

MEDIUM-TERM FISCAL PROSPECTS AND IMPLICATIONS¹

Questions: (1) What are the long-term challenges for Hong Kong SAR's fiscal policy and implications for fiscal space? (2) Policy recommendations?

Hong Kong SAR's fiscal framework has worked well over the last 20 years but challenges have emerged that will strain the fiscal position in the medium to long term. Consequently, while fiscal space is ample currently, it could become gradually constrained over time. The fiscal rule should be implemented flexibly and revenue mobilization needs to be considered down the road. On the expenditure side, containment will be hard given rapid aging and still high inequality. The challenge will be to maintain investment and boost land supply while increasing social spending to guarantee that those who need support are effectively protected.

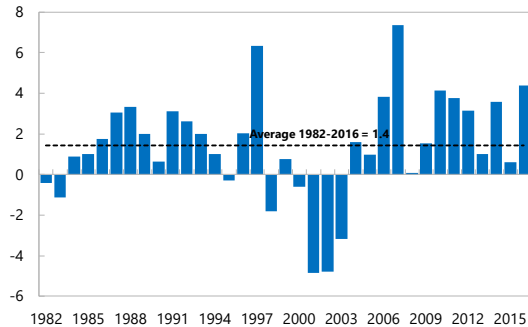
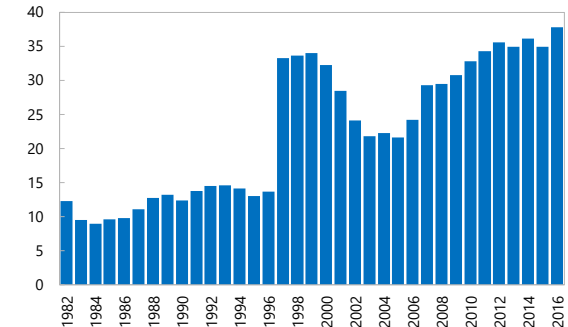
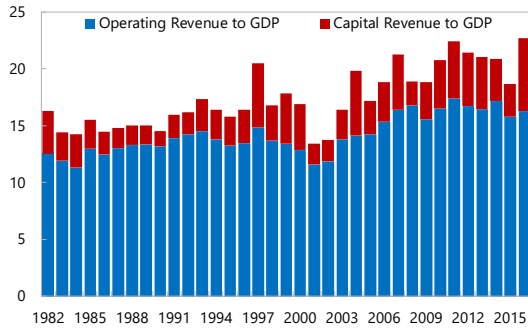
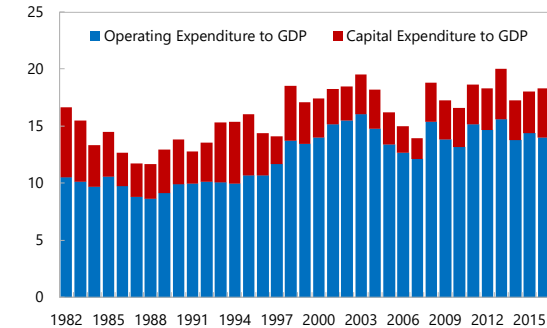
A. Long Run Fiscal Challenges and Implications for Fiscal Space

Hong Kong SAR's fiscal framework has worked well over the last 20 years, but challenges have emerged. Fiscal space is ample currently but could become constrained in the future.

Hong Kong SAR's Fiscal Framework and Outcomes Over the Past Decades

- 1. Public fiscal management was prudent even before the handover.** In the 1980s, the principle of keeping expenditure to GDP roughly constant was explicitly introduced in the yearly Medium Range Forecast, where multi-year fiscal estimates are still formulated (see Lam, 2001).
- 2. The SAR's basic law enshrined the principle of fiscal prudence.** In effect since 1 July 1997, the basic law states in its Article 107 that the government is to keep "...expenditure within the limits of revenues in drawing up its budget, and strive to achieve a fiscal balance, avoid deficits and keep the budget commensurate with the growth rate of its gross domestic product."
- 3. Hong Kong SAR has experienced systematic fiscal surpluses and rising fiscal reserves (figure 1).** Hong Kong SAR's surplus averaged 1.4 percent of GDP since 1997. In fact, there have been fiscal surpluses in every year since FY03/04, maintained even through the GFC. Consequently, fiscal reserves accumulated over time and are now approaching 40 percent of GDP. Revenues and expenditure, as a percent of GDP, have been slightly trending up over the last 30+ years, but remained roughly constant since the handover in 1997.

¹ Prepared by Rui Mano (APD).

Figure 1. A Long-term View of Hong Kong SAR's Fiscal Performance**Overall Balance**
(Percent of GDP)**Fiscal Reserves**
(Percent of GDP)**Government Revenue**
(Percent of GDP)**Government Expenditure**
(Percent of GDP)

