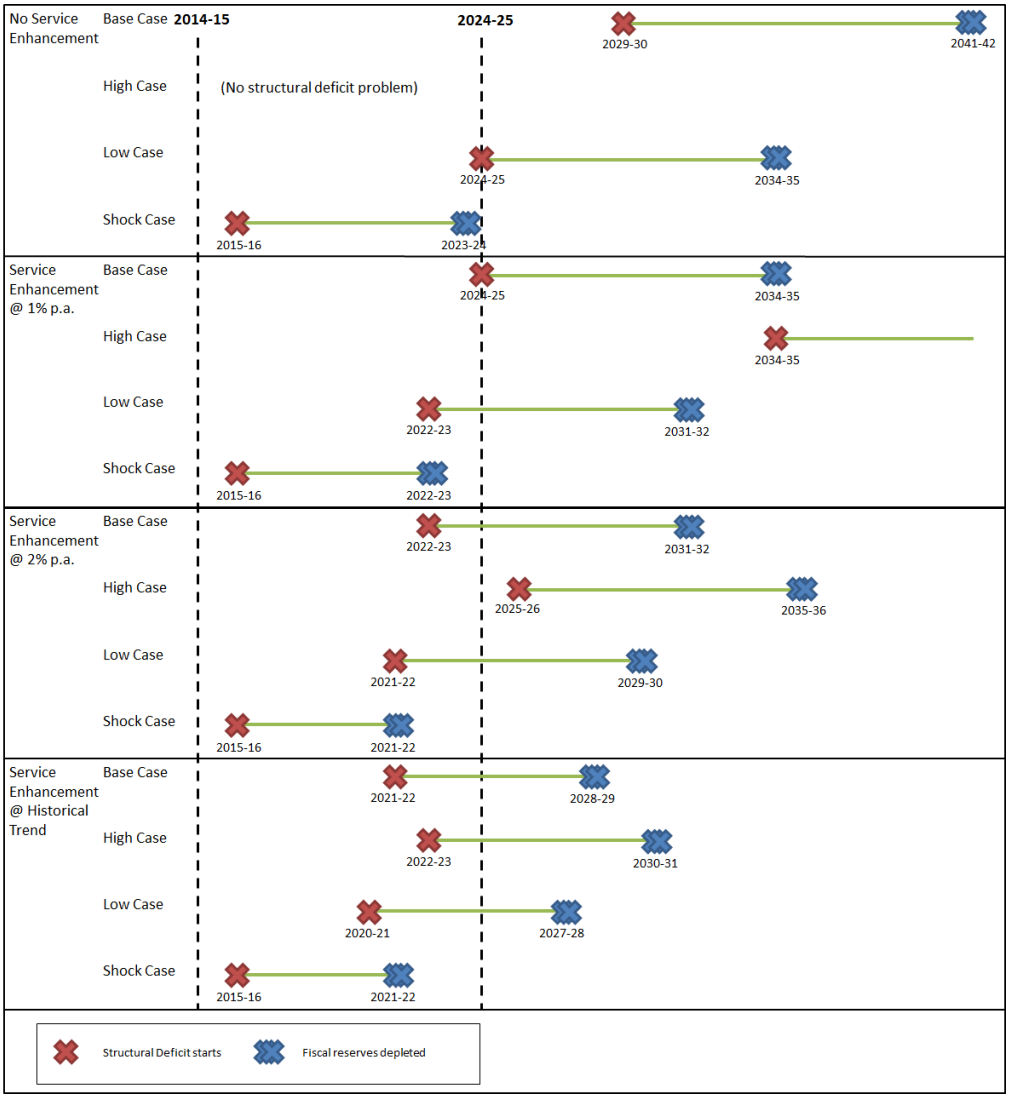
(b) **Low Case** – just the opposite of the High Case, under the slower economic growth environment, revenue would be less and lower inflation rates would reduce the expenditure growth in nominal terms. The slower economic growth would also reduce the growth in those categories of expenditure which are assumed to grow in line with GDP.

(c) **Shock Case** – it is assumed that a severe economic downturn would take place in 2015[1] which would adversely affect the economic growth and price factors for five years before they return to normal trend. Given its inelastic nature, government expenditure would not be able to adjust downward in tandem under the Shock Case. The expenditure projection for this case has assumed that the Government would introduce some austerity measures and the civil service pay would be frozen in 2016-17 and reduced by 3% p.a. for 2017-18 and 2018-19. It is further assumed that most of the recurrent expenditure would be frozen until the economy returns to a level before the downturn. On the other hand, as government revenue is volatile, the economic downturn would have immediate impact on the revenue projection. While counter-cyclical measures would usually be introduced in economic downturn, no such measure is assumed in the Shock Case.

[1] The Shock Case is essentially hypothetical, being purely for the purpose of sensitivity testing in this fiscal projection exercise. It does not represent the Government's view on the economy from 2015 onwards. See Paragraph 2.16(c).

5.13 The results of the sensitivity analyses show that, except for the No Service Enhancement Scenario under the High Case, projected expenditure growth would outpace the growth in revenue, although in different magnitudes. The emergence of the structural deficit problem is a matter of time. If services in education, social welfare and health are to be enhanced as assumed under the Service Enhancement Scenarios, the problem would turn up **within a decade or two**, followed by the depletion of our reserves within another decade (*Chart 5.4*). Detailed results of the sensitivity analyses can be found at **Annex F**.

Chart 5.4 – Projected timeline for the start of structural deficit and depletion of fiscal reserves



5.14 It is worth noting that the Shock Case has demonstrated that given the inelasticity of government expenditure and the volatility of revenue, a major economic shock could immediately trigger a structural deficit.

5.15 The Working Group has made a conscious effort to avoid overstating expenditure requirements. The foregoing has **not taken into account the enormous fiscal pressure which the Housing Authority is under, and which might need to be shouldered in part by the Government.** Even under the 2013 commitment to produce an average of 20 000 public rental housing (PRH) and 5 000 Home Ownership Scheme units a year, the Housing Authority is projected to have a funding shortfall as from 2019-20 and the cumulative shortfall to 2041-42 could be **$490 billion** (assuming PRH rent could be raised 5% every two years) **or $130 billion** (assuming PRH rent could be raised 10% every two years). The figures have not reflected the costs of the additional commitments (8 000 instead of 5 000 HOS units each year) set out in the 2014 Policy Address. Although the Authority has to ensure that the revenue accruing to it from its estates shall be sufficient to meet its recurrent expenditure on the estates, the Government will have to support the public housing production programme where necessary. If the Housing Authority's shortfalls were deemed government obligations, the surface of structural deficit and the depletion of the fiscal reserves could be advanced by three years under the No Service Enhancement Scenario.

5.16 Long-term projections are not year-on-year forecasts. There are bound to be limitations. But transparency facilitates understanding. Projections under various cases and scenarios in the report can be found in the website of the Treasury Branch.

Conclusion

5.17 The current healthy fiscal situation would last much shorter than one may expect. The combined effect of a maturing economy and an ageing population imply that even under the **No Service Enhancement Scenario**, the Government would face a structural deficit problem in 15 years' time. Under the various **Service Enhancement Scenarios**, the problem would surface within a decade under the Base Case.

5.18 **The scale of the structural deficit could be serious**. Except for the No Service Enhancement Scenario under the High Case, a structural deficit is projected to surface within a decade or two under all other scenarios. The fiscal gap by 2041-42 could range from 4.1% of nominal GDP under the Base Case with No Service Enhancement Scenario to between 14.8% and 30.6% of nominal GDP under the Shock Case with Service Enhancement Scenarios. Fiscal reserves could be depleted within another decade after the onset of structural deficit. The community should be fully apprised of the projected fiscal outlook.

5.19 If a structural deficit were to be avoided, Hong Kong would need a real GDP trend growth of 3.1% per annum under the No Service Enhancement Scenario, or growths of 3.6%, 4.4% or 5.4% per annum under the Service Enhancement Scenarios, instead of the 2.8% per annum assumed under the Base Case. Since Hong Kong has moved away from a high-growth developing economy in the 1970s and 1980s and is now a mature economy, and since the labour force is expected to dwindle as from 2018 under an ageing population and existing population policies, a trend GDP growth of over 3% per annum is exceedingly hard to achieve under current policies.

5.20 It is a requirement of Article 107 of the Basic Law for the Government to keep expenditure within the limits of revenues, avoid deficits, and keep the budget commensurate with the GDP growth. The Working Group considers that there is a need to strengthen fiscal discipline to minimise the risk of structural deficits.

5.21 To escape from the trajectory of becoming a debt-ridden economy and ensure sustainability of public finances, early actions should be taken to tackle the projected structural deficit. The Working Group has prepared recommendations on possible fiscal measures in Chapter 7.

Chapter 6 – Fiscal Measures Adopted in Other Economies

Overview

6.1 Population ageing is a global phenomenon that is affecting many developed economies. The global financial crisis at the turn of the decade has also left many economies in deep budgetary troubles, with debts reaching unprecedented heights, and governments being forced to seriously trim back on expenditure.

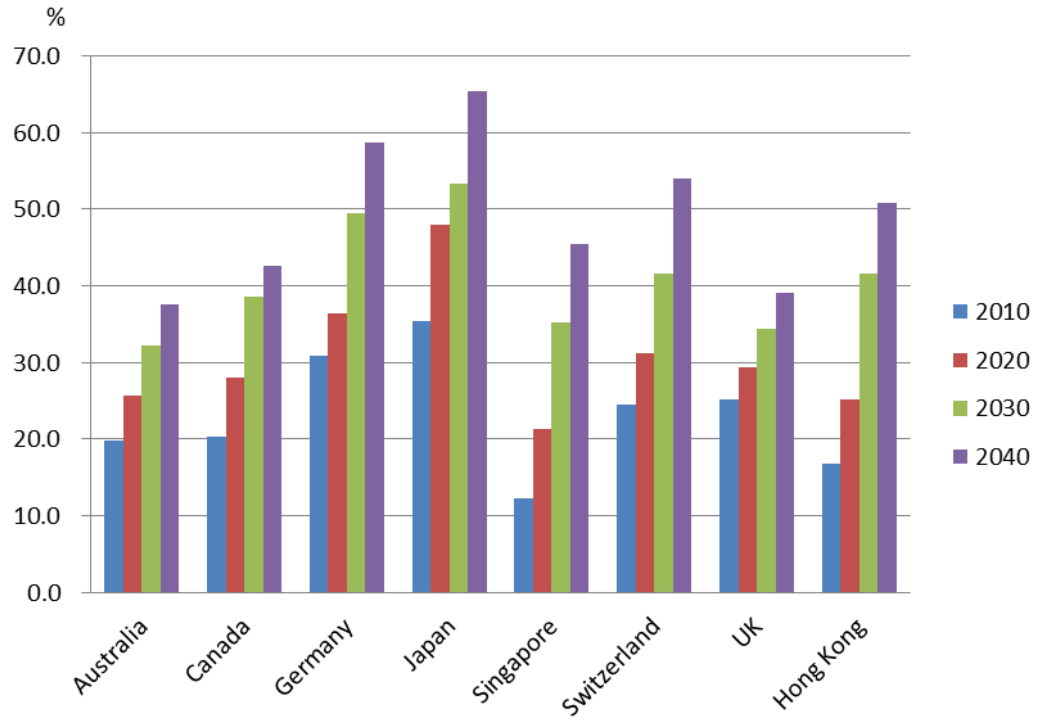
6.2 Whilst the population in Hong Kong is still relatively energetic, and whilst fiscal prudence has offered cushion for Hong Kong against global shocks, there is no room for complacency.

6.3 The Working Group has chosen a sample of seven economies for review, focusing particularly on the budget measures they have adopted to consolidate their budgetary positions. These economies are Australia, Canada, Germany, Japan, Singapore, Switzerland and the United Kingdom. The Working Group has also made reference to the publications issued by the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD). The research findings are set out in this Chapter.

Impact of population ageing on the economies

6.4 Population ageing poses pressures on the fiscal system of many economies. The chart below illustrates how the elderly dependency ratio will change in the coming 30 years.

Chart 6.1 – Projection on the elderly dependency ratio of the seven selected economies and Hong Kong



Source: Other economies - United Nations Probabilistic Population Projections
Singapore - Department of Statistics, Singapore Government

6.5 The extent of the fiscal pressures experienced by the seven selected economies will be briefly described in the ensuing paragraphs.

6.6 For Australia, while there is a positive growth in the size of all age groups and growth in the size of the labour force, the working-age ratio is projected to fall at the same time as the elderly dependency ratio rises. Population ageing and health pressures are projected to result in an increase in total government spending from 22.4% of GDP in 2015-16 to 27.1% of GDP by 2049-50. As a consequence, spending is projected to exceed revenue by 2.75% of GDP in 40 years. (2010 Intergenerational Report, The Treasury, Australian Government, 2010)

6.7 For Canada, long-term demographic trends imply lower per capita GDP growth and increase in spending pressure for health care and income support for elderly. OECD projects that Canada's spending on the Old Age Security, an important pillar of the pension system, will rise from the current level of 2.2% of GDP to 2.7% of GDP in 2040.

6.8 For Germany, the total population is projected to decrease from the current level of 82 million to 79 million in 2030 and 75 million in 2050. The working age group is expected to decrease by 15.4% by 2030 whereas people from aged 65 and above will increase by 35.8%. (United Nations, 2012) According to the European Commission, strictly aged-related payment items (including expenditure on pensions, health, long-term care and education) in Germany account for 24.2% of its GDP in 2010. This percentage share is expected to increase by 0.5 percentage point by 2020 and 5.5 percentage points by 2060 if only demographic developments are taken into account. (European Commission, 2012)

6.9 For Japan, the OECD measure of public social spending shows an increase from 11% of GDP in 1980 to 22% in 2009. Pension and health spending accounted for 9 percentage points of the increase. The upward trend is likely to continue. Japan expects total public social spending to rise further to 23.6% of GDP in 2020. (OECD, OECD Economic Surveys: Japan, 2013)

6.10 For Singapore, the Singapore Government has pointed out that a shrinking and ageing population and workforce will make it more difficult to sustain public finances over the longer term, especially when this is coupled with increasing needs for higher expenditure to support a much larger elderly population. Government revenue comes mostly from income taxes, consumption taxes and asset taxes, all of which are dependent on economic growth. Singapore may need to cut expenditure in some areas, or find new sources of revenue to balance the budget. (National Population and Talent Division, Prime Minister's Office, Government of Singapore, 2012-2013.) As the social spending increases significantly, sooner or later the taxes must go up. (Lee Hsien Loong, Prime Minister of Singapore, 2012)

6.11 For Switzerland, expenditure on old-age and disability insurance is projected to increase from 9.6% of GDP in 2009 to 11% of GDP by 2060 (Source - 2012 Report on the Long-Term Sustainability of Public Finances in Switzerland issued by the Swiss Federal Department of Finance). Expenditure on healthcare and long-term care will also increase by 1.0 and 1.3 percentage points to 3.5% and 1.9% of GDP in the same period. Together with a slight increase of 0.3 percentage points in Education, the total demographic-dependent expenditure is expected to increase by 3.9% to 22.3% of GDP by 2060.

6.12 For the United Kingdom (UK), age-related government expenditure, including expenditure on health, long-term care, education and pensions, is projected to rise by 4.4% of GDP between the fiscal years 2017-18 and 2062-63 (Source - 2013 Fiscal Sustainability Report). As a result, the net public debt in the UK is expected to rise by some 24% of GDP by 2062-63 on the basis of unchanged government policy.

Fiscal discipline

6.13 As more and more economies encounter serious fiscal problems and become debt-ridden, strengthening fiscal framework has emerged as the only logical response. Fiscal rules have been introduced or tightened to reinstate budget discipline and ensure fiscal responsibility and debt sustainability.

6.14 According to an IMF Working Paper[1], there are four main types of fiscal rules that economies have adopted or have strengthened in response to the mounting fiscal pressures –

(a) **Budget balance rules** – These can be specified as "overall balance", "structural or cyclically adjusted balance", and balance "over the cycle". In an inter-governmental treaty signed by 25 members of the European Council in March 2012 (so-called Fiscal Pact), there is a requirement for the European Union (EU) members to adopt in legislation national rules that limit annual structural deficits to a maximum of 0.5% of GDP (1% of GDP for countries with debt levels below 60% and with low sustainability risks).

(b) **Expenditure rules** – Expenditure limits are typically set in absolute terms or growth rates, or in percentage of GDP with a time horizon often between three to five years. Quite a number of EU members, such as Bulgaria, Denmark, France, Luxembourg, Netherlands and Slovenia, have introduced various rules constraining expenditure in real and nominal growth rate (e.g. France: Central government expenditure is frozen in nominal terms, except interest payments on debt and pensions of civil servants) and as % of GDP (e.g. Bulgaria: 40% of GDP).

[1] Andrea Schaechter, Tidiane Kinda, Nina Budina, and Anke Weber. (2012). Fiscal Rules in Response to the Crisis—Toward the "Next-Generation" Rules. A New Dataset. IMF.

(c) **Revenue rules** – These set ceilings or floors on revenues and are aimed at boosting revenue collection and/or preventing an excessive tax burden. For example, France introduced in 2011 a requirement that the impact of new additional fiscal revenue measures should reach a minimum level of €11 billion in 2011 and €3 billion in 2012. Denmark introduced a tax freeze on direct and indirect tax (i.e. taxes cannot be raised whether in percentage or dollar terms) in 2001 (which was in force until 2010) (EU Fiscal rules database).

(d) **Debt rules** – These set an explicit limit or target for public debt as a percentage of GDP. For instance, the Fiscal Pact referred to above includes, amongst other things, a commitment to continuously reduce the public-debt-to-GDP ratio to the 60% of GDP threshold.

6.15 Fiscal rules aim at correcting distorted incentives and containing pressures to overspend, in particular in good times, so as to ensure fiscal responsibility and debt sustainability. The presence of many competing interest groups usually results in the "voracity effect" where different groups compete and push for overspending windfalls in good years, which leaves no room for counter-cyclical response in bad years.

6.16 According to an IMF Working Paper[1] –

(a) Effective implementation and monitoring of fiscal rules often require a number of supporting arrangements and good institutional capacity. For example, reliable data availability and technical forecasting capacity is needed to ensure sufficient degree of accuracy in budgetary aggregates forecasting to avoid the risk that large deviations from the announced fiscal policy stance undermine rules credibility.

(b) Fiscal rules should be underpinned by a set of institutional arrangements to convert the intent of the fiscal rule into the reality of budget policy and execution. For example, medium-term budget frameworks prioritize, present and manage both revenue and expenditure over a multi-year framework, and can help demonstrate the impact of current and proposed policies over the course of several years, and ultimately achieve better control over public expenditure.

(c) Fiscal rules can be supported by fiscal responsibility laws which typically set out procedural and transparency requirements and in some cases also numerical rules.

(d) An increasing number of advanced and some emerging economies are using independent bodies to further enhance the credibility of their fiscal rules. Independent Fiscal Councils, i.e. institutions with a specific mandate to assess and monitor the implementation and impacts of fiscal policy, play a specific role in enforcing rules by providing an independent voice on their implementation.

6.17 The Working Group noted the international trend towards more rigorous application of fiscal rules and considers that room exists for Hong Kong to learn from the experience of other economies. The Working Group appreciates that rules cannot be too rigid; but if escape provisions are too readily invoked, the *raison d'etre* for the original fiscal rule would be undermined. When designing fiscal rules, policy makers would need to strike a balance between allowing flexibility and upholding fiscal discipline, and between coping with immediate community needs and preserving longer term fiscal sustainability.

Saving for the future

6.18 According to the research of the Working Group, some economies use the resources available to plan for the future through saving up part of their fiscal surplus or other receipts and assets. The notable examples are set out below.

Australia

6.19 The Future Fund was established by the Australian Government under the Future Fund Act 2006. The object of the fund is to strengthen the Australian Government's long term financial position by making provision for unfunded Commonwealth superannuation liabilities. These liabilities will become payable at a time when an ageing population is likely to place significant pressure on the Australian Government's finances.

6.20 The Future Fund received an initial injection of A$18 billion and proceeds from the sale of the Australian Government's holding of Telstra (a telecommunications company originating as a government department). The Australian Government may also make contributions to the Fund in accordance with the Act. A Board of Guardians responsible for investing the Fund's assets was established. As at 30 September 2013, the Future Fund balance stood at A$91.7 billion.

6.21 Withdrawals from the Future Fund may only occur once the superannuation liability is fully offset or from 1 July 2020, whichever is the earlier. The Australian Government Actuary periodically projects the Commonwealth's unfunded superannuation liability and declares the target asset level. In March 2010, the declared target asset level was A$99.7 billion for 2009-10, rising to A$114 billion for 2013-14.

Singapore

6.22 A constitutional safeguard exists in Singapore that would not allow the Government of the day to draw on past reserves accumulated by previous governments unless with the approval of the President. Besides, only up to 50% of the net investment return, on a real basis, on past reserves could be deployed as government spending every year. These safeguards create an effective savings mechanism that allow reserves to be saved and invested for the future.

Other economies

6.23 Many resource-producing economies have created natural resource funds for stabilization and saving purposes. Some of the funds are managed off-budget with the purpose of insulating resource revenues from spending pressures from the legislature. A few examples of funds with savings objectives are listed below –

(a) Norway's Government Pension Fund Global

It was set up in 1990 as a fiscal policy tool to support long-term management of Norway's petroleum revenue. The Fund is an instrument for general saving and does not have clearly defined future liabilities. It is fully integrated with the state budget and that net allocations to the fund reflect the total budget surplus, including petroleum revenue. Fiscal policy is based on the guideline that over time the structural, non-oil budget deficit shall correspond to the real return on the fund, estimated at 4%. Capital may only be used for transfer to the budget pursuant to a resolution by the parliament to cover the oil-adjusted budget deficit.

(b) Funds for Future Generations (FFGs)

Several countries, including Gabon and Kuwait, have created FFGs financed by a fraction of annual oil revenue (between 10% and 25%). The use of the funds' resources is relatively general, including for discretionary transfers to the budget.

(c) Chile's Pension Reserve Fund

It was established in 2006 to meet future pension costs. It receives annual contributions from the budget of 0.2% of GDP irrespective of the fiscal balance, and up to 0.5% of GDP if fiscal surpluses exceed 0.2% of GDP.

Fiscal measures of the selected overseas economies

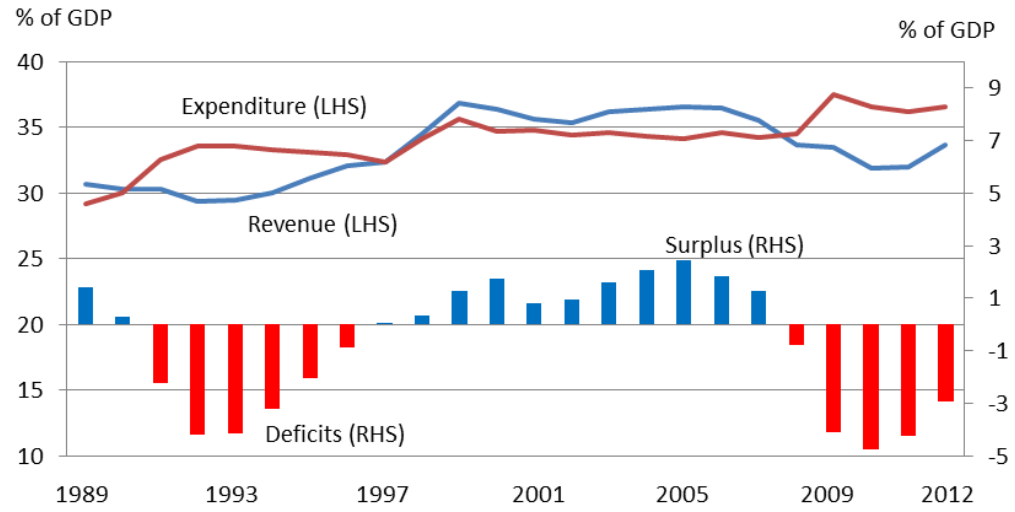
6.24 An overview of the economic and fiscal background of the seven selected economies, along with the fiscal measures they adopted to cope with future economic challenges including population ageing, is set out below. The Working Group noted that the seven economies have also introduced various reforms on their healthcare and pension systems. Nevertheless, since healthcare and pension reforms are not the focus of the Working Group, these two areas are not included in the findings of this Chapter.

6.25 For comparison, the overall economic and fiscal position of Hong Kong is at the **Annex G**.

Australia

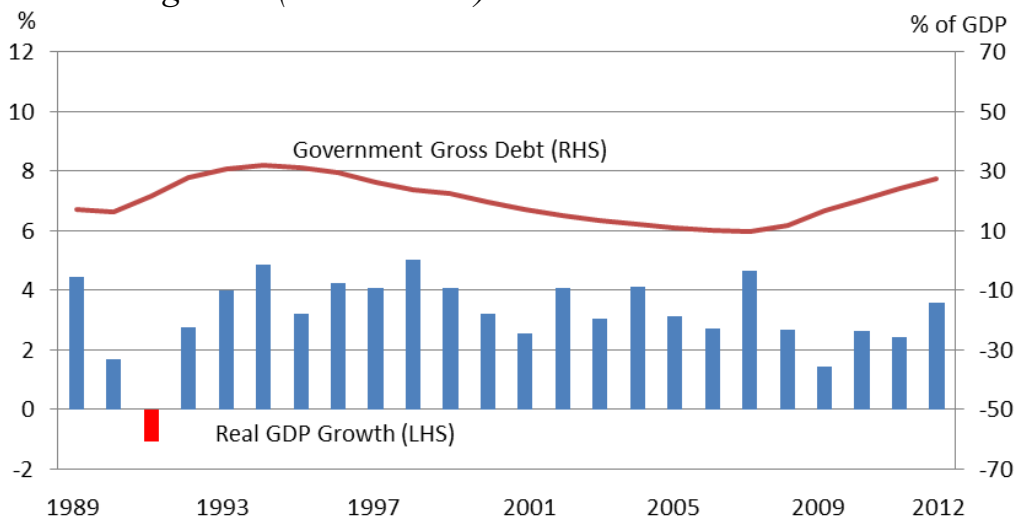
6.26 The Australian economy has experienced continuous growth and features low unemployment, contained inflation, low public debt, and a stable financial system. By 2012, Australia had experienced more than 20 years of continued economic growth, averaging 3.4% a year.

