Can Leasing Public Land Be An Alternative Source of Local Public Finance?

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Abstract

Governments of some former socialist countries and the People's Republic of China are thinking of leasing, instead of selling, public land. One objective of land leasing is to capture the future increased land value as a government revenue for public infrastructure investment. Yet, the debate on whether or not public land leasing can help the state financially is unsettled because there is no generally agreed-upon criteria to assess the land-value-capture experience under public leasehold systems. The purpose of this paper is to suggest such criteria and apply the proposed method to evaluate the Hong Kong leasehold system. The author found that the Hong Kong Government captured about 39 percent of the land-value increments occurring between 1970 and 1991 from land leased in the 1970s. More important, the captured value financed 55 percent of the average annual infrastructure investment between 1970 and 1991. These findings indicate that land leasing can be an important source of public funds.

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Can Leasing Public Land Be an Alternate Source of Local Public Finance

Introduction

In recent years, the financing of local government expenditures has changed tremendously. Many of these changes involve the fiscal relationships between the "central" and the "local" governments. In the United States, for example, with the budget cuts initiated at both the federal and the state levels, some city governments have to rely more on revenues raised within their own jurisdictions to finance public works. Similarly, with the former Soviet Union disintegrated into different sovereign states, the newly established regimes suddenly have to face the responsibility of financing the development of their own public infrastructure and social services. In all these cases, as public funds from the central government are reduced or totally cut, local officials are searching for alternative sources of revenue. Among many proposals, local governments in some countries are trying to recoup the "surplus land value" generated partly by public-infrastructure investment.[1] Especially in some former socialist countries where most land is still under the control of the state, officials are thinking of leasing, instead of selling, public land to raise government funds.

Most scholars, such as Farvacque and McAuslan (1992, p. 43), Archer (1973, p. 8; 1994, p. 24), and Yeh (1994, p. 8) argue that the government, in principle, can capture the surplus land value by leasing public land. It is mainly because under a public leasehold system, the state retains the right to own land and lease only the right to develop land to private individuals. Yet, there is inadequate research on substantiating this belief because there is no generally agreed-upon criteria to measure the "success" of land-value capture under public leasehold systems. The purpose of this paper is to suggest such a criteria and apply the proposed method to evaluate the experience of land-value capture under the Hong Kong leasehold system. I first discuss my criteria for determining the level of success of land-value capture, which are based on two indices: (1) the percentages of land-value capture and (2) the percentages of public infrastructure investment financed by the captured value. Based on the two criteria, I then evaluate whether or not the Hong Kong government can raise funds for infrastructure investment by leasing public land.

Although I would argue that the proposed criteria work well for the Hong Kong case, its applicability to another situation will need to be determined in future studies. This paper represents only an initial step towards formulating a general method to evaluate land-value-capture experience under different land-tenure arrangements. Research in this area is important especially for land policy making in countries where officials are deciding on whether to adapt a leasehold or a freehold system to allocate land resources.

Two Criteria for Evaluating Land-Value Capture

As I mentioned earlier, some analysts believe that a leasehold system would allow the state to capture the future land-value increments because it retains the right to own land. In their studies, Yeh (1994, p. 9) and the World Bank's analysts (1993) examine the importance of "lease revenues" collected from land leasing as a percentage of the total

government budget in Hong Kong. Lease revenues are money generated by the government through leasing public land. These funds are basically collected through demanding payments from lessees when they: (1) first lease their land, (2) modify the lease conditions, (3) renew their expiring leases, and (4) pay an annual rent. Yeh argues that total lease revenues accounted for 8.6 percent of the total government budget between 1974 and 1990. The percentage for individual years range from 0.3 to 35.6 percent. Based on these figures, he then asserts that lease revenues were an important source of public funds for the Hong Kong government in selected years. Yet, this source of revenue was very unstable (Yeh, 1994, p. 20).

World Bank's analysts (1993, p. 83) take the same set of numbers for Hong Kong and argue that the experience of this city-state does not show that lease revenues generated under a leasehold system are significant. They then caution policy makers in other countries, specifically the People's Republic of China (PRC), against setting the goal of raising substantial public funds through land contracting.