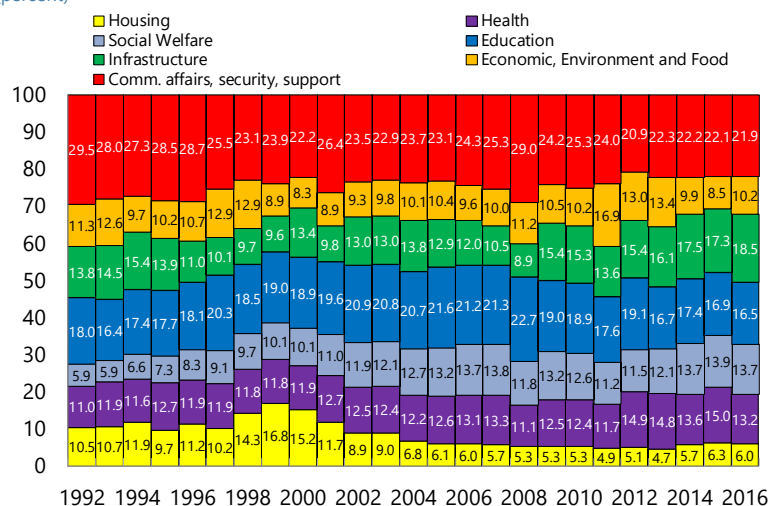
Sources: CEIC Data Co. Ltd. IMF staff calculations.

Challenges**Challenge 1: Rising Recurrent Spending in the Medium-term**

4. Infrastructure, social welfare and health have been taking up a progressively larger share of total public spending (Figure 2). The share devoted to infrastructure out of total public spending has nearly doubled from 9.6 in FY97/98 to 18.5 in FY16/17. Health and social welfare are also progressively accounting for more of total public spending, increasing from around 22 percent to almost 27 percent in the same period. Spending on housing declined rapidly through the late 90s and early 2000s and is only recently rising with the renewed efforts to expand land supply. The share of public spending devoted to education has also declined slightly.

Figure 2. Public expenditure breakdown by main policy areas

(percent)



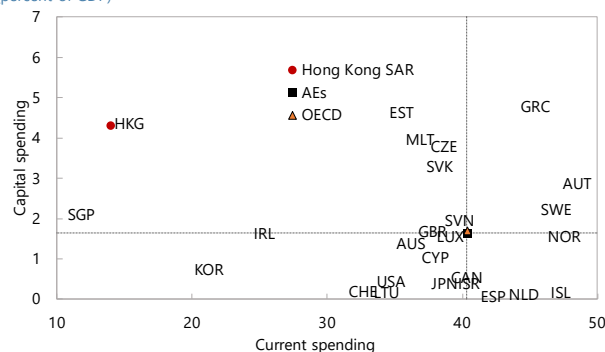
Sources: CEIC, staff estimates.

5. While infrastructure spending is on par or even larger than most other advanced economies, ... At around 4 percent of GDP since FY08/09, capital spending is high in an international context and the quality of infrastructure is consistently ranked as one of the best in the world (Figure 3).

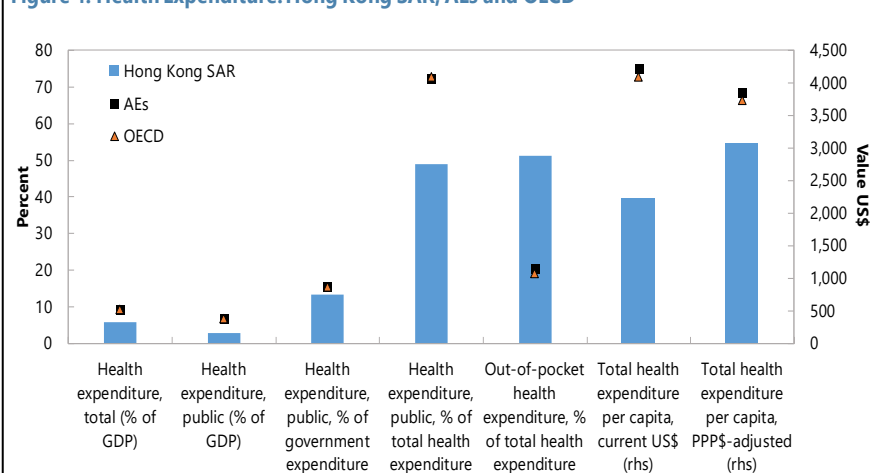
6. ...other types of spending are lower reflecting Hong Kong SAR's lean government philosophy and its current demographics. The government wage bill is low across several indicators: wage bill to GDP at 4.2 percent, wage bill to total public expenditure just shy of 20 percent, and public employment to working age population of 4.4 percent, all much lower than other AEs. Despite recent increases, social spending is also comparatively low. Social assistance, pension and health spending (Figure 4) are all below other advanced

Figure 3. Current and Capital Spending in 2016

(percent of GDP)



Source: FAD's expenditure assessment tool.

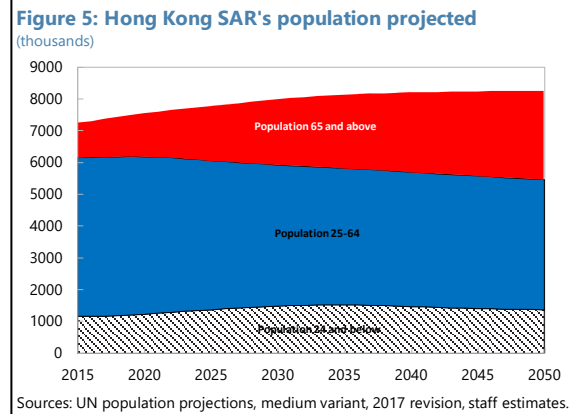
Figure 4. Health Expenditure: Hong Kong SAR, AEs and OECD

Source: FAD's expenditure assessment tool and staff estimates.

economies, in part due to Hong Kong SAR's relatively younger population at present.

