# Financing Land Creation and Its Impact on Government Fiscal Reserve

by

**Liu Pak Wai**

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Lau Chor Tak Institute of Global Economics and Finance
The Chinese University of Hong Kong
13/F, Cheng Yu Tung Building, 12 Chak Cheung Street, Shatin, Hong Kong

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## Introduction

Recently the Hong Kong SAR Government has announced two major land creation and development projects, Kau Yi Chau and the Northern Metropolis, which will be pursued simultaneously. Reclamation will turn Kau Yi Chau into an artificial island with 1,000 hectares of new land for housing development and an east-west and north-south transport hub. The Northern Metropolis bordering Shenzhen will provide land for innovation and technology development such as San Tin Technopole, as well as the development of the New Territories North Modern Services Centre and other housing developments. The development costs of these two mega projects are anticipated to be huge, spreading over a period of 20 years. It has been estimated that the construction cost of the Kau Yi Chau project will amount to 580 billion dollars. There is as yet no reliable estimate for the cost of developing the Northern Metropolis. Given the much larger land area involved, it can only be higher than the Kau Yi Chau project. These two projects have generated intense debates which centre around two issues: (1) Are these development projects economically viable and justifiable? (2) How should these projects be financed and what will be the impact on government finance and its fiscal reserve?

Whenever a government plans to engage in a large-scale infrastructural project, it should address the first issue and conduct a cost-benefit analysis to estimate its internal rate of return. Preferably the analysis should estimate not only the economic rate of return but also the social rate of return. In this instance, the analysis should encompass not only the costs of land


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formation and infrastructural construction, the expected revenue from land sales, but also the economic benefits derived from border region development, further integration with Shenzhen and the Greater Bay Area, in particular the benefits from technology and innovation development and enhanced transport connectivity through Kau Yi Chau and across the border. There are other social benefits of provision of more housing in Hong Kong. In this paper, we will not dwell on the details of the cost-benefit analysis of the two projects but proceed on the assumption that government has performed the estimation which yields a strongly positive rate of return. From a narrow financial point of view, a positive return is a safe assumption since, as we will shortly show, historically government revenue from land sales and lease modification has exceeded the cost of all capital works which include land formation and infrastructural construction. This paper will focus on the second issue: How should these projects be financed, and what will be the impact on government finance and its fiscal reserve?

**Land Premium and the Capital Works Reserve Fund**

A recent estimate of the government revenue from land sale in Kau Yi Chau project is $750 billion, which exceeds the estimated construction cost of $580 billion. There is as yet no reliable estimate of the revenue and cost of the Northern Metropolis project, which is several times larger in scale. An analysis of the historical record of government budget in land and infrastructure development will shed some light on the impact of these two projects on government finance.

The Hong Kong government budget, broadly speaking, is made up of two major components, the Operating Account and the Capital Account. Most people are more familiar with the Operating Account, which consists of recurrent revenue such as salary tax, profit tax, stamp duty and all sorts of fees and charges, and recurrent expenditure in education, health care, social welfare and other services. The Capital Account is what we will focus on when we come to infrastructure development. The major constituent of the Capital Account is the Capital Works Reserve Fund (CWRF). All government land-related revenues, with the exception of stamp duty from property transactions (which is treated as recurrent revenue in the Operating Account), are credited to the CWRF. The two main sources are the revenue from the sale of land and the premium government receives from lease modifications. They are collectively known as land premium. From the CWRF, the government pays for the costs of land formation and construction of the transport infrastructure including roads and bridges (but not including railroads and airport, which are the responsibility of respectively the MTR and the Airport Authority), as well as the construction costs of schools, hospitals and government buildings (but not public housing and housing under the Home Ownership Scheme (HOS), which are the responsibility of the Housing Authority).