I, however, argue that the percentage of lease revenues in the total government budget is not an adequate indicator to reflect the ability of the government to take back the future increases in land value. For example, if the value for all land in Hong Kong has increased, say, by HK$1 billion in a particular year, capturing 1 percent of this increase is HK$10 million. If the size of the government annual budget is small, the lease revenues collected will appear to be an important source of government revenues. Yet, in actuality, the government only captures 1 percent of a huge increase in land value through land contracting. In this case, one cannot argue that the government can recoup successfully the increased land value by leasing public land.

Conversely, the Hong Kong government may capture a large portion of the increased land value. Although the percentage of land-value capture is large, the amount of money collected may still be insignificant because of two reasons. First, the government budget is large relative to the lease revenues. Second, land prices have increased moderately; hence, the large portion of land value captured amounts only to a small sum of money. In both cases, the percentage of lease revenues in the total government budget will be small even though the state has retained a large portion of land-value increments. Analysts, therefore, cannot settle the question of whether land leasing can help the government to capture future increases in land value by looking just at the percentage of lease revenues in the total government budget.

Owing to the inadequacy of the existing method, I propose two criteria: (1) the average percentage of land value captured by a government using land leasing, and (2) the proportion of the public "infrastructure investment" financed by the captured value. (I will define infrastructure investment later.) I calculate the percentage of land value captured by dividing the total money collected from land leasing by the estimated increases in land value. Although the definition of the first criterion is straight forward, the purpose of the second criterion and its connection with the first needs explanation.

The reason for wanting to know whether or not the captured land value finances a major part of public works is related to issues of "sustainability" of public infrastructure

investment. I define a sustainable public investment as a project that generates sufficient revenue to cover its costs and, possibly, allows a “reasonable” return for governments. Because the consumption of most public infrastructure is non-exclusive and joint, the burden of investment costs may not fall directly on persons who enjoy the “benefits” of these goods. For example, a government builds a public road that enhances the accessibility of a community. The officials may not establish a system to charge the actual users of the road because it may incur high collection costs. With higher accessibility to the community than before with no additional charge, the demand for houses increases. Property values will rise. Under such a condition, the financial benefit generated by public infrastructure investment is reflected partly in higher property values. Although the government may use property taxes or other instruments to recoup part of the windfall gain, it normally does not collect as much as it could to cover the investment costs of the road. This, in turn, undermines the financial capability of the state to fund further improvements of the road or other public works.

Under a sustainable system of financing public infrastructure investment, the state should be able to get back most of the land-value increments that its projects generate. The captured land value should then pay for a large part of the infrastructure investment. Only in this way can a public agency finance continuously additional infrastructure to support the ongoing urban growth and economic development.

To illustrate my points further, I categorize the various possible combinations of the percentage of land-value capture (PLVC) and the percentage of infrastructure investment (PII) financed by the captured value into four cases. I portray these cases in Figure 1, which is a very rough summary of all possible outcomes. Pigeonholing of some borderline cases is unavoidable. I use these cases only to show the basic contrast among various mixes of PLVC and PII.

Figure 1: Percentage of Land-Value Capture and Percentage of Infrastructure Investment Financed by Land Revenues

PLVC \ PII	Small	Large
Small	I The government is not able to capture the increased land value and thus is incapable of financing infrastructure investment through internally generated funds.	II Increases in land value are large, and thus a small percentage of land-value capture can finance a large percentage of infrastructure investment.
Large	III The increases in land value are small. Although the government can capture a large percentage of land-value increments, the amount of land value captured can finance only a small percentage of infrastructure investment.	IV The state is capable of capturing a large percentage of land-value increments, and the captured value can finance a large percentage of infrastructure investment.