Chart 6.2 – Australia: Government revenue, expenditure and surplus/ deficits (1989 – 2012)



Source: IMF WEO Database

Chart 6.3 – Australia: Government gross debt and real GDP growth (1989 – 2012)



Source: IMF WEO Database

6.27 Demand for resources and energy from Asia and especially China has grown rapidly, creating a channel for resources investments and growth in commodity exports. The high Australian dollar has hurt the manufacturing sector while the services sector is the largest part of the Australian economy, accounting for about 74% of Gross Value Added and 78% of jobs.

6.28 While Australia was adversely affected by the global financial crisis, the impact of the crisis was considerably less than many other countries. Australian banks continued to be profitable and did not require any capital injections from the Government. Inflation was also kept under control. However, growth in the economy did decline while unemployment rates rose.

6.29 Australia has benefited from a dramatic surge in its terms of trade in recent years, stemming from rising global commodity prices. Australia is a significant exporter of natural resources, energy, and food. Australia's abundant and diverse natural resources attract high levels of foreign investment and include extensive reserves of coal, iron, copper, gold, natural gas, uranium, and renewable energy sources.

6.30 The fiscal measures undertaken by the Australian Government in recent years can be broadly divided into budget consolidation measures and tax measures as highlighted below –

(a) Budget consolidation measures

(i) To protect the corporate tax base, the Australian Government will tighten the rules to prevent profit shifting, remove the immediate deductibility for expenditure on exploration rights and information, improve the integrity of the consolidation regime and improve the operation of the Offshore Banking Unit regime.

(b) Tax measures

(i) Tax receipts as a proportion of GDP have moved in a relatively small range over the last two decades. Sales taxes have expanded with the introduction of Goods and Services Tax in 1999-2000 while total individuals' income taxes fell. Taxes as a proportion of GDP steadily increased from the early 1990s peaking in 2010 at 25.6%. The tax-to-GDP ratio declined as the global financial crisis reduced receipts sharply. Tax receipts are expected to rebound steadily relative to GDP to average 22.8% over 2012-13 to 2014-15.

(ii) In recent years, the Australian Government announced the following measures to increase tax revenue:

- introducing the Minerals Resource Rent Tax in July 2012, which collect taxes from the coal and iron ore minerals sector;

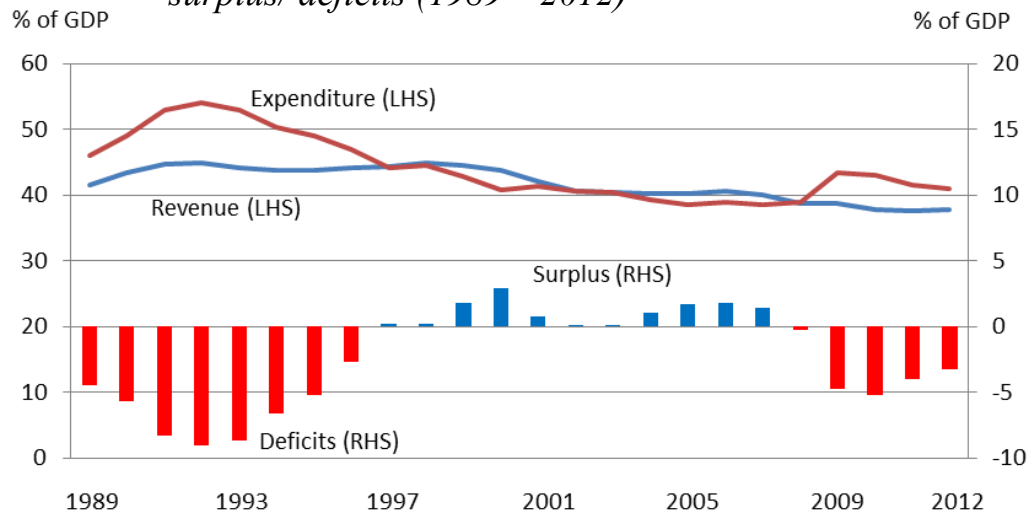
- taking action to close loopholes and protect the corporate tax base from erosion.

(iii) On the other hand, the Government also announced in 2013 Budget that there would be personal tax cuts (for all taxpayers with incomes up to A$80,000) and the tripling of the tax free threshold (from A$6,000 to A$18,200).

Canada

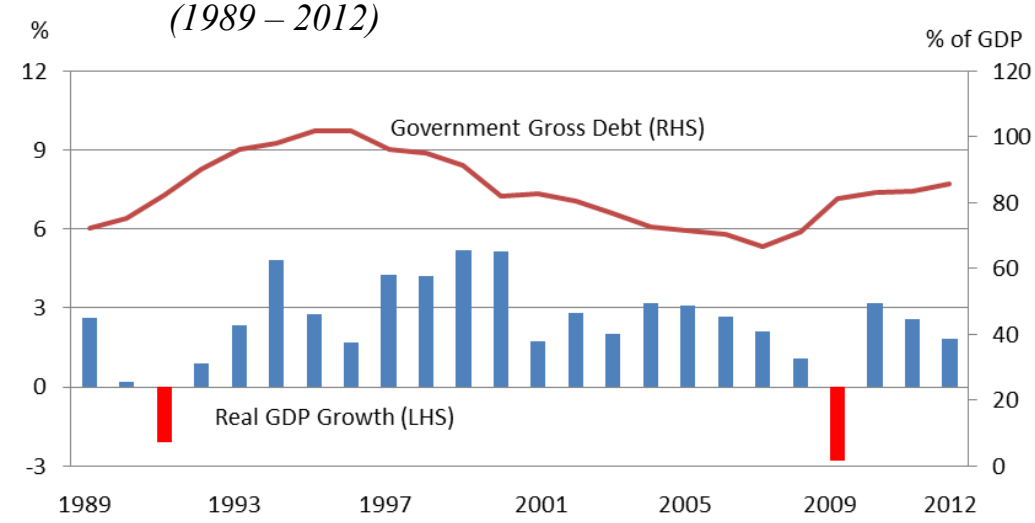
6.31 Due to the global economic crisis, the economy dropped into a sharp recession in the final months of 2008, and resulted in fiscal deficit for the year after 11 years of surplus. Canada achieved economic growth in 2010 to 2012 and plans to balance the budget by 2015.

Chart 6.4 – Canada: Government revenue, expenditure and surplus/ deficits (1989 – 2012)



Source: IMF WEO Database

Chart 6.5 – Canada: Government gross debt and real GDP growth (1989 – 2012)



Source: IMF WEO Database

6.32 Canada enjoys a substantial trade surplus with the US, which absorbs about three-fourths of Canadian exports each year. Canada is the US' largest foreign supplier of energy, including oil, gas, uranium, and electric power. Given its great natural resources, highly skilled labor force, and modern capital plant, Canada enjoyed solid economic growth from 1993 through 2007.

6.33 According to the OECD, Canada weathered the 2008 global economic crisis well, mainly reflecting sustained growth in domestic spending and the economy is continuing to grow despite the persistence of international turbulence. One of the favourable factors contributing to this was that Canada's fiscal plans are seen by markets as credible, leading to low borrowing costs.

6.34 The IMF has commented that although Canada is in a stronger fiscal position than many other advanced economies, the ongoing consolidation effect is important to rebuild the fiscal buffer against future adverse shocks.

6.35 The fiscal measures undertaken by the Canadian Government in recent years are highlighted below –

(a) Budget consolidation measures

(i) The Canadian Government aims to returning to balanced budgets by 2015-16. It introduced measures mainly to control expenditure, e.g. restrained the growth in defense spending and limited the increase in wages of public administration.

(ii) Departmental budgets and salaries of all Members of Parliament and Senators were freezed for two years until 2013. The increase in annual wages for the federal public administration was also limited to 1.5% per year.

(iii) The Government will conduct major review of departmental budget. It will standardise, consolidate and transform the way the Government doing business. It aims to improve government administration and service delivery and reduce costs, examples are reducing travel costs through the use of technology, modernise and standardise information technology and transforming how Canadians obtain Government information and services.

(b) Tax measures

(i) In Canada, at federal level, income tax on individuals is the most significant sources of revenue, accounting for about 50% of total tax revenue in 2012-13. The income tax is progressive with tax rates start at 15% to the highest level of 29%. At provincial/territorial level, different provinces or territories impose their own income taxes with rates starting from 4%-16% to the highest level of 11.5%-25.75%. Apart from personal income tax, other major sources of revenue at federal level include corporate income tax and Goods and Services Tax.

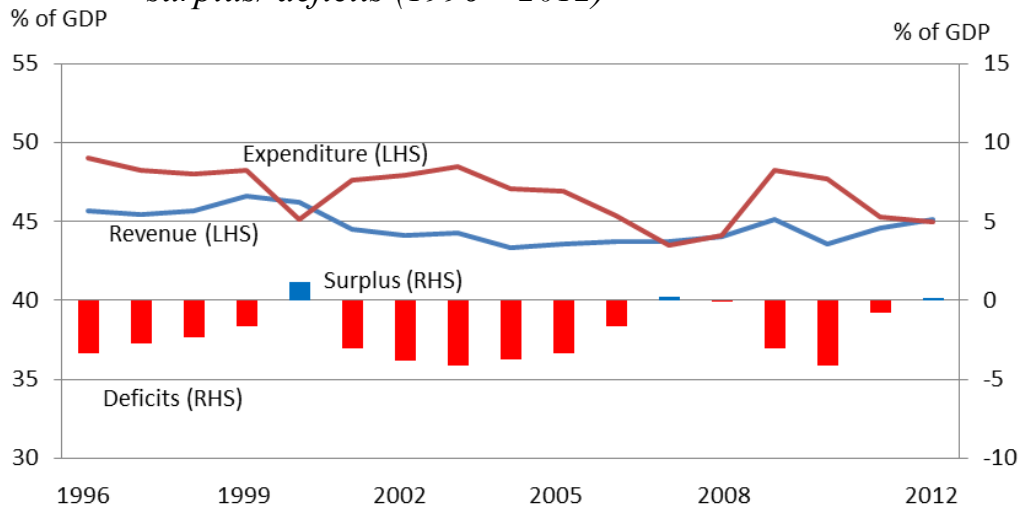
(ii) The Canadian Government initiated the following in the 2013 Budget to improve integrity and close tax loopholes :

- introducing new administrative monetary penalties and criminal offences to deter the use, possession, sale and development of electronic suppression of sales software that is designed to falsify records for the purpose of tax evasion;
- announcing a new Stop International Tax Evasion Program, which will enable the Canada Revenue Agency to pay individuals with knowledge of major international tax non-compliance a percentage of tax collected as a result of information provided.

Germany

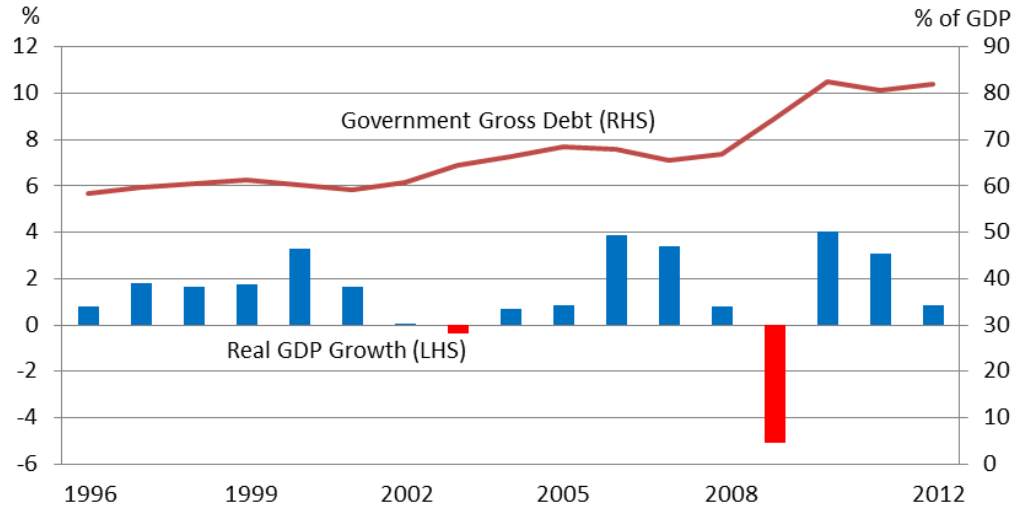
6.36 During the 2008-09 financial and economic crisis, the stimulus and stabilisation efforts initiated and a crisis-induced decline in tax revenue increased Germany's total budget deficit to 4.1% of GDP in 2010, but lower spending in % of GDP and higher tax revenues reduced the deficit to 0.8% in 2011. In 2012, Germany reached a budget surplus of 0.1%. The effects of the crises also caused a sharp soar in public debt to over 80% of the GDP.

Chart 6.6 – Germany: Government revenue, expenditure and surplus/ deficits (1996 – 2012)



Source: IMF WEO Database

Chart 6.7 – Germany: Government gross debt and real GDP growth (1996 – 2012)



Source: IMF WEO Database

6.37 The German economy is the fifth largest economy in the world and ranked first in Europe. It is the world's fourth largest exporter in 2012. It is a leading exporter of machinery, vehicles, chemicals, and household equipment and benefits from a highly skilled labor force.

6.38 GDP growth rate averaged almost 1.5% from 1991 until 2013, reaching an all-time high in 2010 and a record low in 2009. After decelerating throughout 2012 and turning negative in the fourth quarter, GDP growth is expected to strengthen gradually during 2013 and could reach 1.75% in 2014. While subdued activity in the euro area will hold back the recovery, the pick-up of world trade is projected to increase export growth.

6.39 The fiscal measures undertaken by the German authorities in recent years are highlighted below –

(a) Budget consolidation measures

(i) Germany introduced a balanced-budget requirement, the "debt brake" as from 2011. Under the new rule, neither spending increases nor tax cuts may be financed by new borrowing. The new budget rule makes an important contribution towards effectively limiting government debt.

(ii) Since 2011, the federal budget and financial plan were drafted in a top-down procedure, enabling the budget and financial planning to pay greater attention to policy priorities at an earlier stage. The primary focus is no longer on the presumed needs of each ministry but on setting policy priorities while safeguarding the necessary budgetary consolidation.

(iii) A Stability Council was set up in 2010 to monitor federal and Länder (state) budgets and to offer early warning against budget crises. If the Council identifies an impending budget crisis, a budget rehabilitation

programme must be agreed with the budget authority concerned.

(iv) Besides, the Federal Government conducts sustainability analyses periodically to examine the long-term development of public finances (currently up to 2060) and identify long-term fiscal gaps and the need for early actions.

(v) The Federal Government pursues a growth-friendly (or growth-oriented) consolidation strategy. The emphasis is on limiting government consumption, increasing performance incentives, encouraging growth through targeted investments in education, training, research, development and infrastructure and to ensure that social security systems are financed in a way that can withstand the effects of demographic change.

(b) Tax measures

(i) Income tax (including corporate taxes) and value-added tax (i.e. in general 19% and reduced rate of 7% for certain foods, books and magazines, flowers and transports) are two major tax collections in Germany.

(ii) The personal income tax is progressive and ranges with a basic allowance of more than 8 000 euro from 14% to 45%. The corporation tax rate is currently at 15%. Since 1991, a supplementary tax, called solidarity surcharge, has been added to income tax and corporate tax. The current solidarity surcharge rate is 5.5%.

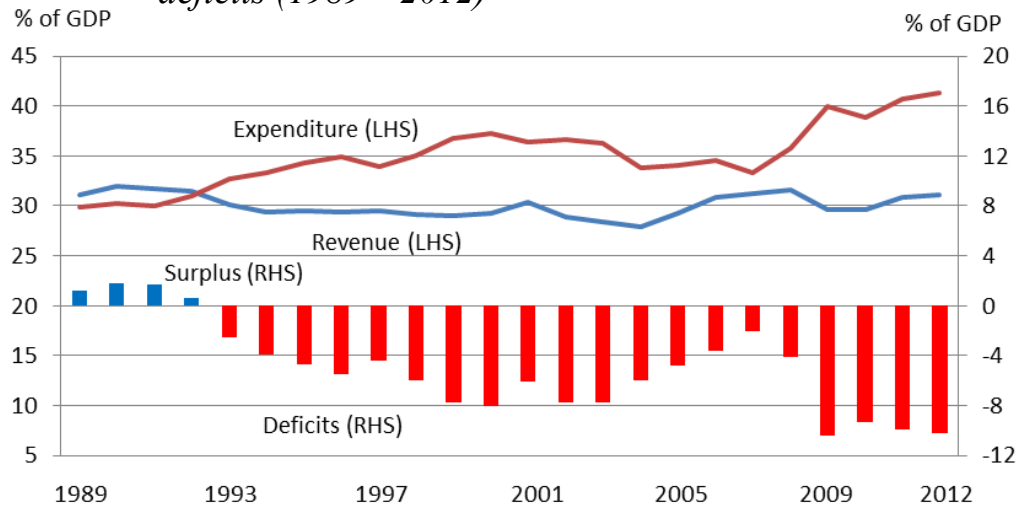
(iii) Germany will impose restriction on tax planning models. It is estimated that these models cause tax revenue losses in the hundreds of millions of euros every year.

Japan

6.40 Japan has experienced two decades of budget deficits. Gross public debt rose from 70% of GDP in 1992 to some 230% in 2012, leaving Japan increasingly vulnerable to a loss of market confidence in the sustainability of its public finances.

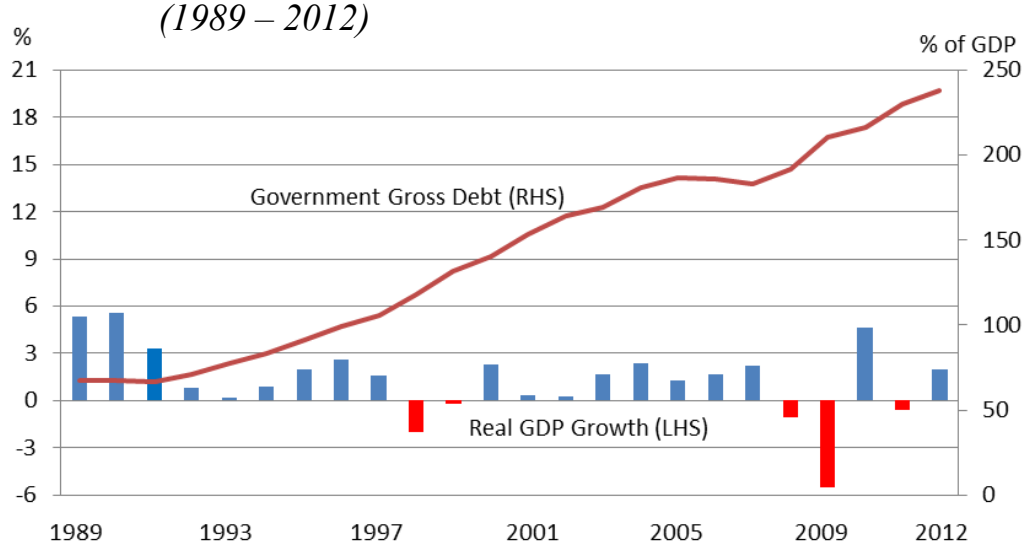
6.41 Persistent deficits were mainly driven by social security outlays which expanded by 10.4% of GDP between 1992 and 2010, reflecting rapid population ageing. Total revenue declined by 1.7% of GDP during the period, primarily due to the fall in taxes on personal and corporate income from 12% of GDP to 8%. Budget deficit is projected to be around 10% of GDP in 2013, further pushing up gross public debt.

Chart 6.8 – Japan: Government revenue, expenditure and surplus/ deficits (1989 – 2012)



Source: IMF WEO Database

Chart 6.9 – Japan: Government gross debt and real GDP growth (1989 – 2012)



Source: IMF WEO Database

6.42 For three decades, Japan's overall real economic growth had been spectacular – a 10% average in the 1960s, a 5% average in the 1970s, and a 4% average in the 1980s. Growth slowed markedly in the 1990s, averaging just 1.7%, largely because of the after effects of inefficient investment and an asset price bubble in the late 1980s that required a protracted period of time for firms to reduce excess debt, capital, and labour.

6.43 Modest economic growth continued after 2000, but the economy has fallen into recession three times since 2008. A sharp downturn in business investment and global demand for Japan's exports in late 2008 pushed Japan into recession. Government stimulus spending helped the economy recover in late 2009 and 2010, but the economy contracted again in 2011 as the massive 9.0 magnitude earthquake and the ensuing tsunami in March disrupted manufacturing. The economy has largely recovered in the two years since the disaster.

6.44 Japan in 2012 stood as the fourth-largest economy in the world after USA, China and India. The government continued a longstanding debate on restructuring the economy and reining in Japan's huge government debt. Persistent deflation, reliance on exports to drive growth, and an ageing and shrinking population are other major long-term challenges for the economy.

6.45 The fiscal measures undertaken by the Japanese Government in recent years are highlighted below –

(a) Budget consolidation measures

The Japanese Government implemented headcount control and measures to reduce payroll costs. For instance, the number of new graduates hired by the central government in 2013 is to be halved compared to 2009 while salaries are to be cut by about 8% in both 2012 and 2013. However, the Japanese cabinet has agreed in March 2013 that the cap for recruiting civil servant would be taken away. Besides, the retirement allowances for central government officials are to be reduced by 15% by 2014.

(b) Tax measures

(i) Taxes in Japan are paid on income, property and consumption on the national, prefectural and municipal levels. In 2009, taxes on income and profits and taxes on goods and services contributing around 30% and 19% of total tax revenue respectively.

(ii) Recently, the following measures were introduced to boost tax revenue :

- The Japan legislature passed legislation in August 2012 to increase the consumption tax rate in two stages, from the current 5% to 8% in April 2014 and 10% in October 2015. The increased revenue is to be used to finance additional social security spending in childcare, health and long-term care and pension.

- The 2013 Tax Reform Proposal included an increase in taxes for the wealthiest taxpayers by introducing a new 45% personal income tax rate band for those earning over JPY40 million (HKD 3.1 million). The current highest marginal income tax rate is 40% on taxable income over JPY18 million (HKD 1.4 million). There will be also an increase in inheritance taxes by reducing the basic deduction by 40%[2] and raising the top tax rate from 50% to 55%.

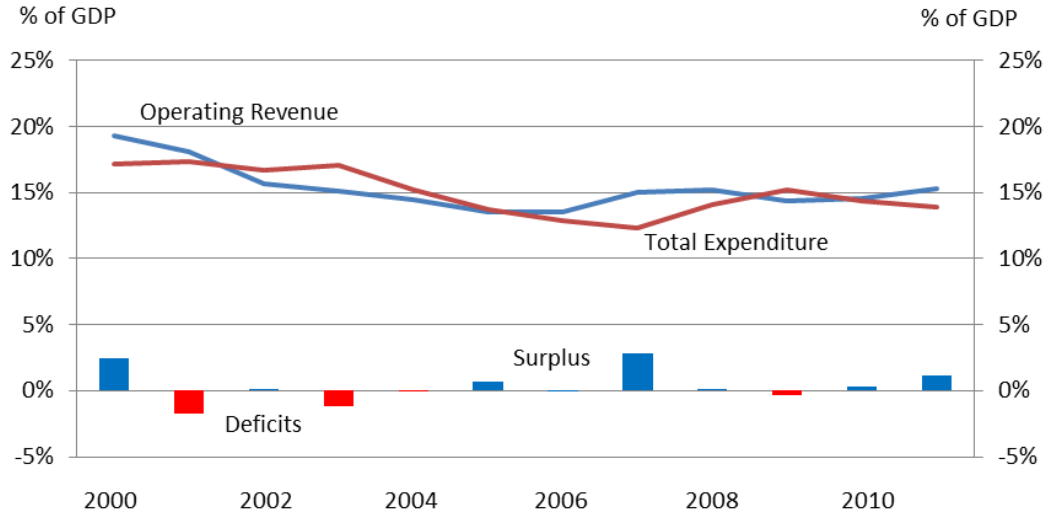
- The separate tax rate on capital gains and dividend income on listed stock has reverted back to 20%, after the expiry of a temporary tax rate of 10% by the end of 2013.

[2] The deduction amount will be changed from "JPY50 million plus JPY10 million multiplied by the number of statutory heirs" to "JPY30 million plus JPY6 million multiplied by the number of statutory heirs".

Singapore

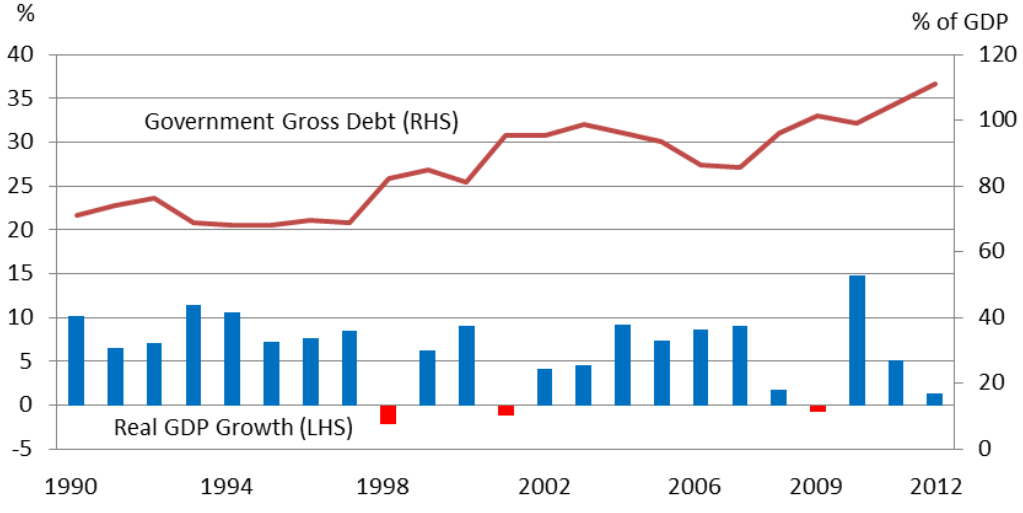
6.46 Singapore has run a balanced budget in the past decade. On average, the Overall Budget Balance was close to 0% of GDP[3].