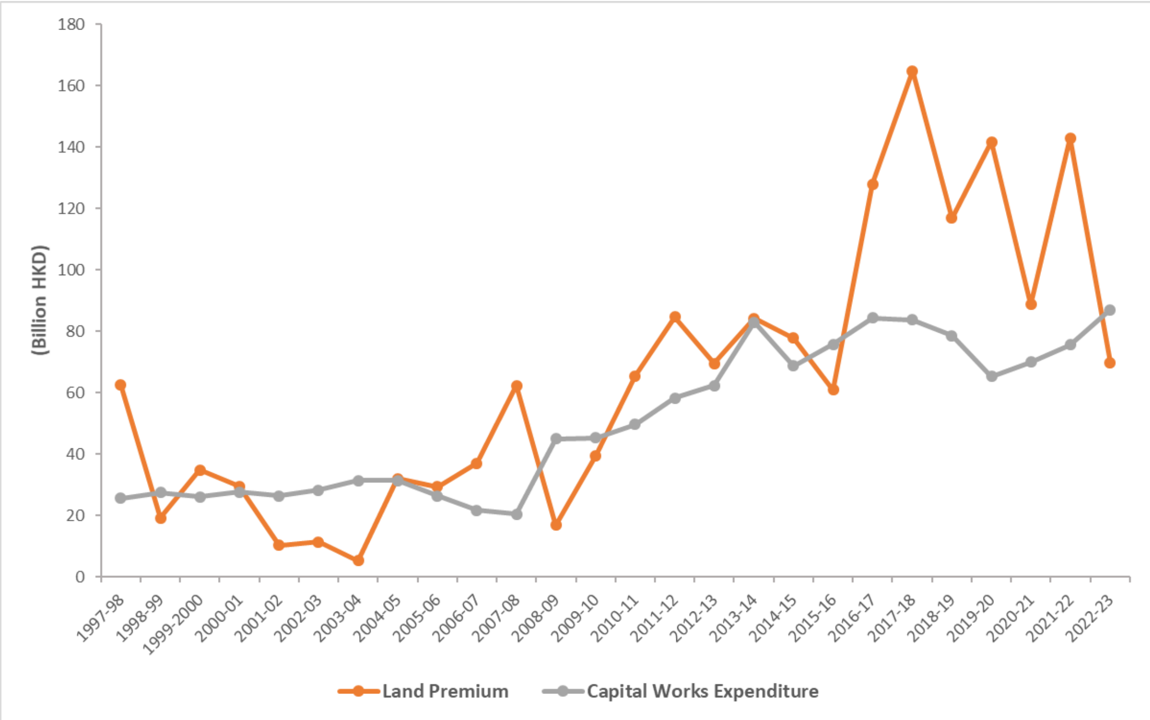
Table 1 lists the annual land premium, the capital works expenditure and the net balance from fiscal year 1997-98 to 2022-23. The capital works expenditure does not fluctuate as much over the period as the land premium (see Figure 1). Expenditure exceeds land premium in only 8 out of the 26 fiscal years (shaded red), resulting in a deficit for that year in the CWRF account. The deficit years are the years when the land premium is low due to a depressed property market. They are the years related of the Asian Financial Crisis and SARS (1998-99 and 2001-04), the Global Financial Crisis (2008-10), 2015-16 and COVID-19 (2022-23). It is noteworthy to point out that the years of the government consolidated account deficits are closely associated with the years when the land premium is much lower than the average and the years when there are deficits in the CWRF account. In any case, over a 26-year period following the changeover of sovereignty in 1997, the aggregate land premium received by the government exceeds the total capital works outlay by $359.6 billion. It is safe to say that in the long term, land premium more than pays for the cost of infrastructure development in Hong Kong.