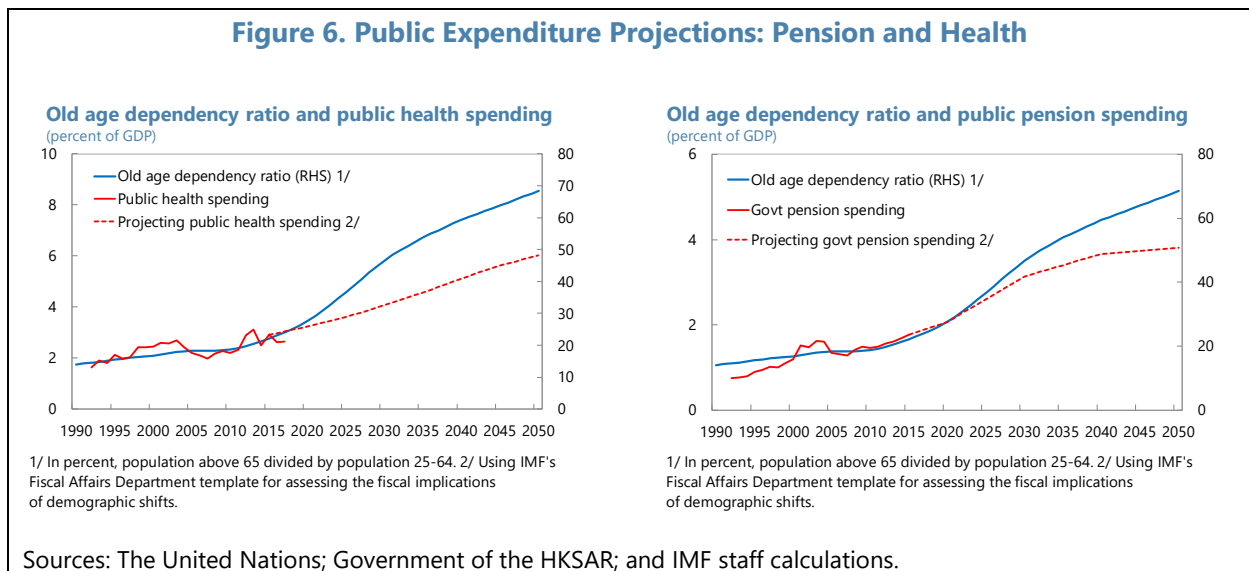
7. However, Hong Kong SAR is aging rapidly and social expenditure is likely to rise gradually.

Due to diminished fertility and rising life expectancy, the United Nations projects Hong Kong SAR's population to age quickly (Figure 5). The old-age dependency ratio (ratio of population over 65 to population aged 25-64) is expected to rise to 68.5 by 2050 from its 2015 level of 22.2.



8. As a result, health and pension spending could roughly double by 2050 (Figure 6).

Based on the methodology developed in Clements and others (2015), public health spending could more than double to 6 percent of GDP by 2050 from its 2016 level of 2.9 percent of GDP.² Pension spending may increase to 3.9 percent of GDP by 2050 (based on Clements and others (2013) and IMF (2017a)), from 1.8 percent of GDP in 2015.³ These estimates are likely conservative, since the impact of aging on economic activity itself is hard to predict and may not be well captured. Estimates in IMF (2017b) project a reduction of $\frac{3}{4}$ of a percentage point in Hong Kong SAR's real GDP growth due to aging.



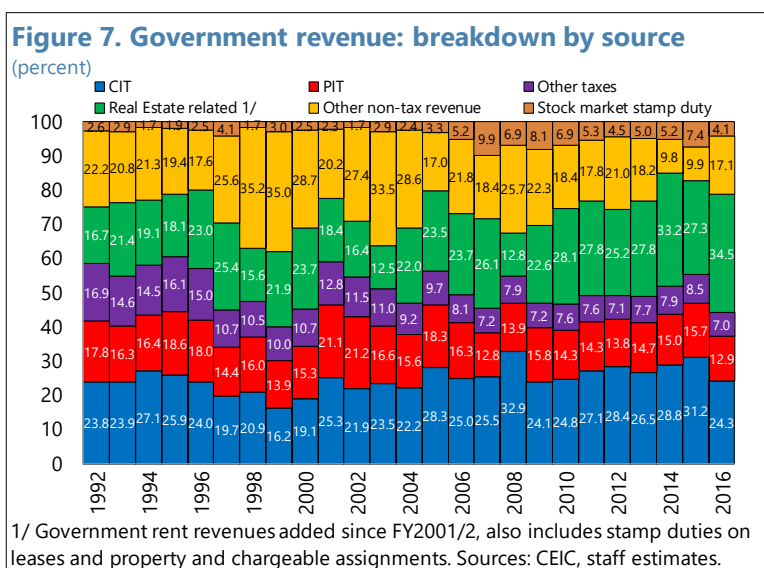
² The approach entails using spending indices by age cohort estimated from OECD countries and applying those to Hong Kong SAR's share of population by cohort. This approach is a simplification of that in de la Maisonneuve and Martins (2013), essentially ignoring non-demographic factors.

³ Assuming a constant replacement rate and coverage ratio of pensioners to population aged above 65 years, changes in pension expenditure to GDP are proportional to changes in employment ratio times changes in old-age dependency ratio (See Appendix 1 of Clements and others, 2013). Given population and employment ratio projections and an initial level of pension expenditure to GDP, one can thus calculate subsequent levels of pension spending to GDP.