Chart 6.10 – Singapore: Government revenue, expenditure and surplus/deficits (2000 – 2011)



Source: Ministry of Finance, Singapore Government

Chart 6.11 – Singapore: Government gross debt and real GDP growth (1990 – 2012)



Source: IMF WEO Database

[3] The average Overall Budget Balance from 2001 to 2011 was 0.2% of GDP.

6.47 Singapore enjoys an open environment, stable prices, and a per capita GDP higher than that of most developed countries. The top five industries contributing to about 75% of Singapore's GDP are manufacturing, wholesale and retail trade, finance and insurance, business services, and other service industries.

6.48 Real GDP growth averaged 8.3% between 2004 and 2007. The economy contracted 0.8% in 2009 as a result of the global financial crisis, but rebounded 14.8% in 2010, on the strength of renewed exports, before slowing to 5.2% in 2011 and 1.3% in 2012, largely a result of soft demand for exports during the second European recession.

6.49 Singapore has run a balanced budget in the past decade. The major government expenditure items are defense (23%), education (22%), transport (12%) and health (11%). Singapore undertook a major restructuring of its tax system in the early 1990s, including the introduction of the Goods and Services Tax (GST). The GST was introduced in April 1994 at 3%. It was increased to 4% in January 2003 and 5% in January 2004 and then to the current rate of 7% in July 2007. Each increase was accompanied by an offset package and direct tax rates were also reduced correspondingly.

6.50 Singapore's current public debt amounts to some 114% of GDP. However, the debt consists largely of Special Singapore Government Securities (SSGS) issued to meet the investment needs of the Central Provident Fund (CPF) Board, which administers Singapore's defined contribution pension fund. SSGS are held by the CPF, and are non-tradable. All proceeds from government borrowings are invested and are not used to finance government spending. The Government has not borrowed to finance expenditure since the 1980s. It operates on a balanced budget over each term of Government.

6.51 The fiscal measures undertaken by the Singaporean Government in recent years are highlighted below –

(a) Tax measures

(i) The personal income tax for Singapore residents is progressive, with rates ranging from 2% to 20%. Non-residents are taxed at the higher of 15% or the resident rate. Corporate income is taxed at 17%. The standard rate for Goods and Services Tax (GST) is 7%. In 2012, income tax and GST is estimated to contribute to 44% and 18% of government tax revenue in 2012.

(ii) Singapore announced the following measures in the 2013 Budget:

- From Year of Assessment (YA) 2015, housing and hotel accommodation provided to employees will be taxed based on the annual value of the premises, less rent paid by the employee and the actual cost of the hotel stay benefit provided to the employee respectively. In addition, the taxable value of furniture and fittings will be based on a percentage of the annual value of the housing accommodation.

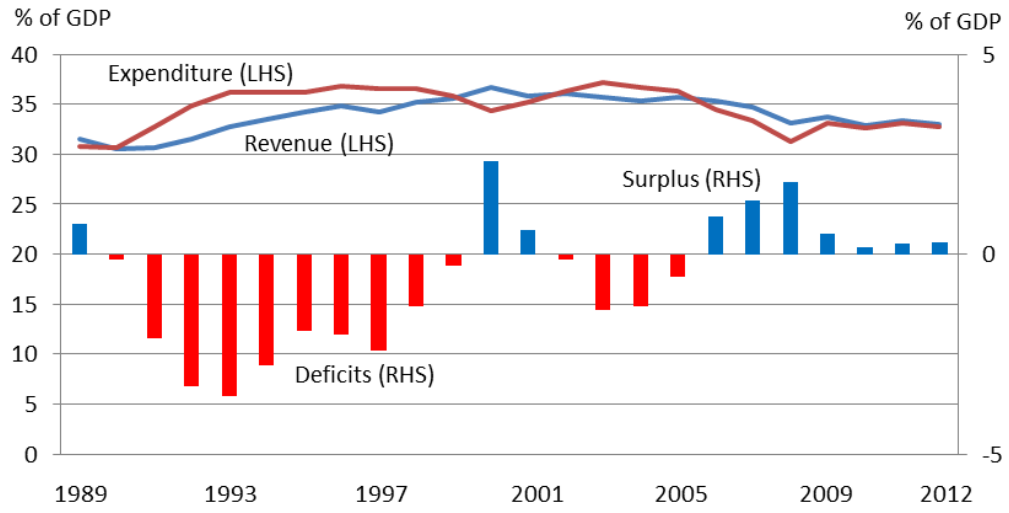
- The concession of allowing property tax refunds on vacant properties was removed with effect from 2014.

(iii) On the other hand, the Government will provide a three-year Corporate Income Tax rebate of 30% (capped at $30,000 per year) from YA 2013 to YA 2015.

Switzerland

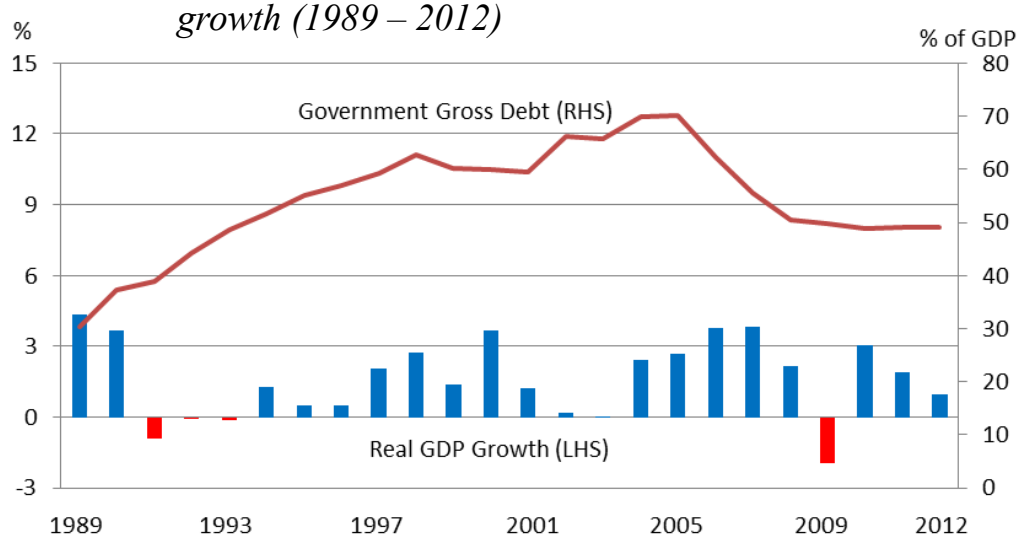
6.52 Switzerland experienced a positive growth in GDP over the past two decades, except 2009. Fiscal balance has been maintained since 2006 and government debt is on a decreasing trend.

Chart 6.12 – Switzerland: Government revenue, expenditure and surplus/deficits (1989 – 2012)



Source: IMF WEO Database

Chart 6.13 – Switzerland: Government gross debt and real GDP growth (1989 – 2012)



Source: IMF WEO Database

6.53 Switzerland's economy benefits from a highly developed service sector, led by financial services, and a manufacturing industry that specialises in high-technology, knowledge-based production. Its major industrial and services sectors are machinery, chemicals, watches, textiles, precision instruments, tourism, banking and insurance.

6.54 The top three major expenditures at general government level are spending for social security, education, and transportation and telecommunications. In 2011, the corresponding expenditures were around 38%, 17% and 9% of total budgeted expenditure.

6.55 The fiscal measures undertaken by the Swiss Government in recent years are highlighted below –

(a) Budget consolidation measures

(i) In 2001, 85% of Swiss voters approved the constitutional provision on the "debt brake", to ensure that the Confederation maintain its income and expenditure in balance at all times. The debt brake introduces a ceiling for total expenditure based on the expected income after taking account of the economic situation. In the medium term, the federal budget is balanced by using the debt brake, such that surpluses have to be managed in boom periods so as to compensate for deficits in subsequent recessions. Hence, there is no need for new borrowing.

(ii) Under the debt brake arrangement and in order to gain control over expenditure growth on a sustainable basis, task priorities will be examined from a medium-term perspective.

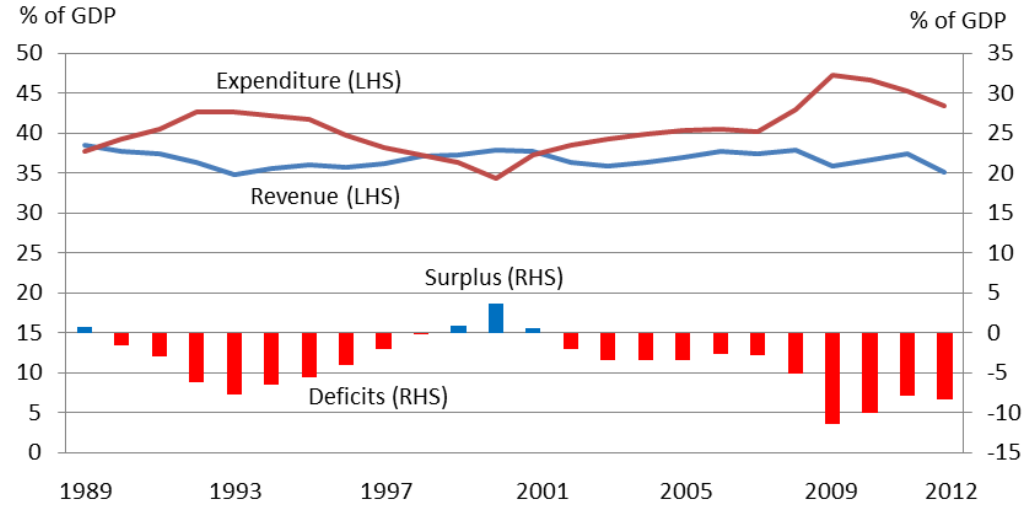
(b) Tax measures

(i) The Value Added Tax (i.e. standard rate of 8% and reduced rate of 2.5% for daily consumables) and direct federal tax (i.e. income tax and profit tax etc.) were around 35% and 29% of total government income in 2012. To finance disability insurance, the Swiss Government raised the standard Value Added Tax rate from 7.6% to 8% from 2011 to 2018.

United Kingdom

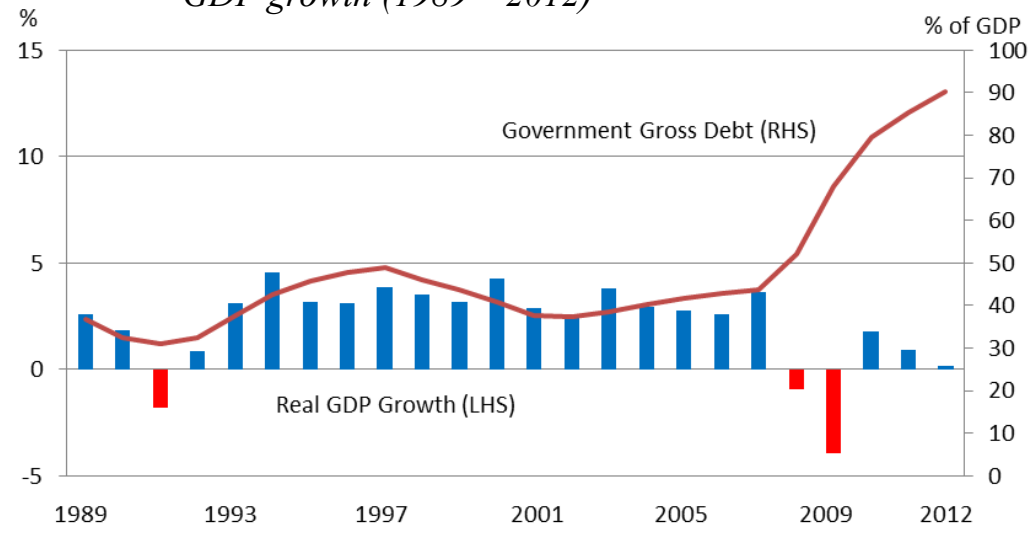
6.56 The UK has experienced a budget deficit since 2002. As a result, the government debt grows more than a double from 37.5% to 90.3% of the GDP in the period of 2002 – 2012.

Chart 6.14 – United Kingdom: Government revenue, expenditure and surplus/deficits (1989 – 2012)



Source: IMF WEO Database

Chart 6.15 – United Kingdom: Government gross debt and real GDP growth (1989 – 2012)



Source: IMF WEO Database

6.57 The UK is the second largest economy in Europe after Germany. Services, particularly banking, insurance, and business services, account by far for the largest proportion of GDP while industry continues to decline in importance. Agriculture is intensive, highly mechanised, and efficient by European standards, producing about 60% of food needs with less than 2% of the labour force. The UK has large coal, natural gas, and oil resources, but its oil and natural gas reserves are declining and the UK became a net importer of energy in 2005. Over the past two decades, the Government has greatly reduced public ownership and contained the growth of social welfare programs.

6.58 After emerging from recession in 1992, the UK's economy enjoyed the longest period of expansion on record during which time growth outpaced most of Western Europe. In 2008, however, the global financial crisis hit the economy particularly hard, due to the importance of its financial sector. Sharply declining home prices, high consumer debt and the global economic slowdown compounded the UK's economic problems, pushing the economy into recession in the latter half of 2008 and prompting the then Government to implement a number of measures to stimulate the economy and stabilise the financial markets. The measures included nationalising parts of the banking system, temporarily cutting taxes, suspending public sector borrowing rules, and moving forward public spending on capital projects.

6.59 The UK currently has a large primary budget deficit, as non-interest spending far exceeds non-interest receipts. Major government expenditure items are social protection and personal social services (£251 billion; 35%), health (£137 billion; 19%), and education (£97 billion; 13%).

6.60 The fiscal measures undertaken by the UK Government in recent years are highlighted below –

(a) Budget consolidation measures

(i) In the face of rising public deficits and debt levels, the UK Government initiated in 2010 a five-year austerity programme, which aimed to lower the budget deficit from over 10% of GDP in 2010 to nearly 1% by 2015. In November 2011, the Chancellor of the Exchequer announced additional austerity measures through 2017 because of slower-than-expected economic growth and the impact of the euro-zone debt crisis.

(ii) The Budget 2013 reinforced the UK Government's commitment to deficit reduction and announced further details on the deficit reduction plans, primarily through spending consolidation. In gist, the Budget 2013:

- announced a reduction in departmental recurrent expenditure budget by £1.1 billion (or 0.3%) in 2013-14 and £1.2 billion in 2014-15. The schools and health budgets remain unchanged;

- fixed the total government expenditure for 2015-16. Health, schools and Official Development Assistance will be protected;

- confirmed the path of future fiscal consolidation, expressed as an assumption that total government expenditure in 2016-17 and 2017-18 will continue to fall at the same rate as over the Spending Review 2010 period; and

- announced that the Government would strengthen the public spending framework by introducing a firm limit on a significant proportion of centre-funded expenditure, including areas of welfare expenditure. This will be designed in a way that allows the

automatic stabilisers to operate to support the economy.

(b) Tax measures

(i) In the UK, personal income tax is progressive and ranges from 20% to 45%. The personal income tax is expected to be the largest portion of government revenue, amounting to 25% of government revenue in 2013-14.

(ii) Value Added Tax (at 20%) and corporate tax (at 23%) are two other major sources of government income. As the principal indirect tax in the UK, Value Added Tax is expected to be 17% of government revenue in 2013-14. Meanwhile, the corporation tax is expected to be 6% of government revenue in 2013-14.

(iii) The UK Government has increased the standard rate of Value Added Tax from 17.5% to 20% from 2011 to reduce its budget deficit.

(iv) On the other hand, the following measures were also introduced in recent years to lessen tax burdens of the public :

- reducing the main rate of corporation tax from 28% in 2010 to 23% in 2013, and to 20% by 2015, cutting the rate of corporation tax for companies with small profits from 21% to 20%;

- increasing personal tax allowance by £560 to £10,000 in 2014; and

- changing the way the UK taxes overseas profits to concentrate on taxing profits from UK activities

Conclusion

6.61 The Working Group noted that in preparation for an ageing population, a few governments have established savings schemes with or without designated purposes to hedge against known commitments in future. As a response to the global financial crisis, there is growing recognition that fiscal discipline should be tightened. As a result, fiscal rules have been imposed and independent fiscal oversight authorities established. The Working Group has reflected on the findings and developed recommendations in the following chapter.

Chapter 7 – Proposed Fiscal Measures

Overview

Structural deficit looming

7.1 As the Hong Kong economy matures, and as our economic growth becomes constrained by the ageing population –

(a) nominal **GDP** growth under the **Base Case** is projected to lower from 5.5% per annum in the coming years to 5% per annum in the late-2010s, 4.5% as from 2022 and further to 4% as from 2026. For ease of presentation, this implies a growth rate of **4.4% per annum** up to 2041, lower than the corresponding 5.4% per annum for the past 10 years;

(b) **government revenue** is projected to grow at **4.5% per annum** to 2041, following rather closely the expected growth pattern of the economy;

(c) however, **government expenditure** is projected to grow at **5.3%** per annum under the No Service Enhancement Scenario or between **6%** and **7.5%** per annum under the various Service Enhancement Scenarios to 2041.

Table 7.1 – Projected annualised trend growth rates of GDP, government revenue and government expenditure

	Projected Trend Growth (Base Case, No Service Enhancement Scenario)	**Trend Growth in recent years**	
	2014-15 to 2041-42	1997-98 to 2014-15	2009-10 to 2014-15
Real GDP	2.8%	3.4%	3.9%
Nominal GDP	4.4%	2.9%	6.0%
Government revenue	4.5%	2.5%	6.2%
Government expenditure	5.3%	4.7%	7.5%

7.2 Despite the healthy state of our public finances at the moment, the Base Case **No Service Enhancement Scenario** reveals that a **structural deficit** could strike in 2029-30 (within 15 years) even if services for the education, social welfare and health sectors were to be maintained at existing levels, and expenditure would grow merely with price changes and demographic changes. The problem could surface much earlier (within a decade) under the **Service Enhancement Scenarios**.

Fiscal health deteriorating

7.3 Unless the Government takes timely, resolute and effective measures to address the problem, the healthy state of our public finance would deteriorate gradually under the No Service Enhancement Scenario and more rapidly under the three Service Enhancement Scenarios, by phases –

(a) **Living with surplus** – government revenue is still projected to exceed government expenditure in the coming years and the Government would still be able to build up the fiscal reserves. The good years ahead will give the community a false sense of security.

(b) **Living on reserves** – a structural deficit could surface within a decade or two should government expenditure growth keep exceeding revenue growth. The Government would be dipping into the fiscal reserves to fund the shortfalls. Depending on the expenditure pattern, this could last for seven to 12 years.

(c) **Living on borrowing** – upon exhaustion of fiscal reserves, the Government would have no choice but to borrow to make ends meet. Debt liabilities could escalate quickly.

7.4 With our fiscal reserves still standing strong, and with Government having achieved successive years of budget surplus since 2004-05, the community may find it hard to accept the harsh reality that a structural fiscal problem could strike within a decade or two. The Working Group is conscious of the need to **avoid exaggerating the expenditure projections**. In fact, the projections are based on the current policies and service levels, including the new policies and initiative announced in the 2014 Policy Address or reflected in the 2014-15 Budget. The projections have **not** taken into account the financial implications that could arise from policy initiatives under consultation or review, including those relating to kindergarten education, health protection scheme (except for the $50 billion set aside for 2015-16), etc.

7.5 The Working Group is also conscious of the need to **avoid understating the revenue projections**. The current projections - that government revenue would move in tandem with GDP and would stay at around 20% of GDP from now to 2041-42, are **rather robust** already given the projected decline in labour force in a fast ageing economy. These projections for Hong Kong are also very consistent with the revenue trends in the seven economies reviewed; as a percentage of GDP, their revenue streams tended to fluctuate within a very narrow margin.

7.6 The Working Group holds strongly that the projections from this report should be treated as a wake-up call for the Government and the community to appreciate the scale of the structural deficit problem that could beset the Hong Kong community, given the ageing population and other known and potential financial commitments. The size of the fiscal deficit problem and the timing it sets in would depend in large part on how effective the Government is in aligning the growth in government expenditure with the growth in government revenue and the economy.

Fiscal consolidation needed

7.7 To minimise the impact of a looming structural deficit and to delay its trigger, the Government must guide the community through a tough **adjustment** process. This would require public education, buying in from the community, and ultimately determination and leadership on the part of the Government to take steps towards fiscal consolidation.

7.8 The Working Group appreciates that it is difficult for the Government to resist pressure to spend more on worthy priorities, especially during good years. But experience overseas shows also that it is far more difficult having to pick up the pieces when government debts run high, when government services have to be cut even in a recession, and when short-term fixes can no longer work to alleviate the long-term problems. The Working Group would therefore recommend that **early and pragmatic steps** be taken.

7.9 The Working Group acknowledges that no simple measure exists to solve the structural deficit problem. As it is not tasked to identify and analyse policy options that fall beyond the remit of the Treasury Branch of the Financial Services and the Treasury Bureau, the Working Group has focused mainly on fiscal measures, as elaborated in the following sections. The broad directions are –

(a) containing expenditure growth;

(b) preserving, stabilising and broadening the revenue base;

(c) saving for the future;

(d) segregating and balancing the Operating and Capital Accounts;

(e) making clear what the fiscal reserves cover;

(f) stepping up the management of the Government's assets; and

(g) sustaining the financial health of the Housing Authority.

(A) Containing expenditure growth

7.10 Since the 1970s, successive Financial Secretaries have adhered to the budgetary principle that, over time, expenditure growth should not exceed the growth of the economy. This principle has in fact formed part of Article 107 of the Basic Law, which offers the constitutional framework for the prudent management of the public finances.

7.11 The Working Group noted with concern that growth in government expenditure in recent years has outpaced that of the economy. With the impact of an ageing population setting in and government expenditure set to escalate, and with government revenue forecast to stay at around 20% of GDP, it is no longer sustainable to continue the past rates of expenditure growth.

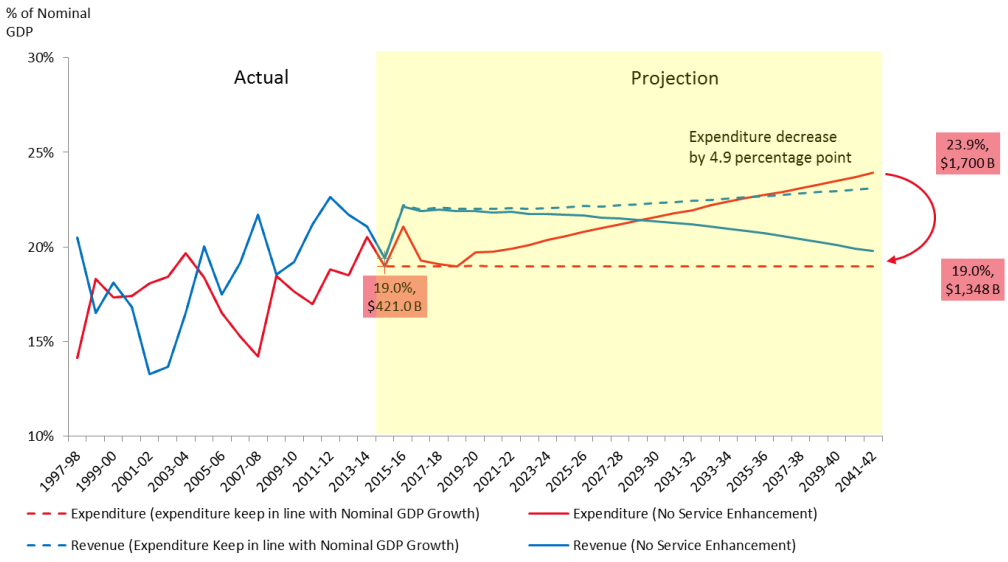
7.12 The Working Group sees a strong need for the Government to retain the expenditure rule and to enforce it with added rigour. The Working Group's specific recommendations are described in the ensuing paragraphs.

Capping overall expenditure growth

7.13 When preparing for the annual budgets, the Government should adopt the forecast nominal GDP growth rates over the medium term as planning ceilings for the growth allowed for aggregate government expenditure. Greater regard should be given to long-term affordability, and resources should be directed to areas that promote economic growth amongst other competing community needs. A vigorous and effective internal monitoring mechanism should also be in place to ensure that extraordinary growths allowed for any particular policy area group must be offset by slower growths or even cuts in other areas.

7.14 For illustration purpose, the estimated government expenditure in 2014-15 is 19% of nominal GDP. If the Government could contain expenditure growth in line with the nominal GDP growth from now to 2041-42, government expenditure would grow at an average rate of 4.4% per annum, and would stay at 19% of nominal GDP in 2041-42. There would be annual budget surpluses ranging from some 3% to 4% of nominal GDP under the Base Case. An illustration is as follows –

Chart 7.1 – Projections on revenue and expenditure



7.15 As compared with the Base Case No Service Enhancement Scenario, expenditure in 2041-42 could be reduced by 4.9 percentage points and revenue could increase by 3.3 percentage points of nominal GDP as a result of additional investment income.