**Table 1: Capital Works Reserve Fund (CWRF), 1997-98 to 2022-23**

| Year | Fiscal Surplus/Deficit of the Government (HKD bn) | Land Premium (A) (HKD bn) | Capital Works Expenditure (B) (HKD bn) | Net Surplus/Deficit of Land Premium (A)-(B) (HKD bn) |
|---|---|---|---|---|
| 1997-98 | 86.87 | 62.48 | 25.72 | 36.76 |
| 1998-99 | -23.24 | 19.25 | 27.59 | -8.34 |
| 1999-2000 | 9.95 | 34.81 | 26.10 | 8.71 |
| 2000-01 | -7.83 | 29.53 | 27.68 | 1.85 |
| 2001-02 | -63.33 | 10.33 | 26.46 | -16.13 |
| 2002-03 | -61.69 | 11.48 | 28.32 | -16.84 |
| 2003-04 | -40.13 | 5.42 | 31.43 | -26.01 |
| 2004-05 | 21.36 | 32.03 | 31.39 | 0.64 |
| 2005-06 | 13.96 | 29.47 | 26.46 | 3.02 |
| 2006-07 | 58.60 | 37.00 | 21.69 | 15.32 |
| 2007-08 | 123.65 | 62.32 | 20.53 | 41.79 |
| 2008-09 | 1.45 | 16.94 | 45.01 | -28.07 |
| 2009-10 | 25.92 | 39.63 | 45.33 | -5.70 |
| 2010-11 | 75.12 | 65.55 | 49.78 | 15.77 |
| 2011-12 | 73.69 | 84.64 | 58.36 | 26.29 |
| 2012-13 | 64.83 | 69.56 | 62.37 | 7.19 |
| 2013-14 | 21.80 | 84.26 | 83.00 | 1.26 |
| 2014-15 | 72.80 | 77.80 | 68.80 | 9.00 |
| 2015-16 | 14.37 | 60.89 | 75.80 | -14.91 |
| 2016-17 | 111.07 | 127.97 | 84.40 | 43.57 |
| 2017-18 | 148.97 | 164.81 | 83.84 | 80.97 |
| 2018-19 | 67.95 | 116.86 | 78.66 | 38.21 |
| 2019-20 | -10.58 | 141.73 | 65.41 | 76.32 |
| 2020-21 | -232.54 | 88.71 | 70.05 | 18.67 |
| 2021-22 | 29.36 | 143.04 | 75.62 | 67.42 |
| 2022-23 | -122.34 | 69.93 | 87.10 | -17.17 |
| Total | | | | 359.58 |

Sources: Financial Services and the Treasury Bureau
Legislative Council Research Brief on the 2018-2019 Budget
Replies to Initial Questions raised by Finance Committee Members in examining the Estimates of Expenditure 2022-23 by the Secretary for Development
2023-24 Budget (revised estimate)