9. **Additionally, high and persistent inequality is currently, and will likely remain, a catalyst for increased demand for public spending.** Hong Kong SAR has elevated market income inequality, in part explained by the structure of its economy (see box in IMF 2016a). Additionally, rapid aging may exacerbate inequality dynamics. Recently, across the world there has been an increased focus on inequality and policies to address it. Hong Kong SAR has responded by considerably upgrading its redistributive policies but going forward the government may come under additional pressure to increase support to households at the bottom of the income distribution.

Challenge 2: heavy reliance on real estate related revenues and other volatile sources

10. **Revenues have become particularly reliant on the real estate sector.** Over time, revenues tied to the property market such as transaction and recurrent property taxes⁴ have become a major source of revenues averaging more than 28 percent of total revenues during 2010-2016, up from an average of around 20 percent in the 2000s (Figure 7). In addition, stamp duties collected on stock market transactions accounted for 4.1 percent of total revenues in FY16/17 but have varied from a high of 9.9 percent and a low of 1.7 percent since FY92/93.⁵



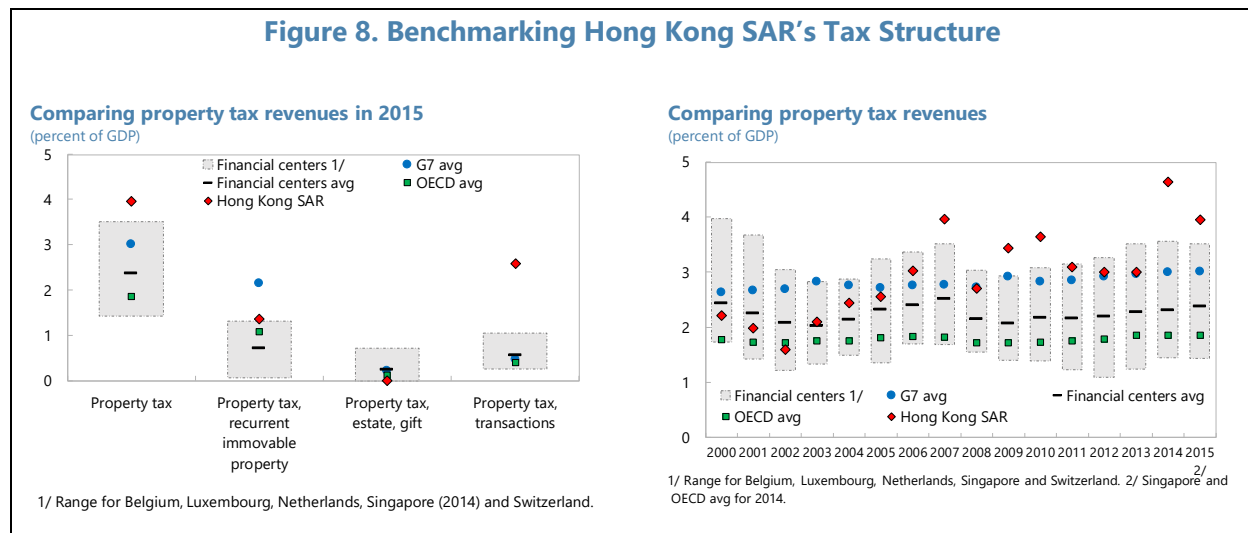
11. **In fact, Hong Kong SAR relies more on tax revenue from property than other economies, although this revenue is highly volatile.** Figure 8, top left, shows that Hong Kong SAR relies more than other economies on property taxes, even compared to other financial centers like Singapore or Luxembourg, and that this over reliance arises from transaction-based taxes like stamp duties, although recurrent property taxes also generate sizable income for Hong Kong SAR. Figure 8, top right, shows that although Hong Kong SAR has higher property tax revenues than any other

⁴ Includes revenue from general rates and government rents charged at 3% of rateable values in accordance with the Government Rent (Assessment and Collection) Ordinance (Cap. 515).

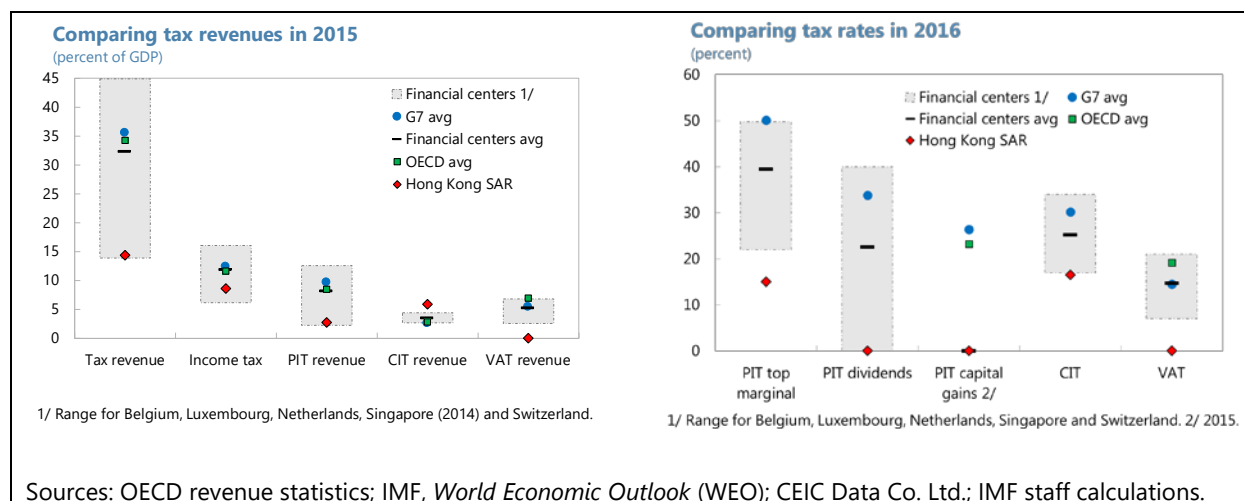
⁵ For example, stamp duties collected on stock market transactions, or on "contract notes", collapsed by 70 percent in FY98/99, and soared 136 percent in FY07/08, showing a very high degree of pro-cyclicality as expected.