7.16 Containing expenditure growth is the most direct and effective measure to help reduce the fiscal sustainability problem. Its implementation would require tough sacrifices. It is worth noting that 19% of nominal GDP is even lower than the projected share of 23.9% of nominal GDP under the No Service Enhancement Scenario. It follows that this expenditure ceiling would effectively entail negative real growth in service level through service cuts or offsetting extraordinary growth in one area by reduction in another.

Containing the size of the public sector

7.17 Successive Financial Secretaries have applied 20% of GDP as the guideline ratio or ceiling for the size of the public sector. When first quoted in the 1976-77 Budget Speech, the then Financial Secretary stated that *"when public expenditure, appropriately and consistently defined, reaches a certain proportion of total expenditure of the GDP, the growth rate of the economy as a whole is damaged for resources are being used less profitably in the public sector than they could be in the private sector."* (paragraph 31 of Concluding Speech, 1976-77 Budget).

7.18 Paragraph 33 of the same Speech stated that "*the guideline ratio for the size of the public sector is only one of the several guidelines which I bear in mind when devising budgetary strategy…none is absolute, but each is grounded in historical experience….*"

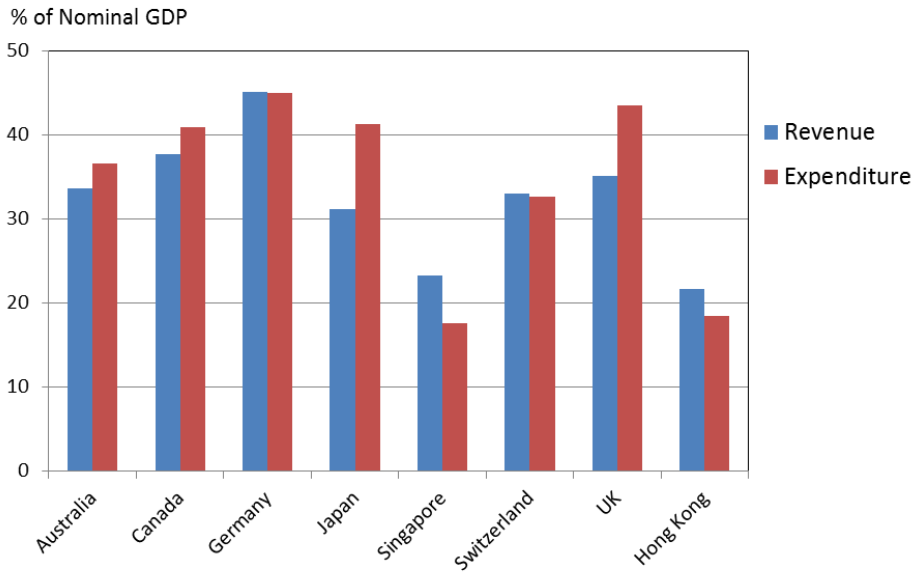
7.19 Between 1997-98 and 2012-13, annual public expenditure was on average 19.3% of the GDP, with the Government's expenditure being 17.4% of GDP, and that of the Housing Authority and the Trading Funds averaging at 1.9% of GDP. Looking forward, Government's expenditure alone is projected to grow to 23.9% of GDP by 2041-42 under the Base Case No Service Enhancement Scenario.

7.20 The Working Group has reviewed whether the 20% guideline for the public expenditure is still relevant and appropriate. On the one hand, the Government's expenditure is projected to grow well beyond 20% of GDP, and the Housing Authority has committed to an aggressive works programme. There is clear pressure for public expenditure to grow beyond 20% of GDP in the long run. On the other hand, government revenue is projected to continue yielding only at around 20% of GDP. In fact, **government revenue as a percentage of nominal GDP has seldom exceeded 20%** (only seven times in the past 40 years). Thus, the "excess" in public expenditure beyond 20% of GDP is not likely to be matched by a corresponding "excess" in revenue. Unless we

manage to boost our economic growth to increase revenue yield and substantially broaden our revenue base beyond 20% of GDP, it would not be prudent to allow public expenditure to grow well beyond its earning capacity.

7.21 The Working Group noted occasional comments that Hong Kong could be losing out to other economies because we were not spending enough on education, infrastructure, etc., and that therefore we should seek to raise our investments in various policy areas beyond the 20% of GDP limit to catch up with others. As *Chart 7.2* below illustrates, however, the expenditure profile of different economies is very much dictated by its revenue profile. With revenue roughly measuring around 20% of GDP, it would not be responsible to require the Government to spend up to say 40% of the GDP. Living within one's means is a basic fiscal discipline. It should be noted that fiscal discipline does not require stalling all new and worthy initiatives – because the economy is still projected to grow, albeit at a slower pace. But it does require greater regard to long-term affordability, and readiness to accept offsetting savings.

Chart 7.2 – Revenue and expenditure of overseas economies in percentages of nominal GDP



Sources: Other countries - IMF WEO Database (for 2012)
Hong Kong - Government's figures for 2012-13

7.22 On balance, given the need for tightening fiscal discipline, the Working Group **recommends** that the "20% of GDP" guideline for the public expenditure be retained.

Assessing fiscal sustainability before introducing major spending initiatives

7.23 The Working Group sees a need to pay **greater regard to longer term affordability and fiscal sustainability**. As a tool to assist in decision making, the Working Group **recommends** that the Government should require all major spending initiatives (say those involving recurrent funding of $100 million or more) to go through a fiscal sustainability assessment (covering affordability, cost effectiveness and value-for-money angles). An assessment model making reference to the model established for the Working Group should be developed. The new model should ideally be able to take into account the cumulative impact of spending initiatives that straddle across different policy bureaux.

Doing more with less

7.24 When expenditure growth is constrained, the public sector would need to introduce frugality measures to try to do more with less. The Working Group **recommends** that the major spending bureaux/ departments and key subvented bodies should undertake fundamental expenditure reviews to explore ways and means for enhancing productivity.

7.25 The Working Group also **recommends** that the Government should launch service-wide economy and re-engineering and reprioritization (R&R) drives periodically in order to ensure that the public service would remain lean and efficient. Resources held back by outdated priorities should be released and work with little or no value-added should be dropped. Greater effort should be directed to streamlining work processes and compliance requirements.

Managing the capital works programme

7.26 When preparing the long-term projections for the capital works programme (covering works funded under CWRF and the Lotteries Fund), the Working Group has assumed that these expenditures would remain as a constant share of **real** GDP, at 3.4% based on the historical average over some 30 years. Since the public construction output price tends to rise more rapidly than the GDP deflator, the capital works programme is projected to grow and reach some 7.2% of the **nominal** GDP by 2041-42, compared with 3.2% in 2014-15. This projected growth trend of the capital works programme, well exceeding that of the economy over time, would not be fiscally sustainable. It would also undermine the counter-cyclical effect which capital works projects may occasionally be designed to bring.

7.27 The Working Group **recommends** that the Government should manage the capital works programme with a view to keeping the annual cash flow requirements at or around 3.2% of the nominal GDP over a period. The Working Group appreciates that the capital works programme delivers important transport, economic, health, education and social infrastructure and underpins the long term economic development for Hong Kong. As such, the Government's continuous commitment is important. There are over 700 works projects that are under way and many others have reached an advanced stage of planning. The Working Group does not recommend a stop-go approach to the planning of long term infrastructure projects. However, when considering new projects for the medium term and beyond, there will be a clear need to prioritise the use of resources under both the CWRF and the Lotteries Fund. The Government should review the phasing of projects to avoid bunching and capacity constraints driving prices.

7.28 Capital projects under the CWRF account for the lion's share of the capital works programme being tracked. These CWRF projects are mainly funded by land revenue receipts accruing to the CWRF. Since land revenue is projected to be around 3.3% of nominal GDP in the long run, managing the capital works expenditure at or around 3.2% of nominal GDP over a period is not unreasonable.

7.29 In short, the Working Group **recommends** that –

(a) Overall expenditure growth should be contained, with offsetting from programmes within and amongst different policy area groups.

(b) Having regard to the long-term revenue projections, public expenditure should be contained at around 20% of GDP.

(c) Fiscal sustainability should be assessed for major recurrent spending initiatives exceeding $100 million.

(d) Fundamental expenditure reviews should be undertaken for the key spending bureaux/departments and subvented bodies.

(e) Service-wide economy and re-engineering and repriortisation drives should be launched periodically to ensure that the public service would remain lean and efficient.

(f) The capital works programme should be managed with regard to the nominal GDP growth and the Capital Account balance.

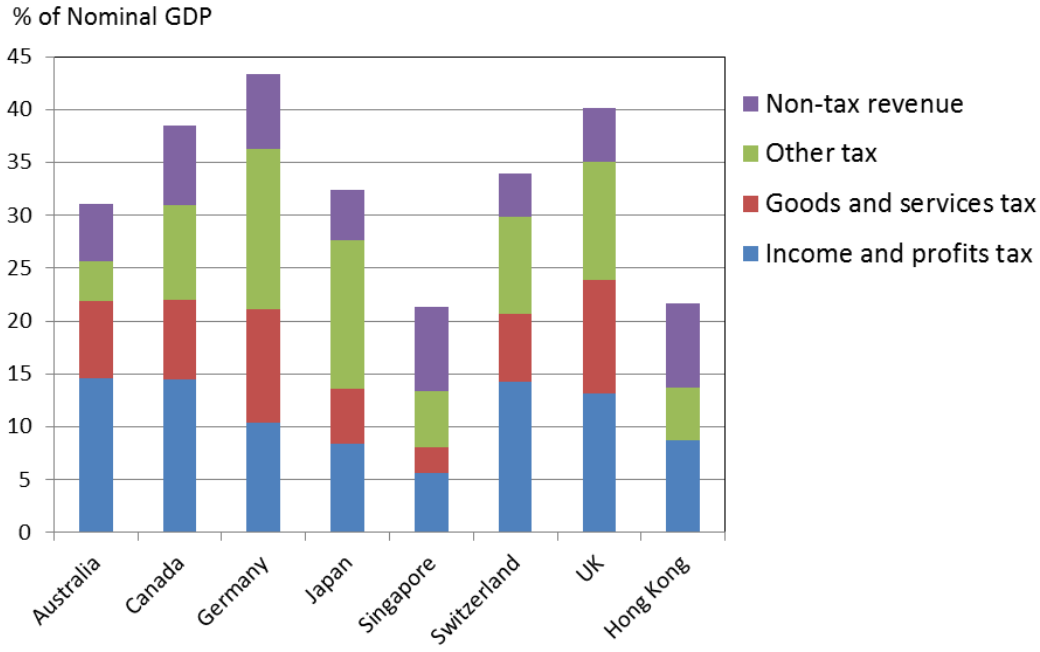
(B) Preserving, stabilising and broadening the revenue base

7.30 Government revenue has tended to grow broadly in line with economic growth. Looking ahead, government revenue is also projected to grow in line with GDP and would remain at the current level of about 20% of nominal GDP (**Base Case**).

7.31 With a structural deficit looming within a decade or two, the Working Group believes that the main fix is to contain the growth of government expenditure, more so than to rely on revenue increases beyond the levels commensurate with GDP growth. The Working Group **recommends** that the other main priority of the Government is to identify growth opportunities for the economy, and to preserve, stabilise and broaden the revenue base. The latter can be achieved through avoiding excessive reliance on direct taxation, stepping up tax enforcement, avoiding base erosion and profit shifting, and reinforcing the "cost recovery", "user pay", and "polluters pay" principles, etc. In due course, the Government should continue to enhance the tax regime to ensure that the tax structure can meet with the long-term needs of Hong Kong. New revenue sources should not be ruled out.

Avoiding excessive reliance on direct taxation

Chart 7.3 – Revenue as a percentage of GDP of selected countries



Sources: Other countries - OECD (for 2010)
Singapore - Singapore 2013 Budget
Hong Kong - Government's figures for 2012-13

7.32 As seen from *Chart 7.3*, in the absence of a goods and services tax and with over 40% of non-tax revenue coming from land premium, the revenue streams for Hong Kong are more vulnerable to economic downturns as compared with other countries. To avoid excessive reliance on direct taxation, the Government should accord more priority to indirect taxation and other non-tax forms of revenue collection. Indirect tax items which have not been adjusted for years should be reviewed. Revenue from indirect tax on consumption goods such as tobacco duty and motor vehicles first registration tax should be protected to combat tax evasion.

Stepping up tax enforcement

7.33 On the premise of maintaining the existing low and simple tax regime, the Working Group **recommends** that the Government should strive to prevent revenue losses on payable taxes. Taking profits tax which is one of our key revenue sources as an example, while the number of registered corporations has more than doubled over the past 13 years (864 000 in 2011-12 year of assessment as compared to 363 000 in 1999-2000), the proportion of taxpaying corporations has decreased from 14% in 1999-2000 to 11% in 2011-12. There has indeed been an upsurge of newly incorporated companies in recent years, in particular in the past three years which recorded double-digit growth in the number of registered corporations each year. However, many of the registered corporations do not need to pay any profits tax as they are either dormant companies, newly formed corporations with the first profits tax returns not yet issued, loss cases and cases with no assessable profits (such as investment holding companies). To ensure that taxpayers comply with the statutory obligations, the Government should continue with its robust efforts to assess and recover any underpaid tax from companies through enhanced audit and investigation strategies.

7.34 With Hong Kong's expanding tax treaty network, the Government should also make use of the existing mechanism to obtain information from other jurisdictions in facilitating tax audit and investigation. Together with risk analysis by use of information technology, resources would be more effectively deployed to deal with high-risk cases which, in general, have higher likelihood of yielding larger amounts of audit adjustments and penalties. These combined measures will serve to protect Hong Kong's revenue base and create deterrence.

Reinforcing the "cost recovery", "user pays" and "polluter pays" principles

7.35 To prevent cost recovery items from being turned into heavily subsidized items, the Working Group recommends that Government should put in greater collective effort to seek to improve the cost recovery rates for various services, even though this option alone cannot contribute much to relieve our fiscal woes. The fees and charges collected in 2012-13 is $11.6 billion, representing 2.6% of our total revenue, as compared with $11.3 billion and 4% respectively in 1997-98. The Working Group also **recommends** that the Government consider introducing new revenue items when new policies or services are implemented, e.g. waste collection fees or green tax.

7.36 For illustration purpose, the Working Group has tested the impact of improving the cost recovery rates for government services. If the Government could increase the fee levels by say 8.5% per annum (with 3.5% to cover inflation and 5% to improve the cost recovery rates) for five years, the additional annual revenue that could be generated in the fifth year and onwards would be around $5.8 billion. This analysis is for illustration purpose only and does not reflect the actual situation of the current cost recovery rates of government fees and charges; nor does it imply the Government's intention to increase the fee levels of all its fees and charges by such an extent in the coming revisions.

Reviewing our tax structure

7.37 Article 108 of the Basic Law prescribes that the HKSAR –

"shall, taking the low tax policy previously pursued in Hong Kong as reference, enact laws on its own concerning types of taxes, tax rates, tax reductions, allowances and exemptions, and other matters of taxation.

7.38 Raising the tax rates for the income and profits taxes will not be in line with the bid to maintain and enhance the competitiveness of Hong Kong. Nor will this be popular.

7.39 The Working Group **recommends** that the Government should continue to enhance the tax regime to ensure that the tax structure can meet with the long-term needs of Hong Kong and the fiscal pressures in the long run. While the long-term possibility of introducing new taxes should not be ruled out, the Working Group notes that steps to broaden the tax base are bound to be controversial, as evidenced by the lack of public support for a proposed goods and services tax in the context of the Government's public consultation on tax reform conducted in 2006.

7.40 Again, for illustration purpose, the Working Group has examined the impact of doubling the profits tax rate (from 15% to 30% for unincorporated businesses; from 16.5% to 33% for corporations) and the salaries tax rate (from 15% to 30%). Even in such an extreme scenario, the estimated additional revenue would only be some $169 billion or about 8% of the nominal GDP for 2013. Such an extreme adjustment would obviously have serious and major adverse impact on the economic development of Hong Kong. It would undermine the attractiveness of Hong Kong as a place for business. The net revenue gain through such a doubling of the standard profits and salaries tax rates would be much lower than 8% of the GDP in the long run. With a projected fiscal gap reaching 8.6 to 21.7 percentage points of nominal GDP in 2041-42 under the various Service Enhancement Scenarios (Base Case), major adjustments to the profits and salaries tax alone would not be an effective cure.

(C) Saving for the future

7.41 Much has been debated over the years as to what the optimal level of fiscal reserves should be – the equivalent of 12 or 18 months of government expenditure or what. The contention has always been one between Government spending more, taxing less or a combination of these, and Government keeping enough to meet our long-term needs, given the vulnerability of our small and open economy.

7.42 It is always hard to find the right balance that can be agreeable to all. Given the obvious fiscal pressures that the long-term projections have unveiled, the Working Group believes that the call for prudence and the need to save for the next generation is far more urgent and critical than in the past.

7.43 Research shows that some economies (like Australia) have created funds for stabilisation and savings purposes. Depending on their specific objective, these funds are named as stabilisation funds, savings funds, funds for future generations, etc. These funds are meant to be locked up until after an agreed period, or until the savings have accrued beyond planned levels. They may also have escape clauses that allow the government to draw on them in case of need like successive budget deficits. In the case of Singapore, constitutional safeguards exist such that the Government of the day cannot draw on the reserves accumulated during previous terms of Government (Past Reserves) unless with the approval of the President; only up to 50% of the net investment return, on a real basis, on past reserves could be deployed as government spending every year. The reserves are invested with the aim of generating sustainable returns over the long-term.

7.44 In view of the anticipated future spending pressure for Hong Kong, the Working Group **recommends** that the Government should start saving for the future. The objective is to set aside a portion of the fiscal reserves and annual surplus, invest these, so that the provision can be released after a designated period to help relieve

the pressure on the future generations.

7.45 Worth noting is the special nature of the Land Fund which was formed by Resolution in 1997 to receive and hold all the assets, upon the establishment of the Government of HKSAR, from the HKSAR Land Fund. The Fund does **not** have expenditure and has not been forming part of the Operating or Capital Account of the Government although its balance is treated as part of the fiscal reserves. The Fund attracts investment returns. However, the Fund has no authorised use. Should the Financial Secretary decide to draw down on the Land Fund, he would need to seek the approval of the Legislative Council, as was the case in 2003-04 and 2004-05 when $120 billion and $40 billion respectively was transferred to the General Revenue Account to meet the anticipated cash flow shortfall resulted from the repeated budget deficits since 2000-01. The balance in the Land Fund cannot be "readily deployed".

7.46 As is, the Land Fund has since 1997-98 served as a *de facto* standby facility for the Government. The Working Group **recommends** that the Financial Secretary explore the feasibility of turning the Land Fund into a "Future Fund" or savings scheme for the future generation. With a ready "endowment" of some $220 billion, the Future Fund will be able to build on its investment returns. On top of this, however, the Future Fund would need other sources of income, like a percentage share of the surpluses in either the Operating/ Capital Account levels or the Consolidated Account level. The percentage contribution can be fixed for each year for **at least ten years**. As a discipline, and to avoid the Future Fund being drawn down too readily, at the expense of the future generations, there should be a time bar before withdrawals can be contemplated. The rule may be – no withdrawal earlier than ten years from start, or no earlier than after two successive years of budget deficit.

7.47 The Working Group has deliberated on whether the Future Fund should have pre-agreed designated use – say, for social welfare, health or retirement protection, etc. Since it is hard to foresee what the spending priorities would be ten years or so down the road, the Working Group **recommends** that a pragmatic approach is to leave the use and *modus operandi* open and just focus on when the amount would be drawn.

7.48 In order that the community can focus on the size of the Future Fund and avoid confusion with the other parts of the Fiscal Reserves which have other uses, the Working Group also **recommends** that the Future Fund, notionally held against the Land Fund, with regular top-ups from its own investment returns and perhaps contributions from future surpluses, should not be accounted for as part of the fiscal reserves. It will be presented separately.

7.49 The Land Fund as it is does not belong to the Operating or Capital Account. Thus, the proposal to set up a Future Fund, to be held against the Land Fund, would not have serious impact on the Operating or Capital Account (except that investment returns on the Land Fund balances would count towards the Future Fund, not the Operating Account).

7.50 The Working Group **recommends** that the savings scheme be established as soon as practicable; however, the Financial Secretary may wish to consult relevant stakeholders on the detailed mechanics on how the Future Fund should be managed.

7.51 For illustration purpose, assuming that the Future Fund would be set up by an "endowment" of $220 billion of the Land Fund in 2014-15 and one-third of the Government's future budget surpluses and investment returns (assuming 5% annual return) of the Fund are channelled to the Fund, the balance of the Future Fund ten years later in 2023-24 would be around $510 billion, or 14.7% of nominal GDP.

(D) Segregating and balancing the Operating and Capital Accounts

7.52 One of the long-established budgetary criteria is that the Government should aim to achieve a balance in the Consolidated and Operating Accounts. As stated in Appendix to the 2014-15 Budget Speech, the Government needs, over time, to achieve an operating surplus to partially finance capital expenditure.

7.53 In the light of the anticipated structural deficit, the Working Group has reviewed whether the budget balance rule needs beefing up.

7.54 The Working Group has drawn reference from the budgetary guidelines adopted in the 1970s. The ones relating to expenditure include the following –

(a) the split between **recurrent** and **capital** expenditure should be broadly 70:30;

(b) **recurrent expenditure** should absorb no more than 80% of **recurrent revenue** – the surplus would then be a cushion to help fund capital projects; and

(c) **capital expenditure** should be met by **capital revenue** (at least 20%), supplemented by recurrent surpluses (at least 60%) and if necessary **loan financing** for "self-liquidating projects"[1].

7.55 Since the 1970s, the Government's Recurrent and Capital Accounts have become more sophisticated. The Recurrent Account has been retitled as the Operating Account in 2004-05. Quite a number of funds with designated use have been established by Resolution under the Public Finance Ordinance (Cap. 2), including the Capital Works Reserve Fund (CWRF), the Lotteries Fund, the Innovation and Technology Fund, etc.

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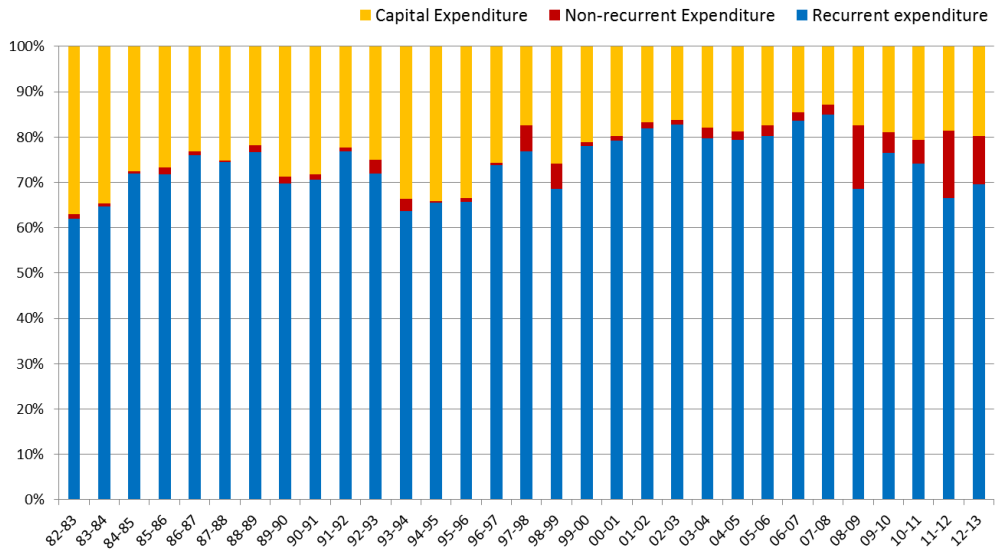
[1] Self-liquidating projects in general refer to those projects that generate adequate income to return the total amount of their costs.

Target split between operating and capital expenditure

7.56 The Working Group noted that the 70:30 split between operating and capital expenditure was broadly maintained before 1997-98. As from 1997-98, the split is generally around 80:20 as illustrated in *Chart 7.4*. Operating expenditure is further split into recurrent and non-recurrent expenditure. Non-recurrent expenditure is expenditure of one-off in nature and its requirement fluctuates yearly on a need basis. Since 1997-98, non-recurrent expenditure accounted for 0.5% to 18% of the operating expenditure.

Chart 7.4 – The split between operating (recurrent + non-recurrent) expenditure and capital expenditure



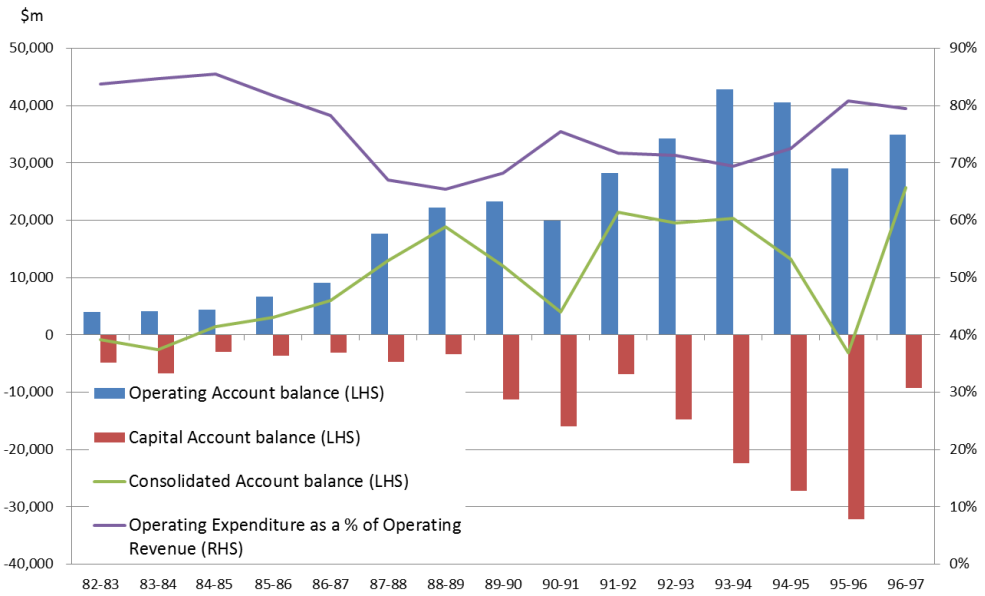
7.57 Given the changes overtime, it would not be too meaningful to impose a rigid guideline on what the split between operating and capital expenditure should be. As a principle, however, the Working Group **recommends** bringing home the simple message that recurrent expenditure tends to be a lot more inelastic than non-recurrent or capital expenditure; as such, the Government should exercise far greater caution before committing to new initiatives with recurrent (as against one-off) cost implications.