**Figure 1: Land Premium and Capital Works Expenditure, 1997-98 to 2022-23**



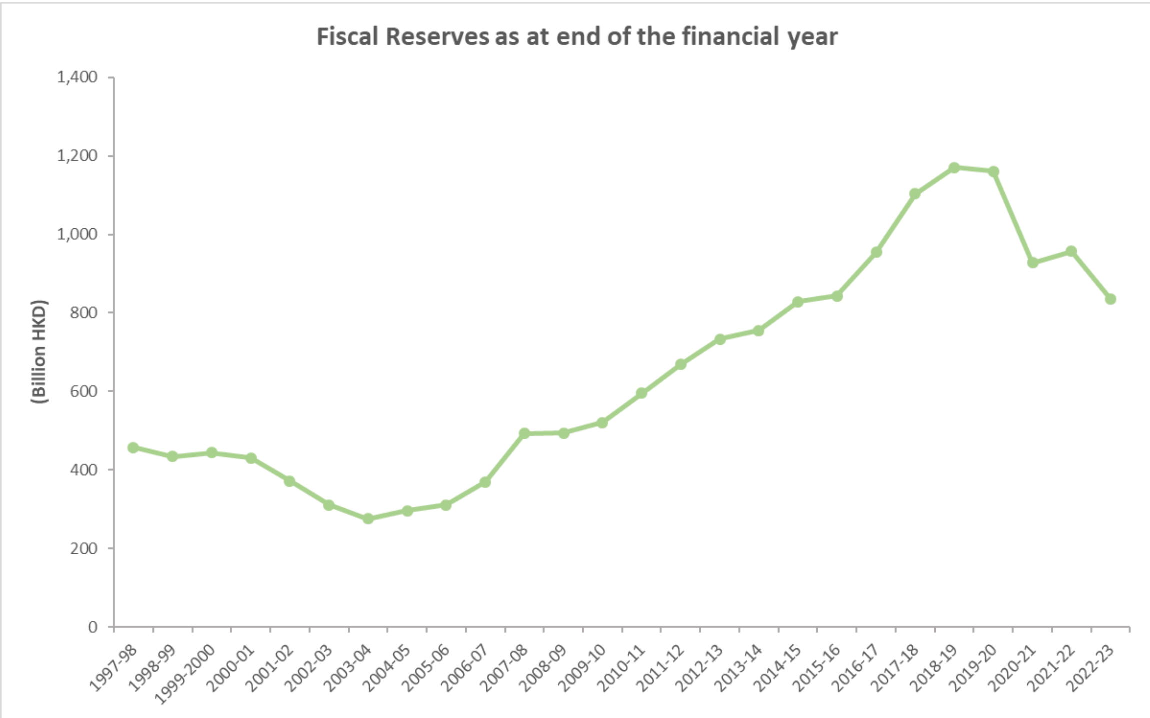

The above finding should not be surprising since land is so valuable in Hong Kong. It fetches such a high price in the market that any project that forms new land available for auction is likely to generate sufficient revenue to pay for the infrastructural construction costs. The question is whether this historical relation between land premium and capital works expenditure will continue to hold in the Kau Yi Chau and the Northern Metropolis projects. In the last 26 years, the annual capital works expenditure under the CWRF runs from about 60 billion to over 80 billion. The estimated average annual construction cost of Kau Yi Chau project is about 30 billion over 20 years. The average annual construction cost of the Northern Metropolis project is likely to be higher because of its larger scale. These costs will be additional to the annual baseline capital works cost of 60-80 billion. Even if we net out the railway development costs, which are borne by the Hong Kong Rail and subsidized by the government through the granting of land use right, and the costs of the development of Kwu Tung North, Yuen Long North and Hung Shui Kiu, which will proceed anyway without the Northern Metropolis project and therefore funded within the annual baseline capital works expenditure, the additional capital works expenditure of the two projects over and above the baseline of the last 26 years is expected to be enormous. The annual capital works expenditure could be double or even triple the current baseline level. Will the future land premium be large enough to cover the much increased capital works expenditure? Our historical analysis suggests that it will. However, a caveat is in order here. The conclusion is based on the assumption that Hong Kong land prices will continue to rise in the long term and any downturns are only cyclical. What if the current geopolitical contest between China and the United States continues for a few decades, causing structural changes in the Hong Kong property and land markets, depressing prices in the long term? It is fair to say that the future stream of land premium will be subject to a lot of uncertainty. How should the government proceed in projects whose revenue is subject to long-term uncertainty? Here, economic theory provides valuable insights in decision-making. The well-known Arrow-Lind Theorem states that the government should adopt a risk neutral attitude when making decisions to invest in public projects which have risky prospects. While the government should always take measures to mitigate risks, it should be neutral to risks and not shy away from the projects because it can always diversify the risks.

**Impact of Kau Yi Chau and Northern Metropolis on Public Finance and Fiscal Reserve**

The land creation and infrastructure projects of Kau Yi Chau and Northern Metropolis may take 15 to 20 years to complete and become mature. Capital works expenditure will be incurred right from the beginning, whereas their economic benefits from stimulated growth and land sales will not be realized until later. In the initial years there will be a surge of capital expenditure unmatched by any increase in government revenue. This will put considerable pressure on the government's financial position. In the fiscal year 2022-23, the government consolidated account incurs a deficit of $122.338 billion. It forecasts another deficit of $54.4 billion for 2023-2024 budget but given the weak economy and the property market, only two pieces of land have been disposed so far, the expected land premium for the year will fall far short of the $85 billion target in the budget. The Financial Secretary has indicated that the deficit for 2023-24 will likely be larger than the budget forecast. The fiscal reserve will therefore continue to fall.