financial center considered since FY14/15, in the early 2000s it had lower revenues than the average financial center. The amplitude of property taxes to GDP is potentially large in general, and appears larger in Hong Kong SAR's case. Underlying these sharp movements are stamp duty revenues from both real estate and stock market transactions, the former benefiting from both expanding base and rates since the GFC.

12. Moreover, other major sources of revenue are also volatile given relatively low personal income and goods and services tax rates. Corporate income taxes (CIT) have also grown in importance to over 30 percent of revenues in FY15/16 and are highly subject to the business cycle. Figure 8, bottom left, shows that Hong Kong SAR relies relatively more on corporate income taxes than any other financial center, while its revenues from personal income tax (PIT) and sales/value added taxes (VAT) are below comparators due to low tax rates on personal income and no sales/value-added taxes (see figure 8, bottom right). While capital gains taxes tend to be zero in financial centers, tax rates on corporate profits, dividend income, top marginal personal income and VAT are generally higher in other financial centers. Other non-tax revenues (excluding land sales) have also been very volatile, particularly capital revenue that depends on uncertain investment returns.⁶



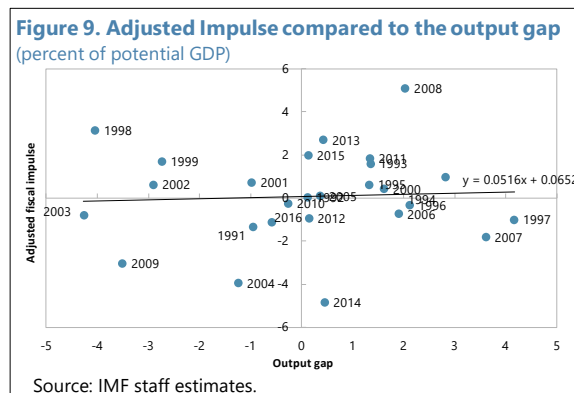
⁶ Capital revenues are highly volatile, with several instances of more than doubling or more than halving as a share of GDP from one year to the next.



13. The volatility of key revenue sources is a risk particularly given the recent buoyancy in asset markets. In an extreme scenario where stock market transactions fall sharply, the business climate sours, and, at the same time, house prices correct, revenues could contract sizably as was the case in FY01/02. This could render medium-term revenue projections particularly uncertain. Even in a normalization scenario, revenues could decline significantly as the house price gap closes gradually. As an illustration, property tax revenue was on average 1 percent of GDP higher after 2009 than its 2001–2009 average.

Challenge 3: Counter-cyclical Policy, Flexible Demand Management

14. Fiscal policy could have been more supportive of demand conditions in the past. The fiscal impulse, measured by the change in primary balance adjusted for one-off non-policy factors and the business cycle has not been an effective tool to weather economic cycles⁷. Figure 9, showing combinations of output gap and fiscal impulse illustrates this finding: if fiscal policy had been countercyclical, most data points should congregate in the northwest-southeast quadrants, and the fitted line should have a negative slope, neither of which is true. Indeed, the chart shows that fiscal policy has been acyclical during the previous 20 years, mostly due to weak expenditure-side automatic stabilizers.



15. Recently, the Chief Executive stated that the Basic Law should not preclude the government from supporting the economy when necessary.⁸ In the past, the strict adherence to the fiscal rule inscribed in the Basic Law's article 107 may have prompted the authorities to run

⁷ Appendix A has more details behind this calculation.

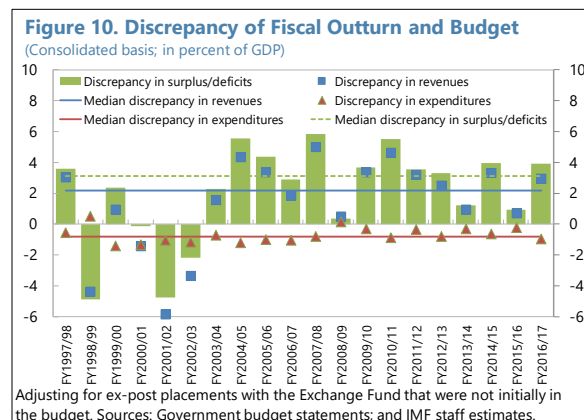
⁸ Public speech made in Singapore as published by the South China Morning Post on August 3 2017.

larger surpluses than they would have otherwise done if taking into account demand management concerns and resulted in an asymmetric implementation of fiscal policy.