Operating expenditure as a percentage of operating revenue

7.58 Living within one's means is a fundamental fiscal discipline. It is no surprise therefore that the Government has, for years, tried to contain its operating expenditure within 80% of its operating revenue, leaving a 20% buffer to fund one-off requirements.

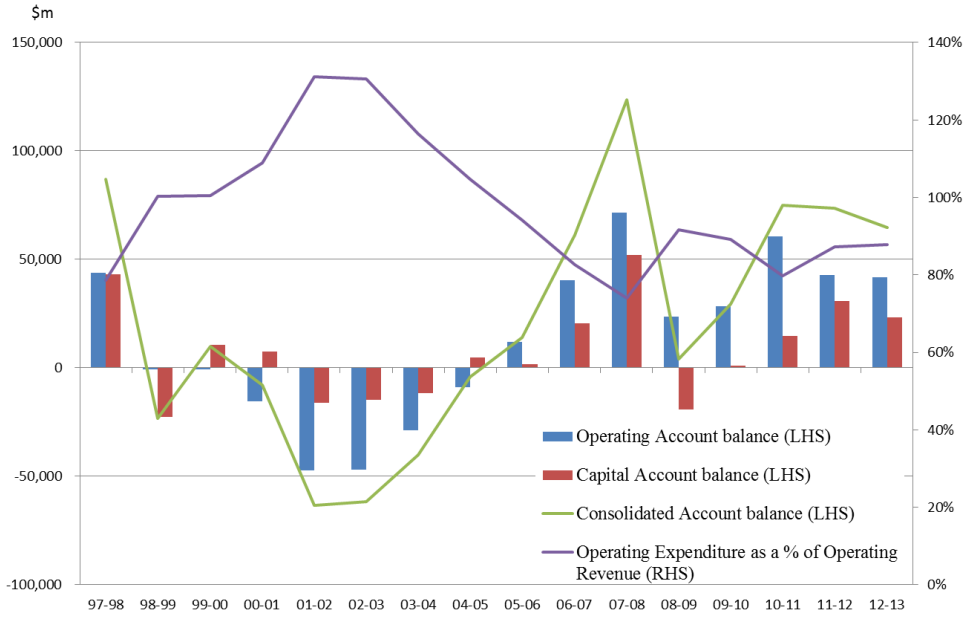
7.59 **For the 15 years prior to 1997-98**, the Government's Operating Account had consistently been running at surpluses, as illustrated in *Chart 7.5* below; **operating expenditure was on average 76% of operating revenue**. During the same period, the Government's Capital Account had consistently been running at deficits, reflecting in part the funding pressure attributed to the airport core programme, and in part the pre-1997 arrangement whereby 50% of the land sale proceeds were set aside for the HKSARG Land Fund rather than being credited to the CWRF within the Government's Capital Account. The surpluses from the Operating Account were of great help to defray the shortfalls in the Capital Account.

Chart 7.5 – Operating Account and Capital Account from 1982-83 to 1996-97



7.60 **For the 16 years between 1997-98 and 2012-13**, the role of the Operating Account to help cover shortfalls in the Capital Account has diminished, as illustrated in *Chart 7.6* below. **Operating expenditure was on average 97% of operating revenue**; as such, much less is left as buffer to help meet occasional shortfalls in the Capital Account. On the other hand, windfall surpluses in the Capital Account have tended to give rise to pressure to increase expenditure, including expenditure of a recurrent nature. This may not be financially sustainable. It should be noted that as from July 1997, land sale proceeds have been credited to the CWRF. However, land revenue (capital in nature) is highly sensitive to the performance of the economy and to changes in government policy; as such, the performance of the Capital Account is very volatile. During the economic downturn between 2001-02 and 2003-04, both the Operating and Capital accounts went into deficits; but since the Operating Account could not offer any buffer to help meet shortfalls in the Capital Account, the Government had to draw down on its fiscal reserves during the period.

Chart 7.6 – Operating Account and Capital Account from 1997-98 to 2012-13



7.61 Between 2005-06 and 2012-13, the Government's operating expenditure was on average 86% of operating revenue, leaving about 14% on average to serve as buffer for the Capital Account and other contingencies.

7.62 The Working Group has examined the propriety of reinstating a guideline to contain operating expenditure as a percentage of operating revenue. Since many mega works projects under the Ten Major Infrastructure Works Programme are still under way and since investments in economic and social infrastructure like hospitals, elderly facilities and schools, etc, would increase, the capital works programme will continue to expand and the Capital Account is projected to experience successive years of deficit in the medium term.

7.63 Looking ahead, the Working Group considers it prudent to reinstate a budgetary target for containing operating expenditure within 90% of operating revenue and would so **recommend**. The 10% buffer, if exists, may either be transferred to meet potential shortfalls in the Capital Account or be retained as reserve.

Capital expenditure and loan financing

7.64 The former guideline on capital expenditure stipulated that at least 20% of capital expenditure should be met by capital revenue and another 60% at least by recurrent surpluses. In case a shortfall remains, the 1976-77 Budget Speech stated –

"To the extent that there is an uncovered deficit on capital account, after allowing for capital revenue and the surplus available on recurrent account, the use of loan finance is legitimate, provided debt servicing charges – interest and amortization – do not, at any time, exceed interest earned on our fiscal reserves."(Footnote to paragraph 6 of the Speech)

7.65 As shown in *Chart 7.6* above, the Capital Account has been running surpluses in recent years. This means that capital revenue has been more than enough to cover for capital expenditure and it was not necessary to seek transfers from the Operating Account or to consider loan financing. That said, pressure for capital expenditure is building up. The Medium Range Forecast also forecast a deficit in the Capital Account from 2014-15 to 2018-19. It would be prudent to consider whether to allow loan financing to meet shortfalls in the Capital Account and if so, whether a limit or pre-conditions should be imposed.

7.66 With fiscal reserves running close to $750 billion, it would not seem necessary or prudent to seek to borrow. With economies rushing to impose "debt brakes" to mend their rather sorry state of public finance, it also seems counter-intuitive for Hong Kong to head down the slippery slope of "debt financing".

7.67 The Working Group would not recommend loan financing as a means to meet requirements in the Operating Account. However, if a project-specific or short-term need arises in the Capital Account (as against the Operating Account), the Working Group **recommends** that loan financing be explored. But it should only be considered where the cost of such borrowing is lower than the expected earnings arising from the fiscal reserves otherwise drawn. In addition to the financial gain from the interest differential, loan financing could allow the Government more flexibility in the deployment of resources. That said, learning from "debt brakes" overseas, the debt level for the Government to finance the Capital Account should not exceed say 5% of nominal GDP which is sufficient to cover some 19 months of capital works expenditure; for 2014-15, the estimated cash flow requirements on capital works stands at 3.2% of GDP. The proposed 5% of nominal GDP cap on debt level only applies to project-based or short-term loan financing for the Capital Account. The Government may issue bonds which exceed the suggested level for other policy considerations, such as enhancing the debt market in Hong Kong.

7.68 As a fiscal discipline, the Working Group **recommends** that the Government should segregate and seek to balance the Operating and Capital Accounts separately. The fiscal reserves usually shown at the Consolidated Account level would be attributed to either the Operating or Capital Account. And while transfers from the Operating Account to the Capital Account would be allowed, transfers in the opposite direction should not, save for exceptional circumstances. The latter restriction is needed because it is not financially sustainable to use one-off capital gains to fund recurrent initiatives. The two accounts would still be consolidated and the flexibility for them to cover each other if really needed would still be there.

7.69 An illustration of the presentation of the Operating and Capital Accounts, showing their respective surplus/deficit for the year as well as cumulative balances, is shown at **Annex H**.

7.70 The effects of loan financing for the Capital Account have also been tested. As shown in the Medium Range Forecast under Appendix A of the 2014-15 Budget Speech, the Capital Account would be in deficit from 2015-16 to 2018-19 ranging from $28 billion to $38 billion per year. For illustration purpose, if the Government were to issue $30 billion bonds each year starting from 2015-16 to finance the capital account shortfall, there could be financial gain of some $3 billion up to 2018-19 per one percentage point interest rate differential between the projected investment return of the fiscal reserves and the borrowing costs.

Recommended Guidelines

7.71 In short, the Working Group recommends that the following guidelines be imposed –

(a) The Government should aim to achieve a balance in the **Consolidated Account**. If a surplus can be achieved, the margin can be saved up to cope with cyclical downturns and longer term needs.

(b) The **split between operating (including recurrent and non-recurrent) and capital expenditure** should be targeted at 70-80:20-30. Recurrent expenditure tends to be inelastic and would be more difficult to trim in economic downturns. Thus, the financial implications of new policies with recurrent cost obligations should be carefully assessed.

(c) **Operating expenditure should not exceed 90% of operating revenue**. Surpluses from the Operating Account may help meet shortfalls in the Capital Account or may be retained as reserve.

(d) **The Capital Account should be segregated from the Operating Account and should strive to achieve a balance**. This would mean that capital expenditure, primarily expenditure on capital works, should stay within the limits of the capital revenue, primarily revenue from land disposals or lease modifications, etc, if not on a yearly basis, at least over the Medium Range Forecast period (i.e. a five-year period). Surpluses from the Capital Account, typically one-off in nature, should **not** be used to fund recurrent initiatives under the Operating Account. Shortfalls in the Capital Account should be met by surpluses from the Operating Account, fiscal reserves or through financing means.

(e) **Loan financing** may be considered for meeting project-based or short-term shortfalls in the Capital Account (as against the Operating Account). Loan financing should only be considered on the condition that the cost of borrowing is not higher than the expected earnings on the fiscal reserves otherwise drawn down, and that the debt level of the Government to finance the Capital Account does not exceed say 5% of nominal GDP. The proposed cap applies to project-based or short-term loan financing for the Capital Account. The Government may issue bonds which exceed the suggested level for other policy considerations, such as enhancing the debt market in Hong Kong. The Government may have other options like identifying assets for securitisation or asset disposal to raise one-off funding for one-off initiatives.

(E) Making clear what fiscal reserves cover

7.72 Fiscal reserves represent the cash balance for the Government. The reserves is estimated to be $745.9 billion at 31 March 2014, broken down as follows –

	$m
General Revenue Account	394,241
Funds with designated uses	131,957
Capital Works Reserve Fund	78,679
Capital Investment Fund	1,992
Civil Service Pension Reserve Fund	27,029
Disaster Relief Fund	29
Innovation and Technology Fund	1,801
Loan Fund	1,357
Lotteries Fund	21,070
Land Fund	219,730
Total	745,928

7.73 Of the $745.9 billion estimated fiscal reserves as at end March 2014, only the portion held in the General Revenue Account (about $394 billion) is for meeting the day-to-day cash flow requirements of the Government; the balance held in the Land Fund (about $220 billion) has **no authorised use**; and the balances held in various Funds set up by Resolutions of the Legislative Council (about $132 billion) **have their respective designated use**. For instance, the fund balance in the CWRF is designated for capital works, major systems and equipment; that in the Innovation and Technology Fund is committed to projects to promote innovation and technology; and that in the Loan Fund is for approved loans, etc.

7.74 For a more detailed explanation of the nature of fiscal reserves, the Working Group **recommends** making clear that –

(a) only the part of the reserves held in the General Revenue Account (about $394 billion) is for meeting the day-to-day cash flow requirements of policy bureaux and government departments in the delivery of public services;

(b) the balance held in the Land Fund (about $220 billion) has no authorised use. Approval to draw down on Land Fund has to be sought from the Legislative Council. If a savings scheme is to be introduced, the balance in the Land Fund can be deemed an initial endowment. Such a proposed Future Fund should be segregated from the fiscal reserves; and

(c) the balances held in seven Funds (other than the Land Fund) (about $132 billion) have their respective designated use in accordance with the Resolutions for setting up the Funds.

7.75 With a better understanding of the fiscal reserves, our community should have a more objective and clearer idea of our fiscal position when considering new policy initiatives.

(F) Stepping up the management of the Government's assets

7.76 The Government's asset portfolio includes investments in government business enterprises such as MTR Corporation Limited, Hong Kong Airport Authority, Hongkong International Theme Parks Limited, etc. and fixed assets such as toll tunnels and government buildings.

7.77 The main purpose of past investment made by the Government should aim to provide a worthwhile public service or to meet an important policy objective and at the same time be capable of generating a reasonable rate of return to the Government. Currently, nearly all the Government invested companies, corporations and public bodies are primarily serving a public purpose and operating under heavy policy requirements.

7.78 In anticipation of the hefty requirements in healthcare spending, capital works, pension liabilities etc., the Working Group **recommends** that the Government should manage its asset portfolio more proactively, and using the financial return to help reduce the fiscal pressures in the coming decades.

Disposal or securitisation of assets

7.79 In normal circumstances, the Government has to maintain its level of ownership in companies, corporations and public bodies either for policy or other reasons, and will not realize the value of the investment through asset sale or divestment in the market. Nonetheless, in face of fiscal pressures in the long run, sale or divestment of government assets including equity investments could be considered if one-off capital revenue is required to help reduce budgetary deficit. Another means that could be considered for easing fiscal pressure is securitisation of government assets. An example is the issuance of $6 billion's worth of Toll Revenue Bonds by the Government in 2004 which securitised the future revenue to be generated from government toll tunnels and bridges.

7.80 The extent that fiscal pressure may be eased through asset disposal or securitsation is subject to factors such as the market conditions and the quantum of the asset disposal, etc. In the selection of assets for sale, divestment or securitisation, the Government has to take into account the following considerations –

(a) whether the disposal or securitisation will result in the Government not being able to deliver the public purpose and mission. Possible examples include essential strategic infrastructure which the Government needs to maintain effective policy control on operation and development;

(b) whether the asset is generating a recurrent revenue, say in the form of dividend, to the Government. The Government should ensure that the upfront capital revenue to be received from the disposal should truly reflect the underlying asset value taking into account the recurrent revenue to be forgone;

(c) for the asset disposal option, whether Government ownership of the asset is essential and whether it is suitable for the assets to be operated by the market. Preference should be given to those assets which will bring higher efficiency and generate a higher return if owned by the private vs public sector; and

(d) impact on the community and the market as well as public reaction and acceptance.

7.81 In view of the long-term fiscal situation, the Working Group **recommends** that the Government keep in view the need for disposal or securitisation of government assets from time to time, bearing in mind the above factors. If need be, the Government should engage consultants to advise on the strategy for the holding or disposal of assets. The Working Group also **recommends** that the Government should ensure that the government business enterprises are managed and operated efficiently and cost-effectively.

7.82 For illustration purpose, the Working Group notes that under the Base Case No Service Enhancement Scenario, structural deficits would surface in 2029-30 and the total deficits for the initial two years would be around $30 billion. If the Government were to seek to cover these shortfalls by disposing its assets, some $30 billion asset portfolio would need to be identified for the purpose.

7.83 It should also be stressed that the one-off revenue from asset disposal could not resolve a structural deficit problem. It can only serve as one of the alternatives to tide over short-term financial difficulties.

(G) Sustaining the financial health of the Housing Authority

7.84 The Housing Authority (HA) has been operating with consolidated surplus which stood at $5.8 billion for the year 2012-13. With operating revenue from rental income from public rental housing units and commercial properties, proceeds from sales of Home Ownership Scheme (HOS) flats and alienation premium, and annual return from its investment portfolio, the HA maintained a cash and investment balance of $69.2 billion as at end March 2013. However, it will need substantial resources in the coming 10 to 30 years to fulfill its flats production target. According to its projection with assumption of a 5% biennial Public Rental Housing rent increase, the HA would have projected funding shortfall by 2019-20 and would run into operating deficit by 2023-24. A total funding shortfall of up to $490 billion could surface within the projection period. This has yet to take into account the new commitment on the production of 3,000 extra HOS units every year, offered in the 2014 Policy Address. The Working Group **recommends** that the Government should negotiate with the Housing Authority with a view to reducing the budgetary pressure on government finances in the long run.

7.85 The HA's original capital came from the Government. The HA has to comply with the statutory requirement under Section 4(4) of the Housing Ordinance (Cap.283) that " *[t]he policy of the Authority shall be directed to ensuring that the revenue accruing to it from its estates shall be sufficient to meet its recurrent expenditure on its estates.*" Following the enactment of the Housing (Amendment) Ordinance 1988, the Financial Arrangements between the Government and the HA came into effect on 1 April 1988. A Supplemental Agreement to the 1988 Financial Arrangements was effective from 1 October 1994. According to the Recitals of the Supplemental Agreement, "*[s]ubject to need and affordability remaining the guiding principles in the provision of, and charging for, public housing, Government will continue to support the public housing*

programme with finance to the Authority where necessary and to subsidize public housing with the provision of land on concessionary terms".

7.86 In accordance with the Financial Arrangements, formed land is provided by the Government and in return, the HA pays back in the following manner –

(a) for public rental housing, no payment on land cost is required;

(b) for commercial and non-domestic facilities, land cost is also not required but the HA pays 50% of the overall surplus from the operation of commercial and non-domestic facilities to the Government; and

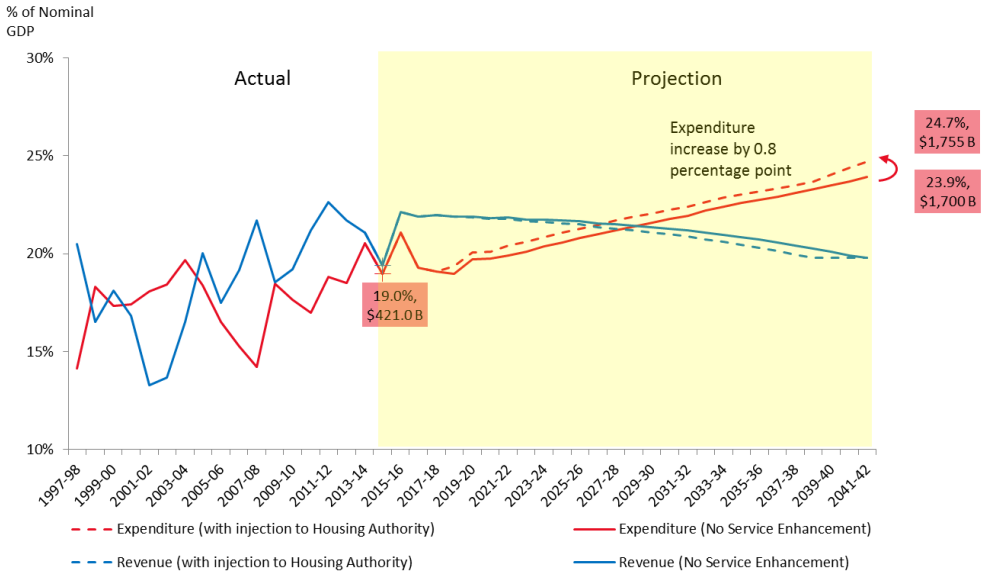
(c) for HOS, the HA pays 35% of the development cost of HOS flats sold as land costs to the Government.

7.87 As the Government would be under tremendous fiscal pressure within a decade or two, the Working Group believes that the Government should review with the HA its business model so as to meet its statutory requirement to make ends meet on a recurrent basis. It would also be prudent for the HA to consider funding options other than direct government injection. These may include reviewing the mix of public rental housing units and HOS units, HA loan financing, securitisation of HA assets and revenue enhancements across-the-board. The Working Group appreciates that these are not easy options.

7.88 The projections presented in Chapter 5 have not included the possible funding support required for the Housing Authority.

7.89 For illustration purpose, if the Housing Authority's funding shortfalls of $490 billion, as projected under the assumption of a 5% biennial Public Rental Housing rent increase, were deemed government obligations, then government expenditure by 2041-42 could increase by 0.8 percentage point, from 23.9% under the Base Case No Service Enhancement Scenario to 24.7% of nominal GDP (*Chart 7.7*). The surface of structural deficit and the depletion of the fiscal reserves could be both advanced by three years.

Chart 7.7 – Projection on revenue and expenditure



Other observations

7.90 **Exchange Fund.** As at end-March 2013, the gross assets of the Exchange Fund stood at $2,886.1 billion and the gross liabilities $2,258 billion, leaving $628.1 billion as net assets (roughly 30% of GDP). The gross assets include $1,342.9 billion assets in US dollar for backing the Monetary Base, $745.9 billion placements by the Government's fiscal reserves and $221.4 billion placements by banks and other bodies. These assets are not to be confused or double-counted with the part of the fiscal reserves which the Government has deposited with the Exchange Fund in exchange for investment returns.

7.91 With structural deficits looming, there is pressure for the Government to consider drawing on part of the **net assets** of the Exchange Fund, or at least the **investment returns** from these net assets, to fund government needs. Given the volatility of the economy and the statutory role of the Exchange Fund, it would not seem prudent for the Financial Secretary to seek to draw down on the Exchange Fund at this stage to help overcome a budgetary problem of a structural nature. As with the fiscal reserves, the net assets of the Exchange Fund are one-off in nature; once drawn, the principal left to generate future investment returns would be diminished. Compared with the scale of the structural deficit problem, which could reach as much as 22% of nominal GDP under the Service Enhancement at Historical Trend Scenario in 2041-42, the net assets of the Exchange Fund (currently standing at about 30% of nominal GDP) would pale into insignificance. As a small and open economy with no natural resource, the net assets of the Exchange Fund are the key defence for Hong Kong in times of crisis. On balance, the Working Group considers it more prudent to keep the Exchange Fund intact and segregated from the fiscal reserves of the Government. Regular draw downs from the net asset of the Exchange Fund or from its investment returns would not be a prudent or sustainable solution to the structural deficit problem.

7.92 **Public Private Partnership.** The Working Group appreciates that the scale of the structural deficit problem is enormous and the problem is too big for the Government alone to resolve. In considering options ahead, the Working Group sees a need for the Government to consider options for partnerships with the private sector, as in the case of public private partnership in capital projects and healthcare reform.

7.93 **Staggering revenue from land sales.** The Working Group has also considered options to smooth out or stabilise the **revenue stream from land sales**, like allowing land premium and other lease modification receipts to be spread out over a period. Whilst this could stabilise revenue streams over a specified period, there is no reason why Government should forego and defer receipt of its capital revenues and lose out on investment returns.

7.94 **Establishing Civil Service Pension Stabilisation Fund**. The Working Group has also considered the setting up of a **Civil Service Pension Stabilisation Fund** to smooth out the expenditure hike on pension liabilities, and to relieve the future taxpaying generation from having to bear the full brunt of these statutory commitments. If the idea of a Future Fund can be agreed, the need to establish a savings scheme dedicated to pension commitments will not be necessary.

Conclusion

7.95 In summary, the Working Group recommends –

(a) containing expenditure growth;

(b) preserving, stabilising and broadening the revenue base;

(c) saving for the future;

(d) segregating and balancing the Operating and Capital Accounts;

(e) making clear what fiscal reserves cover;

(f) stepping up the management of the Government's assets; and

(g) sustaining the financial health of the Housing Authority.

7.96 As Hong Kong gears up for tougher times ahead, the Government and the community must pay heed to the pressures on fiscal sustainability and must act in a responsible manner. The Working Group sees a need for fiscal discipline to be tightened. It does **not** mean stalling all new and worthy initiatives – because the economy is still projected to grow, albeit at a slower pace. But it does require greater regard to long-term affordability, and readiness to accept offsetting savings. It requires collective effort to preserve, stabilise and where possible broaden the revenue base, and to safeguard the cost-recovery principle. It also requires advance planning, so that the Government can start saving for the future. Community expectations will need to be managed.

7.97 The Working Group would not want to paint an overly gloomy fiscal outlook for Hong Kong. But there can be no denial that Hong Kong can ill afford to continue increasing spending beyond the pace of economic growth and revenue. We have to act and behave as a mature economy. The Government and the community would need to acknowledge the problem ahead and adjust. If the Government takes serious and early action to realign the growth of expenditure with that of government revenue and of the economy, the Working Group is reasonably optimistic that the structural gap in public finances can be narrowed and the onset of a structural deficit deferred. Fiscal consolidation would go a long way to preserving the longer term stability, competitiveness and creditworthiness of Hong Kong as an international financial centre.

Annex A

Working Group on Long-Term Fiscal Planning

Membership

Chairperson

Ms Elizabeth Tse	Permanent Secretary for Financial Services and the Treasury (Treasury)

Non-official Members

Professor Liu Pak-wai	Research Professor and Emeritus Professor of Economics The Chinese University of Hong Kong
Professor Francis Lui	Head and Professor Department of Economics School of Business and Management The Hong Kong University of Science and Technology
Mr Mark Saunders	Managing Director Asia Pacific Insurance Sector Towers Watson
Mrs Jennifer Wong	Partner KPMG
Mr Marcellus Wong	Senior Adviser PricewaterhouseCoopers

Ex-officio Members

Mrs Lesley Wong (up to 20 January 2014)	Director of Accounting Services
Mr Martin Siu (from 21 January 2014)	Director of Accounting Services
Mrs Helen Chan	Government Economist
Ms Esther Leung	Deputy Secretary for Financial Services and the Treasury (Treasury)1

Secretary

Mr Charlix Wong	Principal Assistant Secretary for Financial Services and the Treasury (Treasury)(H)

Annex B

Technical Considerations Underlying the Key Macroeconomic Assumptions under the Base Case

1. The macroeconomic assumptions for real GDP, GDP deflator, and underlying CCPI 2014 – 2018 follow those in the 2014-15 Budget. For 2014 in particular, the mid-points of the range forecasts for real GDP and nominal GDP growth are used.