Figure 2 shows the trend of the fiscal reserve from 1997-98 to 2022-23. The fiscal reserve reaches a peak of $1,170.9 billion in 2018-19, which is equivalent to 28 months of government expenditure. In four years, it has fallen sharply by 29% to $834.8 billion in 2022-23, which is equivalent to 12.4 months of government expenditure. The 2023-24 budget projects a further decline to $780.4 billion. As discussed above, the actual deficit for 2023-24 may well be larger. It should be pointed out that since 2019-20 the government has issued a total of $120.7 billion of bonds of various types (iBond, Silver Bond and Green Bond). Even though the revenue from bond issuance has been included as government revenue in the account, there has been a deficit in three out of the four years from 2019-20 to 2022-23. As the Kau Yi Chau and Northern Metropolis projects are launched together, it is likely that there will be further years of budget deficits, and the fiscal reserve will continue to decline. If the reserve falls below 12 months of government expenditure, it could cause unease in the financial market as to whether the government has changed its prudent fiscal policy. It will have consequences on Hong Kong's credit rating. There is no consensus as to the appropriate level of government fiscal reserve. However, a reserve equivalent to 6 months of expenditure could be a useful benchmark level, as any level below that benchmark could invite questions on whether the government has adequate cash flow to pay its bills. This is because the time profiles of government revenue and expenditure are not matched. The government usually runs a deficit in the first half of the fiscal year because most of its revenue from the taxes are receivable in the latter half of the year.

**Figure 2: Hong Kong Government Fiscal Reserves: 1997-98 to 2022-23**



**Financing Infrastructural Development with Bond Issuance**

Even though in the long term, the two land creation and infrastructure projects will generate sufficient economic benefits, tax revenue and land premium to justify their development, in the initial years the government will face a cash flow problem. To prevent the fiscal reserve from falling below a certain critical level due to the massive capital works spending in the coming years, the government should start issuing infrastructure bonds. It is a common international practice to finance infrastructure development with debt. As long as the development projects are economically viable with good paybacks, debt financing should not affect Hong Kong’s credit rating. Up to 2022-23, the Hong Kong SAR Government has issued about $120 billion of bonds. The debt-to-GDP ratio is only 4.3%. Compared to the debt-to-GDP ratios of many advanced economies, such as the U.S. (130%), Japan (260%), the United Kingdom (100%) and Singapore (160%), there is plenty of room for the Hong Kong SAR Government to borrow. As long as the borrowing is for infrastructural investment, not for financing operating expenses, Hong Kong’s high credit rating should not be affected, and the cost of debt financing should be relatively low.

The Hong Kong SAR Government has numerous options in debt financing. It can issue bonds targeting a specific infrastructure project or generic development bonds for Kau Yi Chau and Northern Metropolis. These infrastructure/development bonds can be packaged as green bonds if they meet the green criteria. The choice of options will depend on market reception. The government can choose to issue bonds in different currencies besides Hong Kong dollar, such as U.S. dollar or Renminbi as long as there is adequate foreign exchange risk management. This would be an option if the depth of the Hong Kong dollar bond market is an issue. The government has a choice of issuing bonds of different tenors. So far, the government has issued only short-term bonds of three to five years. It should use the opportunity to issue and promote medium- to long-term Hong Kong dollar denominated bonds of 10- to 30-year tenors. Bonds can be issued to institutional investors as well as to retail investors.

Besides addressing the cash flow problem, preventing the government fiscal reserve from falling below a critical level, debt financing has a number of other benefits. First, a retail sale of bonds enables Hong Kong people to become stakeholders. It promotes their involvement in Hong Kong’s infrastructure development and gives them a sense of shared future. Second, the offering of 10- to 30-year tenor Hong Kong dollar bonds will be instrumental in building up the yield curve of the Hong Kong dollar bond market. Local financial institutions such as banks and insurance companies have a strong demand to hold long-term government debt papers to match their long-term liabilities in mortgage and insurance payments. Third, issuance of a variety of bonds of different tenors will stimulate transaction volume and increase the breadth and depth of the Hong Kong bond market. It will strengthen Hong Kong's position as an international financial centre.