Challenge 4: Over Performance of the Fiscal Balance

16. Actual revenues tend to be higher than budgeted while the reverse is true for expenditures.

Since FY97/98, actual revenues have been consistently larger than budgeted (by a median of 2.2 percent of GDP), with both operating and capital revenue typically over performing.⁹ Expenditures, on the contrary, tend to be lower than budgeted (by a median of 0.8 percent of GDP), almost all of this explained by operating expenditures.¹⁰

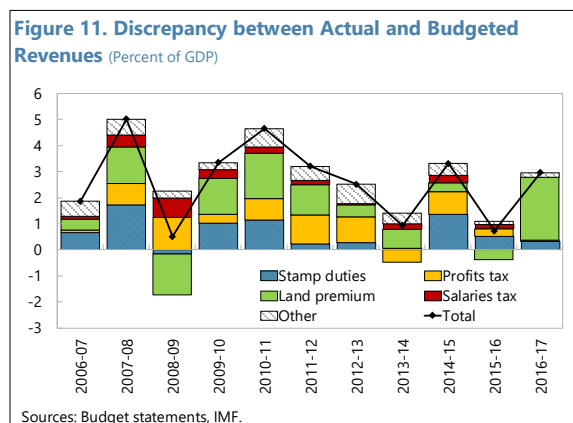


17. Revenue over-performance is pervasive across sources, although a large part can be attributed to land sales that are not projected in the budget. In the budget, the revenue estimate for land sales is determined by the sites to be sold and the conditions of the property market, and thus it is natural that actual revenues outpace the budget amid rising land prices and land supply. However, even ignoring land sales, over-performance is very common across all major categories.

Implications for Fiscal Space

18. Fiscal space can be defined in different ways, but narrowly it is the ability of a government to expand its deficit without meaningfully changing debt sustainability and market access.

Assessing fiscal space thus involves a judgement on whether a temporary fiscal expansion can be accommodated by accounting for the impact on debt dynamics, yields, the path of gross financing needs, as well as economic and structural conditions (IMF 2016b).



19. Given its ample fiscal reserves, low debt, and recent fiscal surpluses, it is clear that Hong Kong SAR has fiscal space defined in this narrow sense. Government debt is virtually zero, fiscal reserves are now at 38 percent of GDP, and the government has run surpluses in 24 of the last

⁹ Median over-performance of operating revenue is 1.5 percent of GDP, while that of capital revenue is 0.5 percent of GDP. Capital revenue is more often lower than budgeted with 7 instances in the last 20 fiscal years, while operating revenue underperforms rarely (only 4 instances in the last 20 years).

¹⁰ Operating expenditures have under-performed in 18 out of the last 20 fiscal years, whereas capital expenditures tend to be much more balanced and their median under-performance is virtually zero.

30 years. There is little doubt that if needed, Hong Kong SAR's government has the capacity to support the economy with either tax relief or higher expenditures.

20. But Hong Kong SAR's fiscal position is expected to worsen over the medium-term due to aging and a normalization of real estate related revenues, rendering narrowly-defined fiscal space less relevant. Pressures on the spending side are looming, due to aging but also high and persistent inequality (see challenge 1 in the previous sub-section). In addition, revenues are also temporarily elevated due to the buoyancy in the housing market (see challenge 2 in the previous sub-section). These two combined pressures may lead to a significant deterioration of the fiscal position over time.

21. A structural deficit is to emerge under current policies due to ageing and lower revenues tied to real estate. Putting together the estimates discussed in the sub-section devoted to rising recurrent spending (challenge 1) and those in the sub-section regarding overreliance on real estate revenues (challenge 2), a structural deficit would emerge in the next 10-15 years. Over the very long-run, this deficit could reach 3 to 6 percent of GDP, if considering an increase in health and pension spending by 3-5 percent of GDP and a decline in revenues by 3-5 percent of GDP due to lower land premium and revenues tied to a normalization of the real estate market.

22. In its comprehensive report, the Working Group on Long-Term Fiscal Planning projected a rapidly deteriorating fiscal position over the medium-term (FSTB 2014). The working group laid out several scenarios with expenditures driven chiefly by demographics, and found that structural fiscal deficits would arise by 2030 and that fiscal reserves would be exhausted by 2041, under a best-case scenario. This despite projecting a relatively stable revenue-to-GDP ratio, which under current policies could be hard to achieve as noted previously.

23. Such comprehensive long-term estimates should be revisited periodically. Producing an independent report every three to five years, updating projections and testing their robustness should be considered. One goal would be to have a more accurate picture of long-term fiscal space. Small changes in fertility rates cumulate to large differences in aging profiles when extrapolating, and thus imply different consequences for the path of fiscal position. Another important goal of periodic reporting would be to serve as a communications device to educate the public about long-run fiscal challenges.

B. Policy Recommendations

The fiscal rule should be implemented flexibly and revenue mobilization needs to be considered in the medium term. On the expenditure side, containment will be hard given rapid aging and high inequality. The challenge will be to maintain investment and boost land supply while increasing social spending to guarantee that those who need support are effectively protected.

Adjusting the Fiscal Framework

24. The fiscal rule as inscribed in the Basic Law should be implemented flexibly over the cycle. In the past, fiscal policy was relatively acyclical and could have better supported aggregate demand. It is important to let fiscal policy respond to the cyclical conditions of the economy, and fundamentally avoid it being asymmetrically implemented. In a downside scenario, revenues naturally decline but expenditures should not be adjusted to maintain the budget roughly balanced. Similarly, if economic conditions surprise on the upside, fiscal savings should be accumulated, as has been the practice in Hong Kong SAR.