GDP growth assumptions beyond 2018

Labour force assumptions

2. The labour force assumptions are sourced from the latest projections released by Census and Statistics Department (C&SD) in September 2013. For the purpose of projecting overall economic growth, the labour force projections in *Charts 2.5* and *2.6* have been adjusted to include the projected number of foreign domestic helpers[1].

Labour productivity growth assumptions

3. With the labour force stagnating after 2018, the key driver of Hong Kong's economic growth in the future would necessarily come from a sustained increase in output from each worker, i.e. the labour productivity growth.

4. Adopting the growth accounting framework[2], labour productivity growth can be attributed to two factors: (a) capital intensity, i.e.

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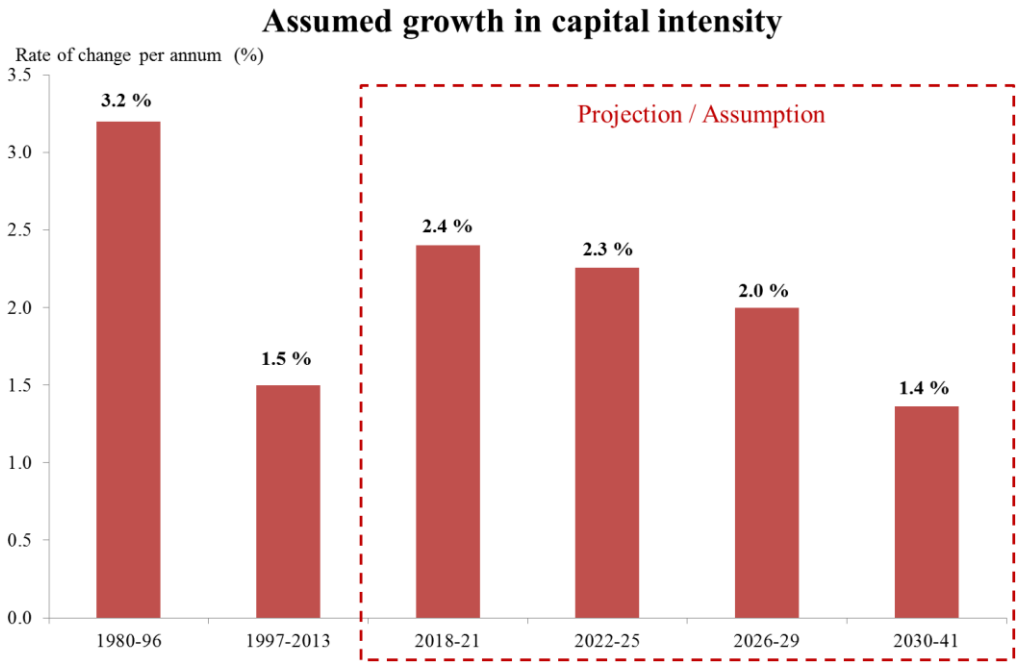
1 From the Hong Kong Population Projections, published by the Census and Statistics Department.

2 The growth accounting framework is originated from the Solow growth model. A notable example of applying this framework on the East Asian economies is in Alwyn Young, The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience, Quarterly Journal of Economics 110:641-80 (1995).

the size of capital stock relative to the labour force in the overall economy; and (b) total factor productivity (TFP).

5. Capital intensity, while showing a slower growth in 1997 – 2013 as compared with 1980 – 1996, would possibly pick up in the late 2010s (*Chart B.1*), mainly on account of the expected hectic investment under the on-going major infrastructure programme. The current relatively tight labour market conditions would also induce more labour-saving investments. Following a relatively faster intensification in the late 2010s and early 2020s, there would be a gradual deceleration to an average that is broadly in line with that seen in 1997 – 2013.

Chart B.1 – Capital intensity – past and projected trends

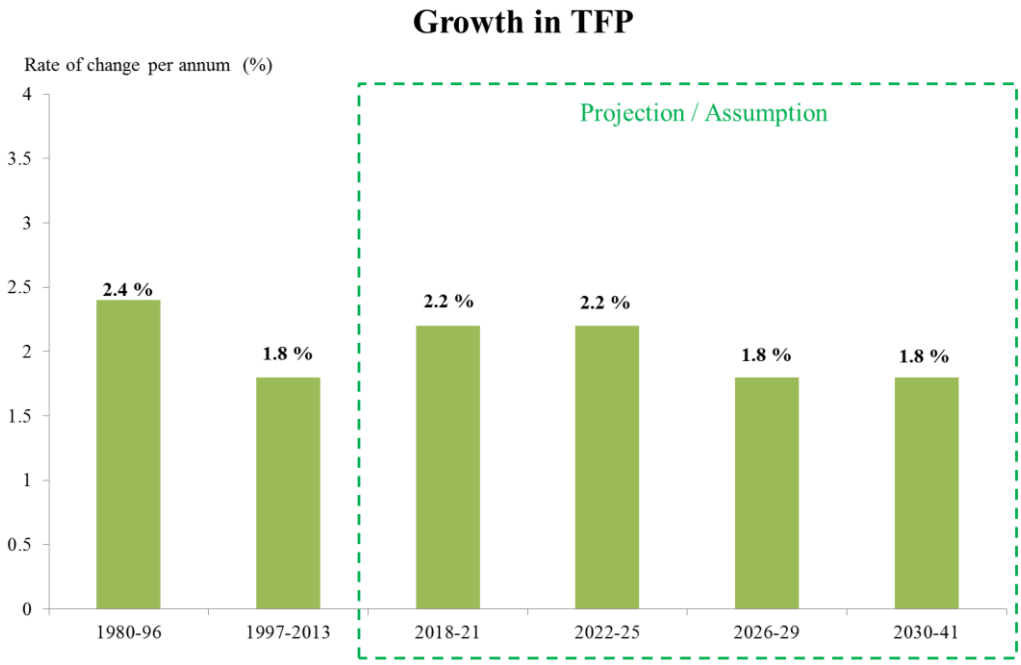


Note : Historical figures on capital intensity are based on Government's in-house estimates.

6. TFP growth is expected to sustain in the years to come, at a pace broadly in line with those seen in the past three decades (*Chart B.2*). First, education upgrading and experience accumulation of our workforce are two instrumental factors conducive to continued productivity upgrading for some years to come. Secondly, the economy will continue its structural shift towards higher value-added, more knowledge-based activities. Lastly, the China

factor would also mean considerable development opportunities for our economy, as Hong Kong continues to re-position itself to gear in with Mainland's development needs at different stages of its reform. All these factors should render some boost to labour productivity growth in the years to come.

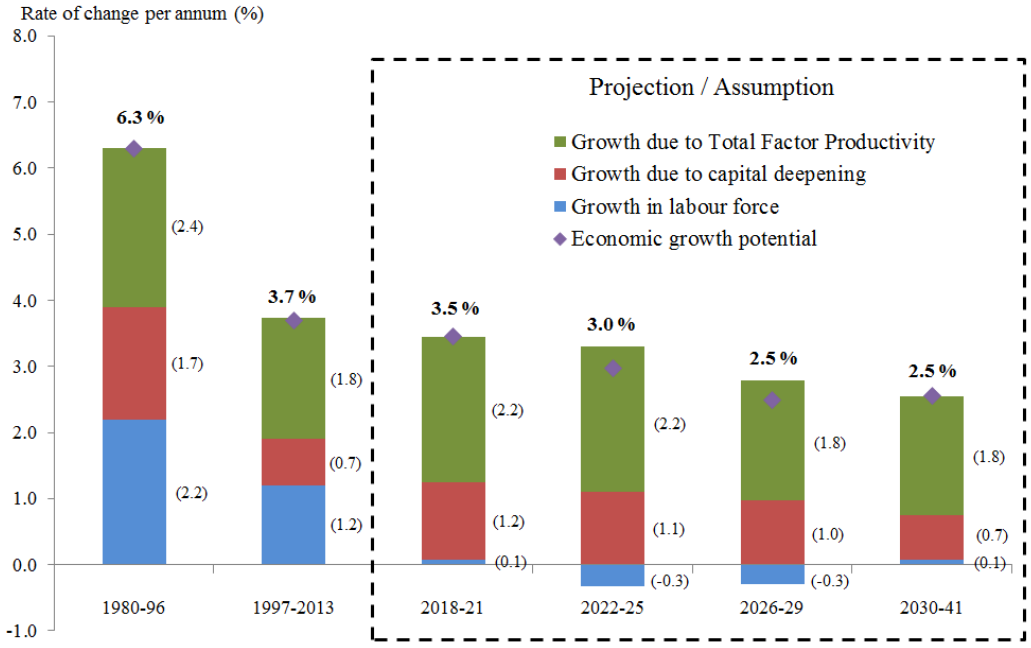
Chart B.2 – TFP growth expected to sustain at a high level in the years to come



Note: TFP figures for 1980-2013 are Government's in-house estimates derived under the standard growth accounting framework.

7. Yet even with capital intensification and sustained TFP growth, Hong Kong's economic growth potential still looks set to slow as the labour force starts to stagnate after 2018. *Chart B.3* shows the historical composition of economic growth in the past three decades, as well as the interactions of the three factors (i.e. labour force growth, capital intensification, TFP growth) in driving Hong Kong's GDP growth potential in the longer term.

Chart B.3 – Economic growth potential looks set to decelerate over the long term as labour force starts to stagnate



Notes : ( ) Contribution to the economic growth in percentage point.

Economic growth figures here refer to the production capacity of the economy (i.e. from the supply side perspective), when labour force is fully employed and other factors of production are deployed at their normal intensity of usage. As such, they are slightly different from the actual GDP growth rates which are affected also by the demand side factors. The historical figures are in-house estimates by the Government.

Inflation as measured by CCPI and GDP deflator[3]

Historical trends of CCPI and GDP deflator

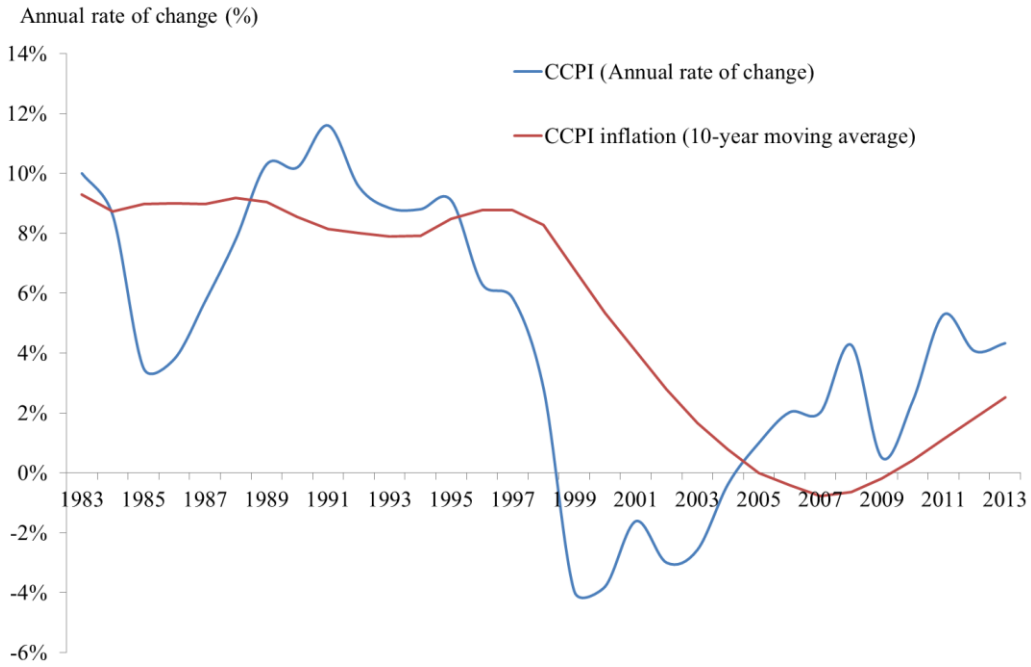
8. The trend rates of inflation in the past 5 years (2009 – 2013), past 10 years (2004 – 2013), past 20 years (1994 – 2013) and past 30 years (1984 – 2013) are set out in *Table B.1*. There had been a sustained period of high inflation during most of the 1980s and the early 1990s (See *Chart B.4*), followed by an exceptional and prolonged period of deflation from late 1998 to mid-2004. Yet in general, inflation has also trended down over the past three decades - thanks to the forces of globalization and increasing integration with the Mainland economy.

Table B.1 – Summary of the historical trend movement of CCPI and GDP deflator (Annual rate of change)

Period	CCPI	GDP deflator
2009 – 2013 (5 years)	3.3% p.a.	1.7% p.a.
2004 – 2013 (10 years)	2.5% p.a.	0.9% p.a.
1994 – 2013 (20 years)	2.1% p.a.	0.6% p.a.
1984 – 2013 (30 years)	4.0% p.a.	3.1% p.a.

[3] The GDP deflator measures overall price change in the economy, whereas the CCPI measures inflation in the consumer domain.

Chart B.4 – CCPI inflation trends have shown big swings over time



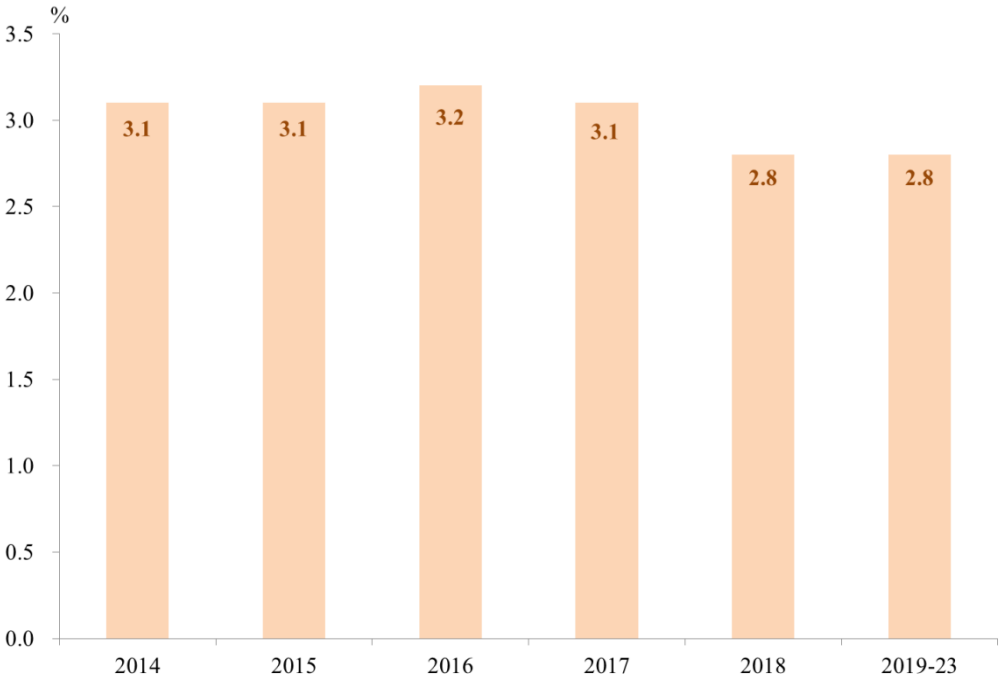
Mainland factor under the force of globalization

9. The trend of globalization, which has tended to equalize factor prices across countries that have participated in the process, is commonly considered as an important force contributing to the fall in inflation rates in the developed economies since the 1980s. The Mainland's development as the global manufacturing powerhouse has helped to contain the price increases in manufactured products over the past two decades or so, thereby contributing to lower global inflation.

10. Given the proximity of the Mainland, the implications of Mainland's rise as a global manufacturing centre have been particularly prominent on Hong Kong. The generally low increase in import prices from the Mainland during the past 30 years, at a trend rate of around 1.5% per annum, supports the idea that the integration of the Mainland into the global economy has been a contributory force in dampening Hong Kong's inflation.

11. Going forward, the disinflationary effect of the Mainland on global inflation is likely to sustain in the future, though its incremental impact might wane somewhat over time under a scenario of gradually appreciating RMB, as well as rising wages and land costs in the Mainland. As *Chart B.5* indicates, analysts in the private sector and international organisations generally believe inflation in the Mainland to remain tame in the longer term. If so, it should help keep Hong Kong's inflation at a moderate level, as the Hong Kong economy increasingly moves in sync with the Mainland economy.

Chart B.5 – Analysts generally expect the Mainland's consumer price inflation to remain tame in the longer term



Source: Asia Pacific Consensus Forecasts (October 2013).

12. Moreover, with more and more underdeveloped economies integrating into the global economy under the trend of globalization, it is possible that the rise of other emerging markets would also have a continuing dampening effect on global inflation, and hence Hong Kong's inflation.

Monetary policies of major central banks

13. The abundance of global liquidity at present, due to the quantitative easing pursued by major central banks in response to the global financial crisis of 2008, has increased the uncertainty about the global inflation outlook for the medium term. Yet with their eventual exit from their unconventional monetary policies, it is conceivable that the major central banks would continue to accord great importance to the policy objective of maintaining price stability. For instance, both the US Federal Reserve and the European Central Bank have set the inflation target at around 2%. The anti-inflation practice of the major central banks, including the People's Bank of China, will likely keep global inflation in check over the longer term to the benefit of Hong Kong's inflation situation.

Inflation expectations and views of private sector analysts

14. Information on inflation expectations can also be used to examine the reasonableness of the price assumptions for this exercise. In particular, the inflation expectation information (on CPI inflation) available in the US should be a useful reference, considering that the Hong Kong dollar is pegged to the US dollar under the Linked Exchange Rate System and the US is a dominant economy in the world. *Table B.2* sets out the inflation expectations (also in the form of the expected annual rate of change in the consumer price index) in the US up to the horizon of 30 years, as worked out by the US Federal Reserve through the market data on US Treasuries, inflation swaps, etc.[4] It shows that the inflation rate in the US is expected to climb up gradually over time from the recent relatively low levels to still-relatively moderate levels. This is consistent with the view that global inflation would continue to remain moderate over time.

[4] *Cleveland Fed Estimates of Inflation Expectations*, the Federal Reserve Bank of Cleveland (See http://www.clevelandfed.org/research/data/inflation_expectations/)

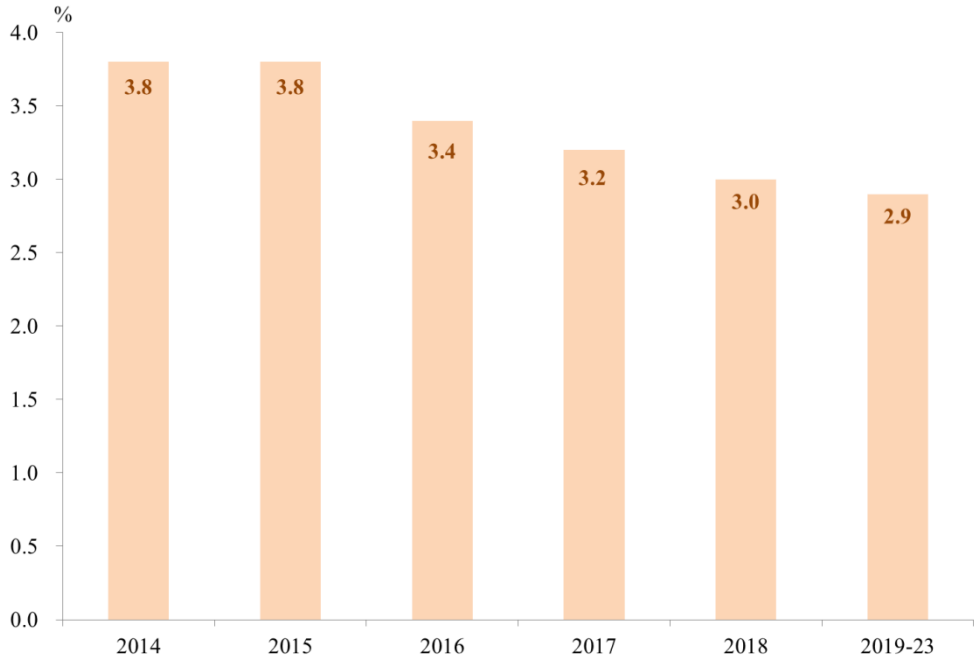
Table B.2 – Longer-term inflation expectations in the US as in November 2013

Period	Expected annual increase in US's CPI
1 – 5 years ahead	1.6% p.a.
6 – 10 years ahead	1.9% p.a.
11 – 20 years ahead	2.2% p.a.
21 – 30 years ahead	2.4% p.a.

Source : Federal Reserve Bank of Cleveland.

15. As another useful reference, analysts in the private sector and international organisations also generally expect Hong Kong's consumer price inflation to move lower, settling at an average of around 3% per annum beyond the medium term (*Chart B.6*).

Chart B.6 – Analysts expect HK's consumer price inflation to edge lower to around 3% per annum beyond the medium term



Source : Asia Pacific Consensus Forecasts (October 2013).

Assumptions on CCPI and GDP deflator under the Base Case

16. Having considered the above factors, the trend rate of increase in the underlying CCPI is assumed at 3% per annum beyond the medium term, after 3.7% in 2014 and 3.5% per annum in 2015 to 2018. The respective assumptions for the GDP deflator are 1% for 2014, followed by 2% per annum in 2015 to 2018, and 1.5% per annum from 2019 onwards.

Table B.3 – Summary of the assumptions on CCPI and GDP deflator

Period	**CCPI (Underlying)**	**GDP deflator**
2014[#]	3.7%	1%
2015 – 2018[@] (4 years)	3.5% p.a.	2% p.a.
2019 – 2021 (3 years)	3% p.a.	1.5% p.a.
2022 – 2025 (4 years)	3% p.a.	1.5% p.a.
2026 – 2041 (16 years)	3% p.a.	1.5% p.a.
2015 – 2041 (27 years)	**3.1% p.a.**	**1.6% p.a.**

Notes: [#] The figures for 2014 refer to the forecasts as announced on 26 February 2014 in the 2014-15 Budget Speech.

[@] These forecasts for the medium term follow the assumptions used in the 2014-15 Budget Speech.

The underlying SSAIP, unless otherwise specified, is assumed to be the same as that in the underlying CCPI. While SSAIP may deviate from CCPI in individual years, they co-move when viewed from a longer time horizon. For example, the 25-year average trend rates of change in the SSAIP and CCPI were 3.7% per annum and 3.6% per annum respectively.

Public sector construction output price (Public sector building and construction deflator)

17. The public sector building and construction deflator is assumed to go up by around 6% per annum in the five years from 2014 to 2018, followed by an average increase of around 5% per annum in 2019 to 2021. The average annual rates of increase in the deflator in the more distant years are assumed to converge to levels between the average increases of the deflator in the past 20 and 30 years (see *Table B.4*). The assumptions reflect that, while the average movements of the deflator in the past 10 years and 20 years have been dwarfed by a window of soft building and construction activities in 2005 – 2007 and the prolonged period of deflation across the Hong Kong economy in 1998 – 2004, the average movements of the deflator in the past 30 years were heavily affected by the surge in the deflator in the late 1980s and early 1990s amid the high inflation environment in the overall economy back then. Also, the upward pressures on construction costs are expected to recede somewhat in the more distant years in the future as the major infrastructure programme would pass its peak.

Table B.4 – Historical trend movements and assumptions on the public sector building and construction deflator (Annual rate of change)

Period	**Public sector building and construction deflator**
Historical movements	
2009 – 2013 (5 years)	4.5% p.a.
2004 – 2013 (10 years)	3.4% p.a.
1994 – 2013 (20 years)	3.2% p.a.
1984 – 2013 (30 years)	5.0% p.a.
Assumptions	
2014 – 2018 (5 years)	6% p.a.
2019 – 2021 (3 years)	5% p.a.
2022 – 2025 (4 years)	4.5% p.a.
2026 – 2029 (4 years)	4% p.a.
2030 – 2041 (12 years)	4% p.a.

Wage movements

18. The Government's civil service pay policy is to offer sufficient remuneration to attract, retain and motivate staff of suitable calibre to provide the public with an effective and efficient service; and such remuneration is to be regarded as fair by both civil servants and the public they serve by maintaining broad comparability between civil service and private sector pay.

19. *Table B.5* provides a comparison between the civil service pay adjustment under each of the three salaries bands and the nominal wage index. After netting out the cyclical ups and downs by making comparison over a long period of 15 to 30 years, it is observed that civil service pay adjustments are broadly commensurate with private sector wage rises. For the purpose of the current projections, unless other stated, **civil service pay adjustment is benchmarked against private sector wage movements**.

Table B.5 – Historical growth trends of civil service pay and nominal wage (Average annual rate of change)

Period (in fiscal year)	**Civil Service Pay** ***(a)***			**Nominal Wage ($year_{t-1}$)** ***(b)***	**Difference** ***(a) – (b)***		
	Upper	**Middle**	**Lower**		**Upper**	**Middle**	**Lower**
1999-2013 (15 years)	1.1% p.a.	1.3% p.a.	1.3% p.a.	1.5% p.a.	-0.4 ppt.	-0.2 ppt.	-0.2 ppt.
1994-2013 (20 years)	2.8% p.a.	3.0% p.a.	3.0% p.a.	3.0% p.a.	-0.2 ppt.	0.0 ppt.	0.0 ppt.
1989-2013 (25 years)	4.5% p.a.	4.8% p.a.	4.8% p.a.	4.7% p.a.	-0.2 ppt.	0.1 ppt.	0.1 ppt.
1984-2013 (30 years)	5.1% p.a.	5.4% p.a.	5.5% p.a.	5.2% p.a.	-0.1 ppt.	0.2 ppt.	0.3 ppt.