25. More importantly, the implications of the medium-term fiscal challenges for the implementation of the fiscal rule should be considered carefully. Keeping expenditure growth close to trend GDP growth will be increasingly challenging given aging and elevated inequality.

Revenue Mobilization

26. If expenditures are indeed set to increase structurally, the only feasible way to continue adhering to the fiscal rule will be to raise more revenue. If spending demands increase significantly and/or real estate revenues wane, it will be extremely difficult and undesirable, both politically and economically, to cut back on service provision either reducing benefits per recipient or reducing coverage. On these premises, a structural deficit would eventually emerge under current policies, which could be financed by running down the existing fiscal reserves initially and eventually issuing debt. However, the debt levels required to sustain such structural deficits would be high.

27. Hong Kong SAR's comparative advantage lies partly in its flexible, low-tax business environment and thus potential measures need to be carefully studied. The emergence over the longer-term of a structural deficit requires early thought, and the authorities should start actively studying options to raise revenue in a growth-friendly way. Taxes that do not hamper Hong Kong SAR's business competitiveness should be considered first, such as possibly introducing a value-added tax or a sales tax and increasing selected excises. Personal income taxes could be made more progressive, as the top marginal tax still appears low even compared to other financial centers. All of these were identified through a simple international benchmarking exercise, and merit careful study of their implications for efficiency and growth, as well as distributional impacts. The good news is that Hong Kong SAR has amassed fiscal reserves that buy it time for careful planning and due consideration of the trade-offs involved.

28. The recent establishment of a tax policy unit (TPU) under the Financial Services and the Treasury Bureau is a welcome step. A stated goal of the TPU is finding "...ways to broaden the tax base and increase revenue."¹¹ This goal is crucially important for Hong Kong SAR's medium-term fiscal prospects, and should be expanded to include also possible changes to the tax structure. The

¹¹ See press release on the reply by the Secretary for Financial Services and the Treasury, Mr James Lau, in the LegCo session of July 5 2017 (<http://www.ird.gov.hk/eng/ppr/archives/17070501.htm>).

unit already conducted research that was behind two recent tax policy measures: the two-tiered profits tax and enhanced deductions for research and development.

Expenditure containment is hard, prioritization can only have a limited impact

29. Infrastructure spending and boosting land supply are key for the economy's medium-term growth prospects and should be maintained. While non-essential spending is already low, the government should continue to study opportunities to reduce it further and the 0-1-1 program could be expanded. However, it appears that prioritization and rationalization can only achieve limited savings because Hong Kong SAR's government is already lean and efficient.

30. Containing social spending will be challenging, and social policies may need to be better targeted. As aging sets in, public expenditures, particularly on healthcare, will rise, resulting in strained social safety nets and potentially a wider gap between rich and poor. In this context, the authorities should study whether programs can be better targeted, while at the same time raising the benefit per recipient. The Old Age Allowance program is not means-tested and its benefit levels are low. Merging this program with the Old Age Living Allowance and thereby raising means-tested benefits that are more vital for recipients could be considered.

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Appendix I. Computing the Fiscal Impulse Based on the Structural Balance

This section discusses the methodology followed to construct estimates of fiscal impulse mentioned in the text and presented in Figure 9. It uses the standard literature on the topic (Fedelino and others, 2009, Bornhost and others, 2011, and Price and Dang, 2011).

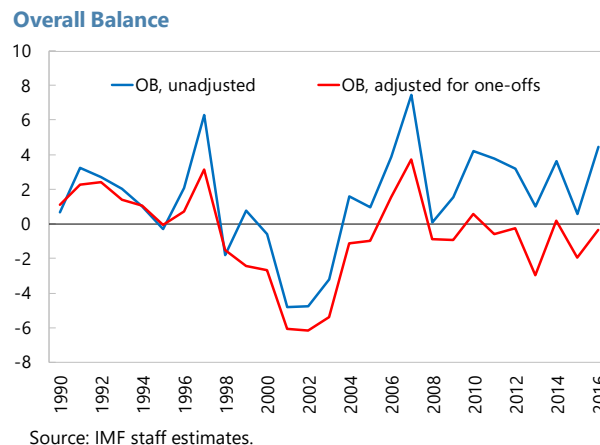
There are three main steps to computing the fiscal impulse based on the change in the structural fiscal balance. (Step 1) Revenues and expenditures must be adjusted for one-off or temporary measures that do not reflect a change in policy stance¹; (Step 2) Elasticities of revenues and expenditures to economic cycles are estimated; and (Step 3) Estimates of the structural balance and its change from year to year, i.e. the fiscal impulse, are computed.

Step 1: Adjusting Revenues and Expenditures for One-offs and Excluding Land

List of main adjustments²:

- Revenues from land premium, and other asset sales are excluded;
- Equity injections under the Capital Investment Fund are adjusted to account for the lag of disbursements, but loans extended are not adjusted for;
- The tax rebate of FY1998 is adjusted to correct for a timing mismatch between recording and actual loss of revenue;

The resulting adjusted overall balance is significantly different than the unadjusted balance, particularly in more recent years (see figure below). Most of the discrepancy is due to the exclusion of revenues from land sales.



¹ Classical examples include capital transfers or expenditures with disaster relief.

² These adjustments follow previous literature on estimating Hong Kong SAR's structural balance (see HKMA, 2002) and the rules of thumb in Larch and Turrini (2009).

(continued)

Step 2: Estimating Revenue and Expenditure Elasticities

Two main specifications are explored, using different measures of economic cycles.

First, we estimate the long run equation as in Liu and others (2015)³

$$\ln R_t = \gamma_Y \ln \left(\frac{Y_t}{Y_t^*} \right) + \gamma_S \ln \left(\frac{S_t}{S_t^*} \right) + \gamma_H \ln \left(\frac{H_t}{H_t^*} \right) + \delta t + e_t \quad (1)$$

Second, we estimate elasticities directly using the changes in (log) adjusted revenues regressed on measures of economic cycles:

$$\Delta \ln R_t = \beta_Y \Delta \ln \left(\frac{Y_t}{Y_t^*} \right) + \beta_S \Delta \ln \left(\frac{S_t}{S_t^*} \right) + \beta_H \Delta \ln \left(\frac{H_t}{H_t^*} \right) + u_t \quad (2)$$

Where:

- R_t are actual (adjusted) revenues, respectively
- Y_t, Y_t^* are actual and potential output, respectively
- S_t, S_t^* are actual and potential real equity price index, respectively⁴
- H_t, H_t^* are actual and potential real house price index, respectively
- e_t, u_t are error terms, t is time

The table below shows the results for equations (1) and (2).

The first four columns estimate equation (1) denoted by “in levels”, and vary by the measure of economic cycle used. Column 1 shows the elasticity of adjusted revenues to non-inflationary output gap⁵. Note that the elasticity estimate at more than 3 is quite large, compared to typical elasticities used in similar economies like Switzerland, Luxembourg, Belgium, Ireland, or Netherlands where elasticities used are typically between 1.0 and 1.5. Column 2 measures the elasticity with respect to the so called finance-neutral output gap, which includes financial variables as in Borio and others

³ This sub-section follows closely Liu and others (2015).

⁴ The potential stock price is estimated using an HP-filter with very large smoothing parameter of 1,562.5, which corresponds to an often-used smoothing parameter for financial variables of 400,000 at the quarterly frequency (see footnote 80 of IMF 2014).

⁵ Computed through a multivariate filter with both output and inflation series.

(2013). Elasticity estimates in this specification are somewhat smaller but still larger than typically found for other economies, although these estimates should be taken with caution given the smaller sample size. Column 3 and 4, add two other measures of economic cycles, house price gap and stock price gap, to the non-inflationary output gap measure in column 1. Columns 5-8 follow the same logic as 1-4 but estimate equation (2) instead, labelled "in diff".

In general, the elasticity to the output gap is large. The elasticity to house price gap also seems to be significant although in the differenced equation it is just shy of the 10 percent significance level. The elasticity to the stock price gap is much less robust.

Dependent variable: (log) Adjusted revenues	(1) in levels	(2) in levels	(3) in levels	(4) in levels	(5) in diff	(6) in diff	(7) in diff	(8) in diff
Non-inflationary output gap	3.73*** (0.00)		2.27*** (0.00)	2.91*** (0.00)				
Finance-neutral output gap		2.01*** (0.01)						
House real price gap			0.48*** (0.00)	0.47*** (0.00)				
HP-filter real stock price gap				-0.12 (0.38)				
Non-inflationary output gap, diff					3.45*** (0.00)		2.66*** (0.00)	2.82** (0.05)
Finance-neutral output gap, diff						2.92*** (0.00)		
House real price gap, diff							0.33 (0.10)	0.33 (0.12)
HP-filter real stock price gap, diff								-0.03 (0.88)
Constant	-85.87*** (0.00)	-94.62*** (0.00)	-70.09*** (0.00)	-68.12*** (0.00)	0.06*** (0.00)	0.05** (0.02)	0.05** (0.03)	0.05** (0.04)
Observations	27	18	21	21	26	17	20	20
Time trend used in the first 4 columns, pval in parentheses: *** p<0.01, ** p<0.05, * p<0.1								

Quarterly data confirms that the elasticity of revenues to output gap is large (around 2) when estimating equation (1). Estimating equation (2) produces results that are not very robust because of residual seasonality even after using standard techniques to remove it.

Expenditure elasticities are never significant.

In the end, we use an elasticity of revenues of 2.5 with respect to the non-inflationary output gap and elasticity of 0.4 with respect to the house price gap. Expenditures are assumed to be invariant with the cycle in the stock market, as elasticity estimates were always insignificant.

Step 3: Compute Fiscal Impulse

With the elasticities calculated in step 2, we compute adjusted revenues using:

$$\tilde{R}_t = R_t \left(\frac{Y_t}{Y_t^*} \right)^{-2.5} \left(\frac{H_t}{H_t^*} \right)^{-0.4} \quad (3)$$

The structural primary balance is the difference between \tilde{R} and expenditures adjusted for one-offs, and deducting total investment income and interest expenses under the Capital Works Fund.

The fiscal impulse is the change in primary structural balance from the previous fiscal year to the current (see figure below). A positive number like the one projected for FY17/18 (the last data point shown in the graph) means that the structural balance is going to be larger in the current fiscal year vs the previous, and thus that fiscal policy is not supportive of aggregate demand this year. Note that different measures of fiscal impulse using non-inflationary output gap alone, together with house price gaps, or using finance-neutral output gap all deliver similar estimates recently, despite some differences in the past.