Private sector wages (Nominal wage index)

20. With the labour market expected to remain tight in the coming several years, **the nominal wage index is assumed to increase by around 5% per annum in 2014 – 2018**.

21. As for the years beyond 2018, the assumption on the nominal wage index is made by making reference to the long-run relationships between the nominal wage index and the CCPI. As shown in *Table B.6*, over a relatively long time horizon, the movements of real wages (i.e. nominal wage netting consumer price inflation) have been steady on average, at around 1% per annum. As such, under the Base Case, nominal wages are assumed to rise on average by 4% per annum for the years beyond 2018 (*See Table B.7*), implying a real wage increase of 1% per annum on top of the 3% trend CCPI inflation assumption.

Table B.6 – Historical trend rate of increase in the nominal wage index and CCPI (Annual rate of change, in fiscal year)

Period (in fiscal year)	**Nominal wage**	**CCPI**	**Real wage (Nominal wage over CCPI)**
1998 – 2012 (15 years)	1.5% p.a.	0.5% p.a.	1.0% p.a.
1993 – 2012 (20 years)	3.0% p.a.	2.2% p.a.	0.8% p.a.
1988 – 2012 (25 years)	4.7% p.a.	3.7% p.a.	1.0% p.a.
1983 – 2012 (30 years)	5.2% p.a.	4.1% p.a.	1.1% p.a.

Table B.7 – Comparison of the assumptions on nominal wages and the underlying CCPI under the Base Case (Annual rate of change)

Period	**Nominal wage**	**CCPI (Underlying)**	**Implied real wage (Nominal wage over CCPI)**
2014	5%	3.7%	1.3%
2015 – 2018 (4 years)	5% p.a.	3.5% p.a.	1.5% p.a.
2019 – 2021 (3 years)	4% p.a.	3% p.a.	1% p.a.
2022 – 2025 (4 years)	4% p.a.	3% p.a.	1% p.a.
2026 – 2029 (4 years)	4% p.a.	3% p.a.	1% p.a.
2030 – 2041 (12 years)	4% p.a.	3% p.a.	1% p.a.
2015 – 2041 (27 years)	**4.1% p.a.**	**3.1% p.a.**	**1% p.a.**

Annex C

Specifications of the Shock Case

Percentage point difference from the annual rates of change as proposed in the Base Case

Year T=	Real GDP	CCPI
1	-8 ppt	-6 ppt
2	-7 ppt	-6 ppt
3	-3 ppt	-4 ppt
4	-2 ppt	-2 ppt
5	-1 ppt	-1 ppt
6+	0 ppt	0 ppt

Notes : Year T refers to the year of incidence of the negative shock to growth. It is assumed, hypothetically, in 2015.

For simplicity in illustration, only the corresponding shocks to CCPI assumptions are shown here. Assumptions on other price indicators have also been adjusted accordingly.

Under the Shock Case, the economy will suffer a severe negative shock for five years, and then resume the growth track as in the Base Case.

Annex D

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-based[1] 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 level[2] 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.

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[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 constant[3].

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;

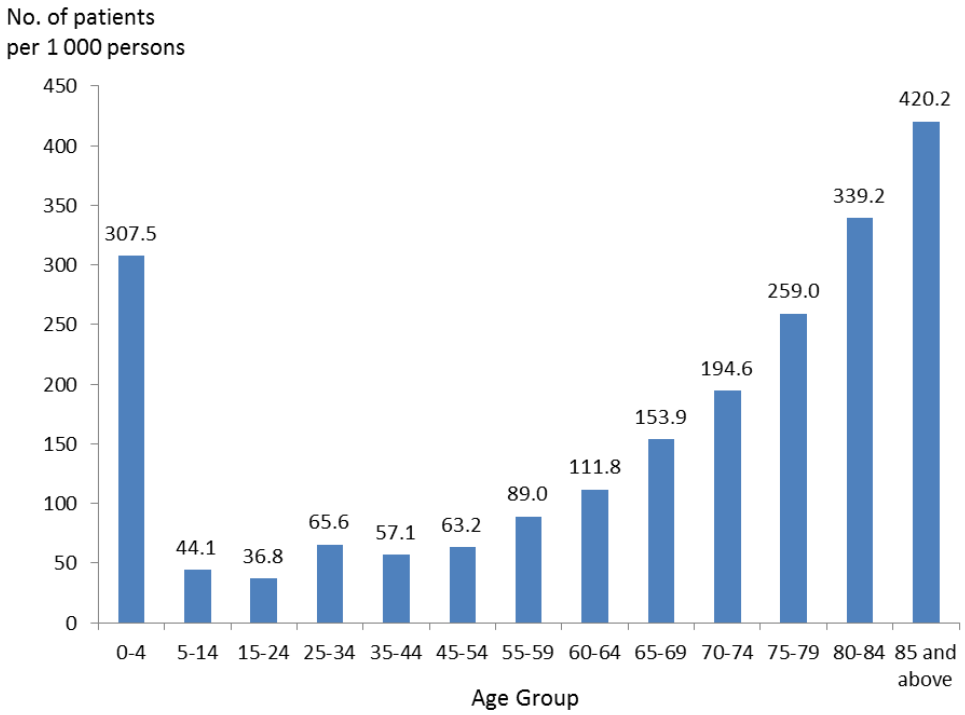
(b) 2007-08 to 2012-13 hospitalization rates for each age group;

(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 system[4]. 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 (CWRF) and the Lotteries Fund and major CWRF 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 million[5] 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.

Annex E

Econometric Modelling for Revenue Projections

1. An econometric modelling exercise has been undertaken to calibrate the quantitative relationship between the five major items of government revenue (namely profits tax, salaries tax, stamp duties, land premium and other incomes excluding investment income) and a host of economic variables, for the purpose of rendering a set of revenue projections based on the macroeconomic assumptions described in Chapter 2. This Annex sets out the technical details for the econometric modelling exercises.

Methodology and projection results

2. As historical experience shows, government revenue bears a close and positive relationship with the boom-bust cycle for the overall economy (for details, please see Chapter 4). The model specifications for the five revenue models are thus based on such priori reasoning, using nominal GDP growth and output gap [1] as the two key explanatory variables to estimate how each revenue item would be affected by macro-economic performance. For asset-market revenue items which are particularly volatile, namely land premium and stamp duties, dummy variables for the years 1997 and 2007 are included to delineate the exceptional swings because of the asset market exuberance in these two years.

[1] Output gap is a measure of the aggregate demand/supply balance, and hence is an indicator of the boom-bust cycle for the overall economy.

3. The estimation of the parameters is based on the OLS (Ordinary Least Squares) method, using data from the period 1991-92 to 2012-13[2]. In the empirical investigation process, other variables have also been tested to see if individual government revenue items are sensitive to changes in demographic profile, liquidity conditions (i.e. real interest rate) and consumer price inflation. The possible impact on revenue due to changes in government policy on land sales programme over the period 2002-2009 is also estimated in the form of a dummy variable. With different combinations of these various explanatory variables, over five hundreds of econometric models have been examined.

4. The reasonableness and robustness of these econometric models is assessed on a package of standard statistical criteria and tests, including the R-squared, t-test, Godfrey's serial correlation test, the in-sample fitness and out-of-sample forecasting performance, etc. Based on these selection criteria, the Working Group has adopted the following econometric models as the basis for long-term revenue projections (*Table E.1*).

[2] The Working Group has also examined the econometric models by using an extended sample period over 1982-83 and 2012-13. The results indicate that the extension of sample period would not help to improve the out-of-sample forecasting performance of the econometric models.

Table E.1 - Detailed estimation results and model diagnostics of the econometric models

Dependent variable: Ratio of the respective revenue items to NGDP		**Profits Tax**	**Salaries Tax**	**Stamp Duties**	**Land Premium**	**Other Income excluding Investment Income**
Estimation results:						
Sample period:		1991-92 - 2012-13				
	Intercept	**0.060 ***	**0.028 *****	**0.016****	**0.028 *****	**0.059 *****
Cyclicality	Nominal GDP growth	**0.053 *****	**0.015 ****	**0.023**	**0.117 ****	**0.019 ***
	Output gap	**0.152 *****	**0.018 @**	**0.043 @**	**0.099 *****	
Dummy	Dummy for property market exuberance in 1997				**0.011 *****	
	Dummy for land sales policy (2002-09)				**-0.010*****	
	Dummy for 2007 stock market rally			**0.009*****		
	AR(1)	**0.930*****	**0.812*****	**0.850 *****		**0.714 *****
	AR(2)				**0.561 *****	
Model diagnostics:						
R-Squared		**0.8134**	**0.7320**	**0.8299**	**0.8257**	**0.5858**
Adjusted R-Squared		**0.7822**	**0.6873**	**0.7898**	**0.7713**	**0.5423**
F-statistics (p-value)		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0002**
AIC		**-7.6766**	**-10.0693**	**-8.4035**	**-7.0361**	**-8.6045**
SIC		**-7.4783**	**-9.8709**	**-8.1555**	**-6.7386**	**-8.4557**
Godfrey's serial corr. test (p-value)		**0.2779**	**0.9269**	**0.2310**	**0.9790**	**0.6486**

Notes: @, *, ** and *** indicate statistical significance at 15%, 10%, 5% and 1% respectively.

Auto-regressive terms are included in the estimation to deal with the auto-correlation issues of the error terms, if needed.

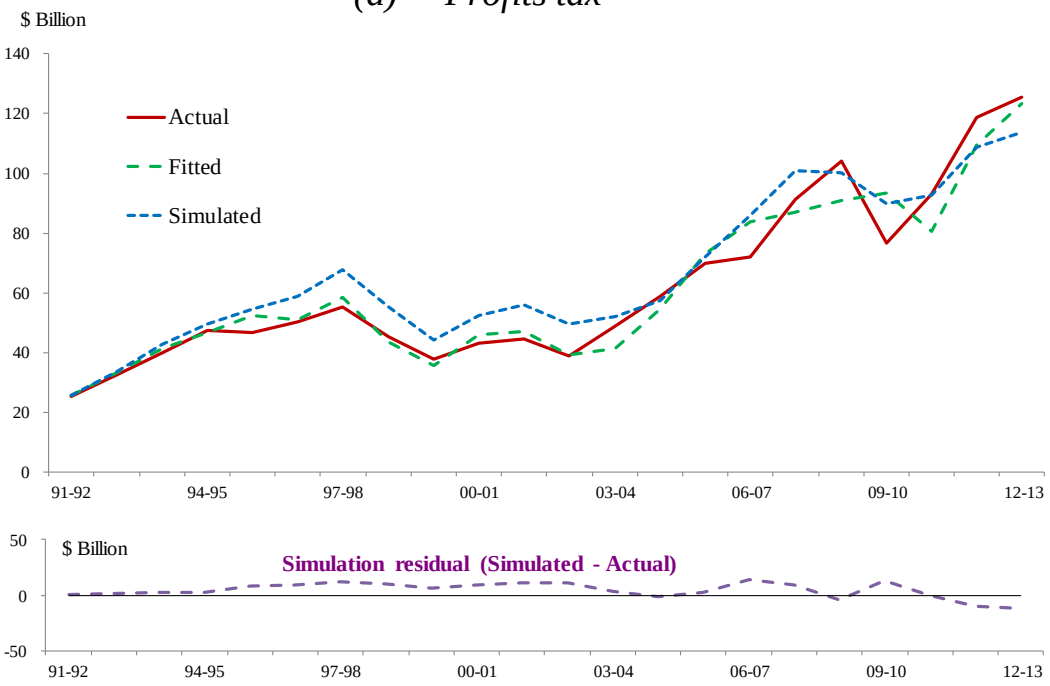
5. All the five adopted econometric models are found to explain the revenue items reasonably well with the signs of the explanatory variables all conforming with a priori reasoning. Specifically, the empirical estimates indicate that when nominal GDP growth accelerates and aggregate demand/supply balance tightens up during economic upswings, government revenue as ratio of nominal GDP would tend to increase; and vice versa. The estimated coefficients for the property market exuberance in 1997; the exceptionally buoyant stock market conditions in 2007; and the changes in land sales policy in 2002-09 are likewise consistent with priori reasoning.

6. The adjusted R-squared for the models of profits tax, salaries tax, stamp duties and land premium ranges (all expressed as ratio of nominal GDP) between high levels of around 0.7 and 0.8. The model for other incomes excluding investment income (as ratio of nominal GDP), being a summation of revenue items with diverse nature, also gives a relatively high adjusted R-squared of around 0.54. These suggest statistically high level of explanatory power for the five revenue models, as also graphically illustrated in the in-sample fitness in *Chart E.1*[3].

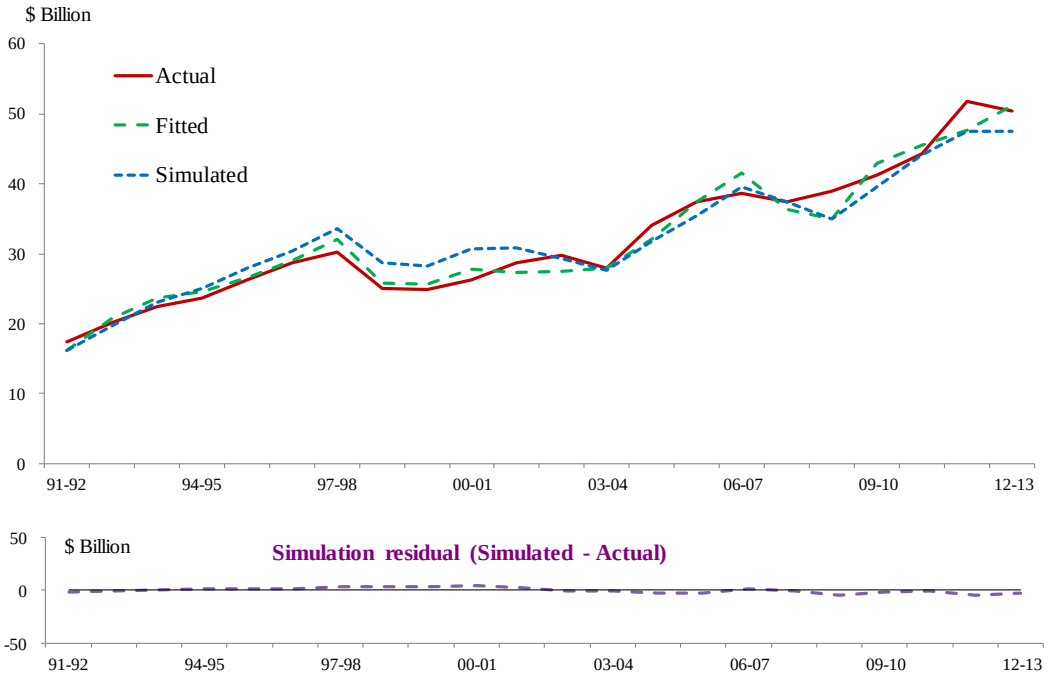
[3] The Working Group has also examined an aggregate approach of estimating the parameters for total revenue instead of estimating based on five separate equations pertaining to the major revenue items. The estimation results indicate that the out-of-sample forecasting performance under the aggregate approach is significantly worse as compared to the component approach based on five separate revenue models.

Chart E.1 - In-sample simulation of the selected models

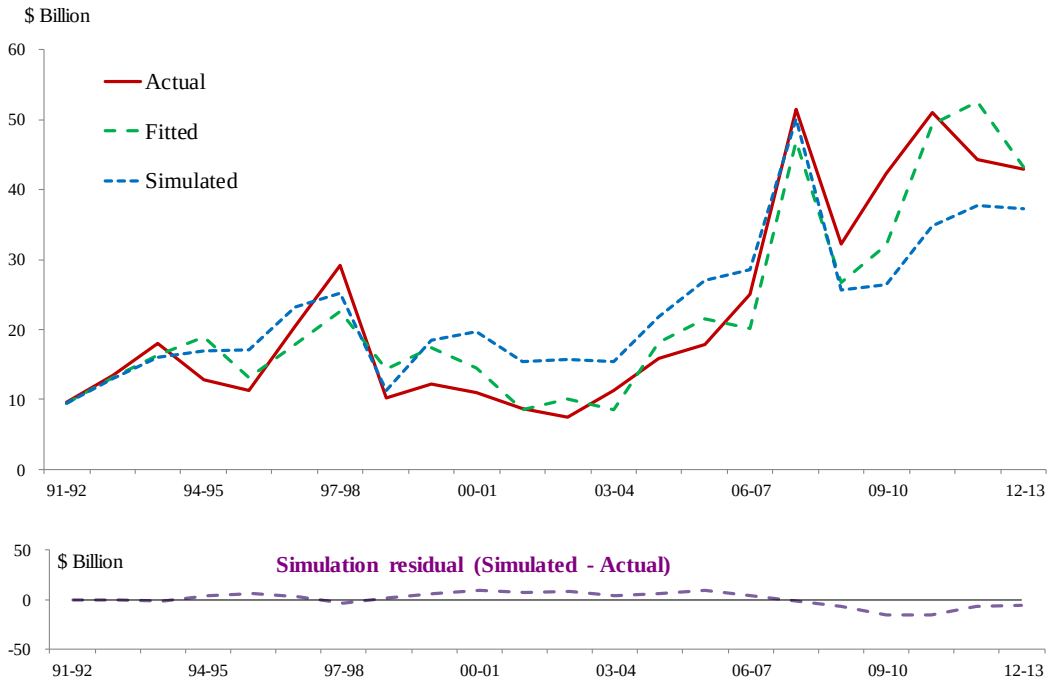
(a) Profits tax



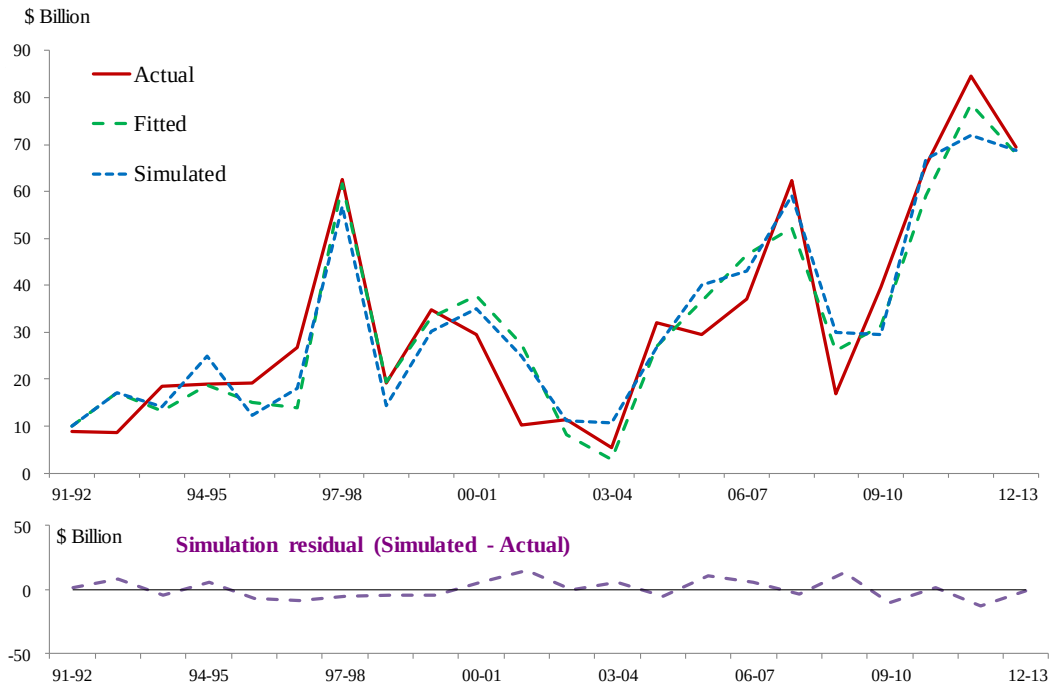
(b) Salaries tax



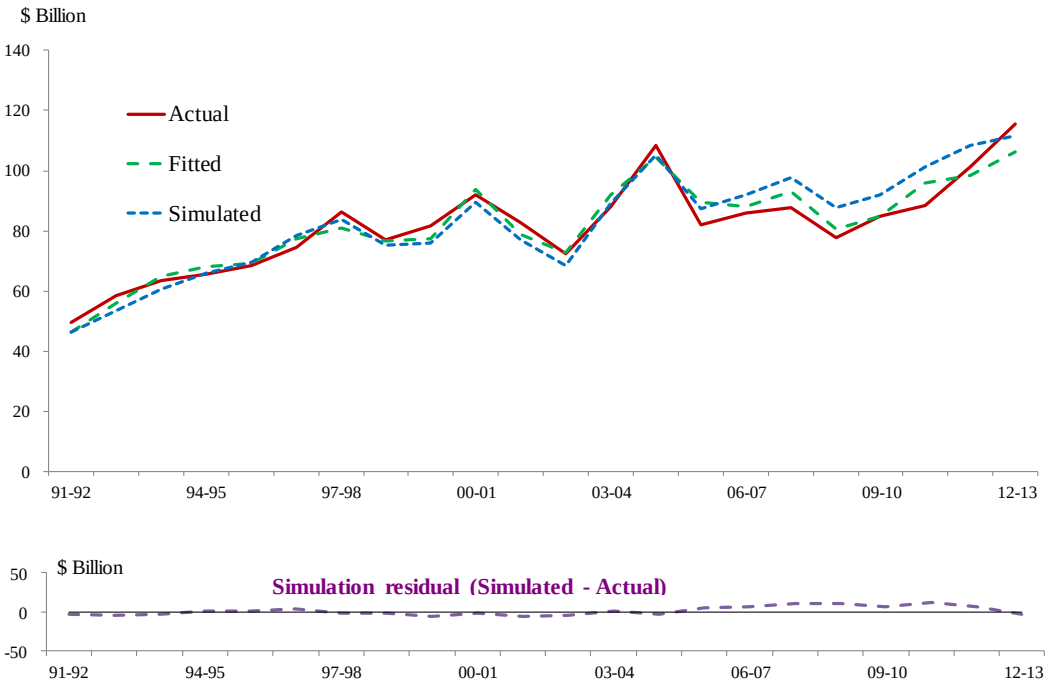
(c) Stamp duties



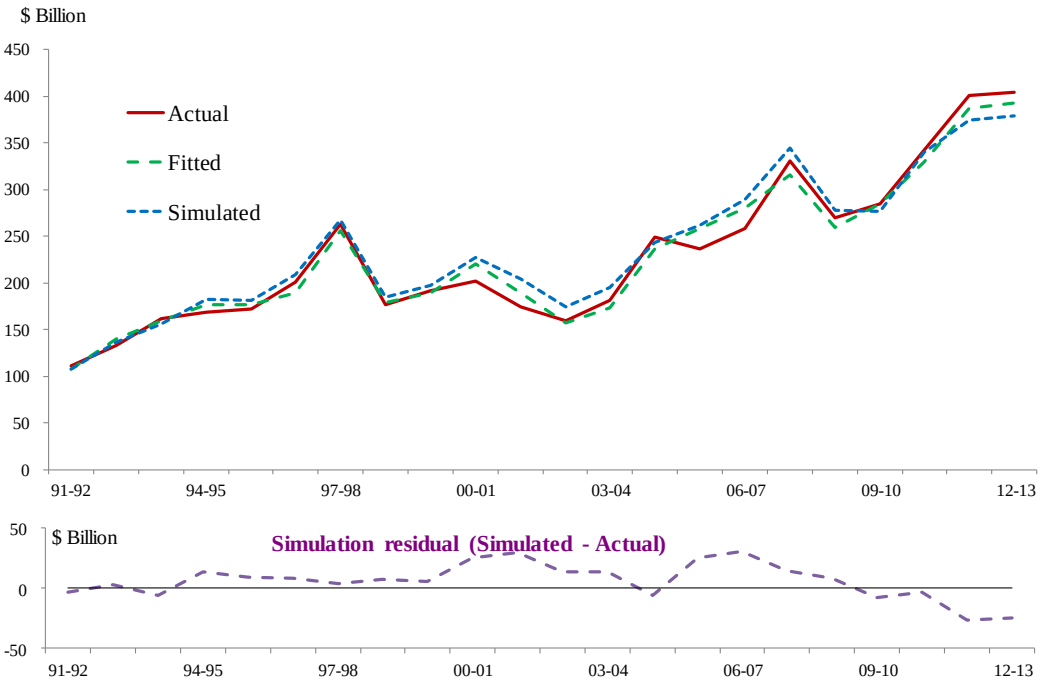
(d) Land premium



(e) Other incomes excluding investment income

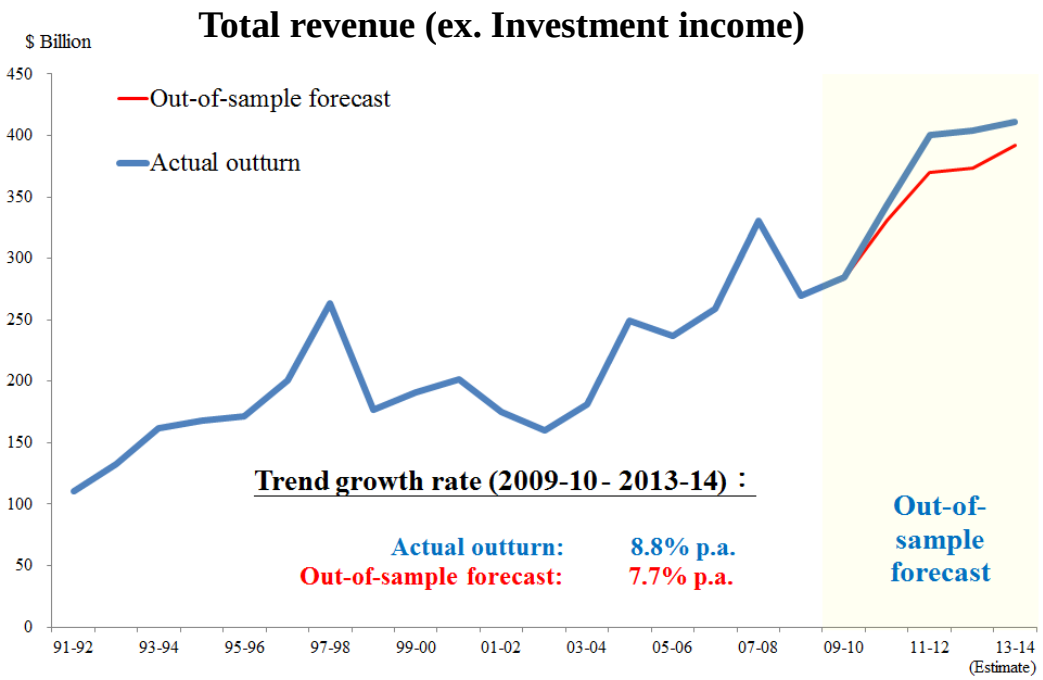


(f) Total revenue (ex. Investment income) upon aggregating up



7. In addition to in-sample performance, the Working Group has also looked at the out-of-sample forecasting performance, this being an even more stringent test for model adequacy and forecasting ability. The results likewise suggest a satisfactory performance. In particular, upon aggregating up the simulated figures from the five models (*Chart E.2*), the five-step-ahead out-of-sample forecast is projected to increase by 7.7% per annum for the period from 2009-10 to 2013-14, versus the actual trend growth of 8.8% per annum, indicating a reasonably good forecasting power even amidst the extra-ordinary shocks to the macro economy and hence revenue collection in the aftermath of the Global Financial Crisis in late 2008.

Chart E.2 – Out-of-sample simulation upon aggregating up the five models



Annex F

Projections of Government Revenue and Expenditure
Results of Sensitivity Analyses

	2041-42			
	Base Case	**High Case**	**Low Case**	**Shock Case**
Revenue[#] in $ billion (% of GDP)				
No Service Enhancement	1,407 (19.8%)	2,285 (25.8%)	937 (16.5%)	943 (19.8%)
Service Enhancement at 1% per annum	1,407 (19.8%)	2,135 (24.1%)	937 (16.5%)	943 (19.8%)
Service Enhancement at 2% per annum	1,407 (19.8%)	2,076 (23.5%)	937 (16.5%)	943 (19.8%)
Service Enhancement at Historical Trend	1,407 (19.8%)	2,076 (23.5%)	937 (16.5%)	943 (19.8%)
Expenditure[#] in $ billion (% of GDP)				
No Service Enhancement	1,700 (23.9%)	2,010 (22.7%)	1,544 (27.1%)	1,393 (29.3%)
Service Enhancement at 1% per annum	2,018 (28.4%)	2,258 (25.5%)	1,829 (32.1%)	1,646 (34.6%)
Service Enhancement at 2% per annum	2,413 (34.0%)	2,660 (30.1%)	2,186 (38.4%)	1,965 (41.3%)
Service Enhancement at Historical Trend	2,949 (41.5%)	3,253 (36.8%)	2,670 (46.9%)	2,398 (50.4%)
Structural deficit starts				
No Service Enhancement	2029-30	n.a.	2024-25	2015-16
Service Enhancement at 1% per annum	2024-25	2034-35	2022-23	2015-16
Service Enhancement at 2% per annum	2022-23	2025-26	2021-22	2015-16
Service Enhancement at Historical Trend	2021-22	2022-23	2020-21	2015-16

Fiscal Reserves depleted				
No Service Enhancement	2041-42	n.a.	2034-35	2023-24
Service Enhancement at 1% per annum	2034-35	n.a.	2031-32	2022-23
Service Enhancement at 2% per annum	2031-32	2035-36	2029-30	2021-22
Service Enhancement at Historical Trend	2028-29	2030-31	2027-28	2021-22
Debt level* as at end-March in $ billion (% of GDP)				
No Service Enhancement	271 (3.8%)	n.a.	3,480 (61.1%)	4,226 (88.8%)
Service Enhancement at 1% per annum	3,188 (44.9%)	n.a.	6,097 (107.1%)	6,440 (135.3%)
Service Enhancement at 2% per annum	6,542 (92.1%)	2,676 (30.2%)	9,180 (161.3%)	9,088 (191%)
Service Enhancement at Historical Trend	10,965 (154.3%)	7,497 (84.7%)	13,274 (233.2%)	12,624 (265.2%)

n.a. = not applicable

[#] Revenue includes investment income and expenditure includes interest expenses, if any.

* The amount of outstanding debt for financing the Government's operations upon the depletion of the fiscal reserves.

Annex G

Economic and Fiscal Position of Hong Kong

Chart G.1 – Hong Kong: Government revenue, expenditure and surplus/deficits (1997 – 2012)

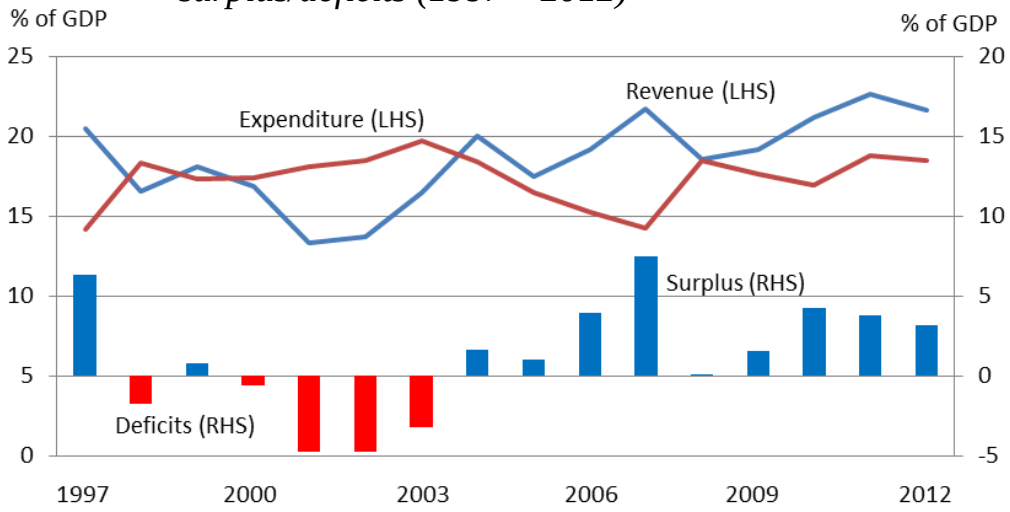
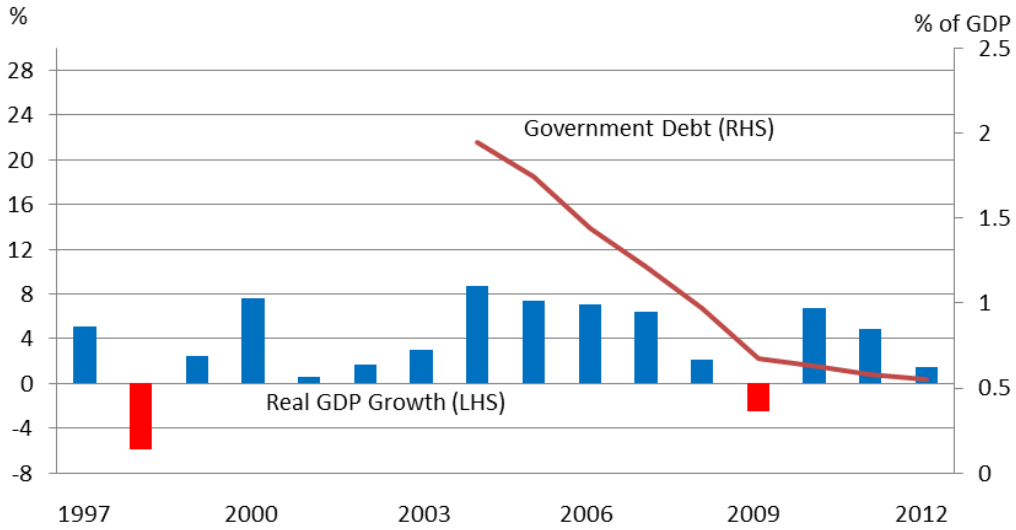


Chart G.2 – Hong Kong: Government gross debt and real GDP growth (1997 – 2012)



Annex H

Illustrative Presentation of Operating Account and Capital Account

($ Billion)	2013-14 Estimate	2014-15 Estimate	2015-16 Forecast	2016-17 Forecast	2017-18 Forecast	2018-19 Forecast
Operating Account						
Operating revenue	347.9	348.9	392.3	405.6	431.4	467.5
Less: Operating expenditure	(338.8)	(325.0)	(388.8)	(357.4)	(377.1)	(397.8)
Operating surplus	9.1	23.9	3.5	48.2	54.3	69.7
Capital Account						
Capital revenue	99.9	81.2	70.0	70.3	74.1	78.7
Less: Capital expenditure	(97.0)	(86.2)	(101.7)	(108.7)	(107.2)	(107.0)
Capital surplus/(deficit)	2.9	(5.0)	(31.7)	(38.4)	(33.1)	(28.3)
Bond repayment	-	(9.8)	-	-	-	-
Consolidated surplus/(deficit)	12.0	9.1	(28.2)	9.8	21.2	41.4
Fiscal reserves at 31 March	**745.9**	**755.0**	**726.8**	**736.6**	**757.8**	**799.2**
Represented by:						
Operating Account balance						
Opening balance		394.2	413.1	416.6	464.8	493.5
Operating surplus		23.9	3.5	48.2	54.3	69.7
Transfer to Capital Account*		(5.0)	-	-	(25.6)	(29.0)
Closing balance	**394.2**	**413.1**	**416.6**	**464.8**	**493.5**	**534.2**
Capital Account balance						
Opening balance		351.7	341.9	310.2	271.8	264.3
Capital deficit		(5.0)	(31.7)	(38.4)	(33.1)	(28.3)
Bond repayment		(9.8)	-	-	-	-
Transfer from Operating Account*		5.0	-	-	25.6	29.0
Closing balance	**351.7**	**341.9**	**310.2**	**271.8**	**264.3**	**265.0**

* Transfer to meet the expected funding shortfall under the Capital Works Reserve Fund.

Financial Statistics

(A) Overview (in $ million)

	Nominal GDP (Calendar year) ($ million)	Total Government Revenue* ($ million)	Total Government Expenditure# ($ million)	Surplus / (Deficit) ($ million)	Fiscal Reserves as at end of the financial year@ ($ million)
2014-15 (OE)	2,218,000	430,047	420,913	9,134	755,062
2013-14 (RE)	2,122,492	447,805	435,791	12,014	745,928
2012-13	2,037,165	442,150	377,324	64,826	733,914
2011-12	1,934,433	437,723	364,037	73,686	669,088
2010-11	1,776,332	376,481	301,360	75,121	595,402
2009-10	1,659,245	318,442	292,525	25,917	520,281
2008-09	1,707,487	316,562	315,112	1,450	494,364
2007-08	1,650,756	358,465	234,815	123,650	492,914
2006-07	1,503,351	288,014	229,413	58,601	369,264
2005-06	1,412,125	247,035	233,071	13,964	310,663
2004-05	1,316,949	263,591	242,235	21,356	295,981
2003-04	1,256,669	207,338	247,466	(40,128)	275,343
2002-03	1,297,341	177,489	239,177	(61,688)	311,402
2001-02	1,321,142	175,559	238,890	(63,331)	372,503
2000-01	1,337,501	225,060	232,893	(7,833)	430,278
1999-2000	1,285,946	232,995	223,043	9,952	444,254
1998-99	1,308,074	216,115	239,356	(23,241)	434,302
1997-98	1,373,083	281,226	194,360	86,866	457,543

(A) Overview (as % of GDP)

	Nominal GDP (Calendar year) ($ million)	Total Government Revenue* (% of GDP)	Total Government Expenditure# (% of GDP)	Surplus / (Deficit) (% of GDP)	Fiscal Reserves as at end of the financial year@ (% of GDP)
2014-15 (OE)	2,218,000	19.4	19.0	0.4	34.0
2013-14 (RE)	2,122,492	21.1	20.5	0.6	35.1
2012-13	2,037,165	21.7	18.5	3.2	36.0
2011-12	1,934,433	22.6	18.8	3.8	34.6
2010-11	1,776,332	21.2	17.0	4.2	33.5
2009-10	1,659,245	19.2	17.6	1.6	31.4
2008-09	1,707,487	18.5	18.5	0.1	29.0
2007-08	1,650,756	21.7	14.2	7.5	29.9
2006-07	1,503,351	19.2	15.3	3.9	24.6
2005-06	1,412,125	17.5	16.5	1.0	22.0
2004-05	1,316,949	20.0	18.4	1.6	22.5
2003-04	1,256,669	16.5	19.7	(3.2)	21.9
2002-03	1,297,341	13.7	18.4	(4.8)	24.0
2001-02	1,321,142	13.3	18.1	(4.8)	28.2
2000-01	1,337,501	16.8	17.4	(0.6)	32.2
1999-2000	1,285,946	18.1	17.3	0.8	34.5
1998-99	1,308,074	16.5	18.3	(1.8)	33.2
1997-98	1,373,083	20.5	14.2	6.3	33.3

OE : Original Estimate
RE : Revised Estimate

* Including proceeds received from the issuance of government bonds and notes amounting to $25,394 million in 2004-05.

\# Including repayments of government bonds and notes amounting to $2,550 million, $2,700 million, $3,500 million and $9,750 million in 2006-07, 2008-09, 2009-10 and 2014-15 respectively.

@ Including the provision for loss in investments with the Exchange Fund amounting to $6,143 million and $718 million in 2000-01 and 2004-05 respectively.

Including the write-back of provision for loss in investments with the Exchange Fund amounting to $5,556 million, $587 million and $718 million in 2001-02, 2002-03 and 2005-06 respectively.

(B) Government Revenue : Operating and Capital (in $ million)

	Operating Revenue ($ million)	Capital Revenue* ($ million)	Total Government Revenue* ($ million)
2014-15 (OE)	348,882	81,165	430,047
2013-14 (RE)	347,868	99,937	447,805
2012-13	344,606	97,544	442,150
2011-12	339,421	98,302	437,723
2010-11	299,800	76,681	376,481
2009-10	262,860	55,582	318,442
2008-09	281,485	35,077	316,562
2007-08	276,314	82,151	358,465
2006-07	234,420	53,594	288,014
2005-06	204,548	42,487	247,035
2004-05	188,004	75,587	263,591
2003-04	174,611	32,727	207,338
2002-03	153,336	24,153	177,489
2001-02	151,405	24,154	175,559
2000-01	171,320	53,740	225,060
1999-2000	175,196	57,799	232,995
1998-99	176,783	39,332	216,115
1997-98	204,408	76,818	281,226

(B) Government Revenue : Operating and Capital (as % of GDP)

	Operating Revenue (% of GDP)	Capital Revenue* (% of GDP)	Total Government Revenue* (% of GDP)
2014-15 (OE)	15.7	3.7	19.4
2013-14 (RE)	16.4	4.7	21.1
2012-13	16.9	4.8	21.7
2011-12	17.5	5.1	22.6
2010-11	16.9	4.3	21.2
2009-10	15.8	3.3	19.2
2008-09	16.5	2.1	18.5
2007-08	16.7	5.0	21.7
2006-07	15.6	3.6	19.2
2005-06	14.5	3.0	17.5
2004-05	14.3	5.7	20.0
2003-04	13.9	2.6	16.5
2002-03	11.8	1.9	13.7
2001-02	11.5	1.8	13.3
2000-01	12.8	4.0	16.8
1999-2000	13.6	4.5	18.1
1998-99	13.5	3.0	16.5
1997-98	14.9	5.6	20.5

OE : Original Estimate
RE : Revised Estimate

* Including proceeds received from the issuance of government bonds and notes amount to $25,394 million in 2004-05.

(B) Government Revenue : By Major Sources (in $ million)

	Profit Tax ($ million)	Salaries Tax ($ million)	Land Premium ($ million)	Stamp Duties ($ million)	Investment Income ($ million)	Other Incomes* ($ million)	Total Government Revenue* ($ million)
2014-15 (OE)	117,570	52,860	70,000	43,800	27,000	118,817	430,047
2013-14 (RE)	119,500	55,000	84,107	37,700	36,987	114,511	447,805
2012-13	125,638	50,467	69,563	42,880	37,995	115,607	442,150
2011-12	118,600	51,761	84,644	44,356	37,246	101,116	437,723
2010-11	93,183	44,255	65,545	51,005	33,933	88,560	376,481
2009-10	76,605	41,245	39,632	42,383	33,625	84,952	318,442
2008-09	104,151	39,008	16,936	32,162	46,571	77,734	316,562
2007-08	91,423	37,479	62,318	51,549	27,920	87,776	358,465
2006-07	71,919	38,586	37,001	25,077	29,418	86,013	288,014
2005-06	69,797	37,494	29,472	17,867	10,372	82,033	247,035
2004-05	58,640	33,990	32,033	15,851	14,674	108,403	263,591
2003-04	48,770	27,977	5,415	11,246	25,895	88,035	207,338
2002-03	38,799	29,733	11,476	7,458	17,550	72,473	177,489
2001-02	44,376	28,634	10,327	8,637	872	82,713	175,559
2000-01	42,969	26,303	29,531	10,911	23,519	91,827	225,060
1999-2000	37,699	24,831	34,810	12,116	41,920	81,619	232,995
1998-99	45,252	25,063	19,251	10,189	39,325	77,035	216,115
1997-98	55,347	30,159	62,481	29,097	17,925	86,217	281,226

(B) Government Revenue : By Major Sources (as % of GDP)

	Profit Tax (% of GDP)	Salaries Tax (% of GDP)	Land Premium (% of GDP)	Stamp Duties (% of GDP)	Investment Income (% of GDP)	Other Incomes* (% of GDP)	Total Government Revenue* (% of GDP)
2014-15 (OE)	5.3	2.4	3.2	2.0	1.2	5.4	19.4
2013-14 (RE)	5.6	2.6	4.0	1.8	1.7	5.4	21.1
2012-13	6.2	2.5	3.4	2.1	1.9	5.7	21.7
2011-12	6.1	2.7	4.4	2.3	1.9	5.2	22.6
2010-11	5.2	2.5	3.7	2.9	1.9	5	21.2
2009-10	4.6	2.5	2.4	2.6	2.0	5.1	19.2
2008-09	6.1	2.3	1.0	1.9	2.7	4.5	18.5
2007-08	5.5	2.3	3.8	3.1	1.7	5.3	21.7
2006-07	4.8	2.6	2.5	1.7	2.0	5.6	19.2
2005-06	4.9	2.7	2.1	1.3	0.7	5.8	17.5
2004-05	4.5	2.6	2.4	1.2	1.1	8.2	20.0
2003-04	3.9	2.2	0.4	0.9	2.1	7	16.5
2002-03	3.0	2.3	0.9	0.6	1.4	5.5	13.7
2001-02	3.4	2.2	0.8	0.7	0.1	6.1	13.3
2000-01	3.2	2.0	2.2	0.8	1.8	6.8	16.8
1999-2000	2.9	1.9	2.7	0.9	3.3	6.4	18.1
1998-99	3.5	1.9	1.5	0.8	3.0	5.8	16.5
1997-98	4.0	2.2	4.6	2.1	1.3	6.3	20.5

OE : Original Estimate
RE : Revised Estimate

* Including proceeds received from the issuance of government bonds and notes amount to $25,394 million in 2004-05.

(C) Government Expenditure : Operating and Capital (in $ million)

	Operating Expenditure			Capital Expenditure#	Total Government Expenditure#
	Recurrent Expenditure ($ million)	Non-recurrent Expenditure ($ million)	Total Operating Expenditure ($ million)	($ million)	($ million)
2014-15 (OE)	307,433	17,567	325,000	95,913	420,913
2013-14 (RE)	285,165	53,616	338,781	97,010	435,791
2012-13	262,321	40,621	302,942	74,382	377,324
2011-12	242,496	53,950	296,446	67,591	364,037
2010-11	223,173	16,120	239,293	62,067	301,360
2009-10	221,180	13,187	234,367	58,158	292,525
2008-09	214,119	43,888	258,007	57,105	315,112
2007-08	199,446	5,288	204,734	30,081	234,815
2006-07	189,498	4,475	193,973	35,440	229,413
2005-06	187,162	5,300	192,462	40,609	233,071
2004-05	192,295	4,611	196,906	45,329	242,235
2003-04	197,291	5,943	203,234	44,232	247,466
2002-03	198,004	2,306	200,310	38,867	239,177
2001-02	195,592	3,151	198,743	40,147	238,890
2000-01	184,522	2,164	186,686	46,207	232,893
1999-2000	173,913	2,008	175,921	47,122	223,043
1998-99	164,277	13,129	177,406	61,950	239,356
1997-98	149,386	11,180	160,566	33,794	194,360

(C) Government Expenditure : Operating and Capital (as % of GDP)

	Operating Expenditure			Capital Expenditure[#]	Total Government Expenditure[#]
	Recurrent Expenditure (% of GDP)	Non-recurrent Expenditure (% of GDP)	Total Operating Expenditure (% of GDP)	(% of GDP)	(% of GDP)
2014-15 (OE)	13.9	0.8	14.7	4.3	19.0
2013-14 (RE)	13.4	2.5	16.0	4.6	20.5
2012-13	12.9	2.0	14.9	3.7	18.5
2011-12	12.5	2.8	15.3	3.5	18.8
2010-11	12.6	0.9	13.5	3.5	17.0
2009-10	13.3	0.8	14.1	3.5	17.6
2008-09	12.5	2.6	15.1	3.3	18.5
2007-08	12.1	0.3	12.4	1.8	14.2
2006-07	12.6	0.3	12.9	2.4	15.3
2005-06	13.3	0.4	13.6	2.9	16.5
2004-05	14.6	0.4	15.0	3.4	18.4
2003-04	15.7	0.5	16.2	3.5	19.7
2002-03	15.3	0.2	15.4	3.0	18.4
2001-02	14.8	0.2	15.0	3.0	18.1
2000-01	13.8	0.2	14.0	3.5	17.4
1999-2000	13.5	0.2	13.7	3.7	17.3
1998-99	12.6	1.0	13.6	4.7	18.3
1997-98	10.9	0.8	11.7	2.5	14.2

OE : Original Estimate
RE : Revised Estimate

[#] Including repayments of government bonds and notes amounting to $2,550 million, $2,700 million, $3,500 million and $9,750 million in 2006-07, 2008-09, 2009-10 and 2014-15 respectively.

(D) Recurrent Expenditure : By Policy Area Group (in $ million)

	Education ($ million)	Social Welfare ($ million)	Health ($ million)	Others ^ ($ million)	Total Recurrent Expenditure ($ million)
2014-15 (OE)	67,131	56,908	52,373	131,021	307,433
2013-14 (RE)	63,752	51,892	49,768	119,753	285,165
2012-13	60,449	42,813	46,226	112,833	262,321
2011-12	55,526	40,333	41,491	105,146	242,496
2010-11	51,034	37,577	36,774	97,788	223,173
2009-10	50,831	39,405	35,333	95,611	221,180
2008-09	49,863	38,511	33,849	91,896	214,119
2007-08	46,794	33,979	31,641	87,032	199,446
2006-07	44,602	32,424	29,830	82,642	189,498
2005-06	44,527	31,989	29,286	81,360	187,162
2004-05	45,116	31,910	30,136	85,133	192,295
2003-04	47,203	31,917	31,650	86,521	197,291
2002-03	47,775	30,802	32,323	87,104	198,004
2001-02	47,023	28,594	31,930	88,045	195,592
2000-01	45,030	27,025	30,479	81,988	184,522
1999-2000	43,627	26,376	29,880	74,030	173,913
1998-99	41,614	24,906	28,762	68,995	164,277
1997-98	37,325	19,962	26,005	66,094	149,386

(D) Recurrent Expenditure : By Policy Area Group (as % of GDP)

	Education (% of GDP)	Social Welfare (% of GDP)	Health (% of GDP)	Others^ (% of GDP)	Total Recurrent Expenditure (% of GDP)
2014-15 (OE)	3.0	2.6	2.4	5.9	13.9
2013-14 (RE)	3.0	2.4	2.3	5.7	13.4
2012-13	3.0	2.1	2.3	5.5	12.9
2011-12	2.9	2.1	2.1	5.4	12.5
2010-11	2.9	2.1	2.1	5.5	12.6
2009-10	3.1	2.4	2.1	5.7	13.3
2008-09	2.9	2.3	2.0	5.3	12.5
2007-08	2.8	2.1	1.9	5.3	12.1
2006-07	3.0	2.2	2.0	5.4	12.6
2005-06	3.2	2.3	2.1	5.7	13.3
2004-05	3.4	2.4	2.3	6.5	14.6
2003-04	3.8	2.5	2.5	6.9	15.7
2002-03	3.7	2.4	2.5	6.7	15.3
2001-02	3.6	2.2	2.4	6.6	14.8
2000-01	3.4	2.0	2.3	6.1	13.8
1999-2000	3.4	2.1	2.3	5.7	13.5
1998-99	3.2	1.9	2.2	5.3	12.6
1997-98	2.7	1.5	1.9	4.8	10.9

OE : Original Estimate
RE : Revised Estimate

^ Covering security, infrastructure, economic, housing, environment and food, community and external affairs and support.

An electronic copy of the report is available at the website of the Treasury Branch, Financial Services and the Treasury Bureau (http://www.fstb.gov.hk/tb/en/)