Source: Author

Notes:
PII = Percentage of Infrastructure Investment Financed by Land Revenues
PLVC = Percentage of Land-Value Capture

In Quadrant I, both the PLVC and the PII are small. There are three possible situations that may occur. First, the low PLVC suggests that a government can capture only a small percentage of the surplus land value. This leads to a small PII because the captured value is so insignificant that it cannot help the government to fund public works. Second, a local government may depend heavily on "external" funds to finance expenditures on public works. These external sources of money could be from loans granted by the World Bank and other foreign aid agencies or funds allocated from the central government. Land revenues, thus, account for only a small percentage of infrastructure investment. The PII is, thus, small. When public infrastructure is financed by foreign debts, revenues generated from the investment must be used to repay them. Instead of recovering the construction costs through leasing land, the government may collect a fee directly from users. Depending on the nature of the public goods, the government may encounter high collection costs of identifying the "true" users and enforcing the payment. Some experiences have shown that the state cannot recover even the costs of financing the public infrastructure. Because financial returns of a project will not be captured as land

revenues, the PLVC will be small. Third, both the PII and PLVC are small because private developers are responsible for building the public infrastructure. Some governments may ask developers to build the necessary infrastructure as part of the conditions for granting a development permit to them. In the United States, these requirements are called exactions (Altshuler and Gomez-Ibanez, 1993) or development agreements (Sagalyn, 1993). These exactions and agreements are not treated as land revenues because the state does not collect any money from developers. The PLVC is, thus, small. Because public infrastructure is constructed by private developers, the PII is also small. The sustainability of providing public infrastructure through exactions and negotiations will depend upon the bargaining positions of the government and developers. Generally, the government is in a good position to ask developers to provide public infrastructure when the real estate market is blooming. The government, however, would have great difficulties in convincing developers to spend extra money on infrastructure if the economy is in a recession.

In all situations, a small PLVC and PII signify that a government is unable to finance infrastructure investment through internally generated funds. The investment on public infrastructure depends upon a stable inflow of foreign aid, money from the central government, and/or the conditions of the economy. Any reduction of external funds and changes of market situation will affect the sustainability of public infrastructure investment that may be beyond the control of the local government. I have described briefly some changes of the fiscal relationships between the central and the local governments in the beginning of this paper, which illustrate clearly that external funds are not at all stable.

In Quadrant II, the PLVC is small, but the PII is large. Under this situation, the land value of a country may increase very fast. Owing to some large increases in land value, a small PLVC can amount to a substantial amount of money. This fund can then finance most of the infrastructure investment. In this case, public investments will be considered to be sustainable because the captured value can cover a large part of the investment costs. Yet, a small PLVC may imply that a government does not capture fully the appreciation in property values due to its investment and the general growth of the urban area. If the government takes a more aggressive approach to recoup the land value, it may obtain more lease revenues to recover further the costs of public investments.

In Quadrant III, while the PLVC is large, the PII is small. There are two possible reasons for this outcome. First, it is possible that the development of the land and real estate markets is still at an initial stage. At this stage, land value is usually low. Although the government can capture a large percentage of the land-value increments as revenues, they are insignificant because of the low land value. Second, the capturing of land value may be too aggressive, and the government does not reinvest the captured value to develop the public infrastructure. These state’s actions will discourage private investments in land. Because of the lack of private capital to develop the land market, the land value remains low. Again, although the government can take back a large portion of the surplus land value, the captured value is so low that it cannot pay for the expenditures on public works.

To make public infrastructure investment sustainable, a government should design policies that will stimulate growth by attracting both domestic and international investments in land and real estate. Simultaneously, the state should also reserve its rights to share the future capital appreciation in land with developers. Unless new policies can induce increases in land value without foregoing the state's ability to capture it, land revenues will not play an important role in financing public works.

Public infrastructure investment in the last case (Quadrant IV) is the most sustainable. Both the PLVC and the PII are large. This implies that the government can recoup most of the surplus land value and use the captured value to finance a large percentage of expenditures on public works. Under such a system, a government can balance better the revenues and costs of its projects than the above mentioned three situations. With sufficient funds collected as land revenues, the government can undertake investments and improvements in public infrastructure continuously. There will be no massive borrowing. The sources of funds will be stable and within the control of the local governments.

By analyzing the PLVC and PII, analysts will understand better whether or not land leasing can help the government financially than just relying on the percentage of land revenues in total government budget. In the rest of this paper, I evaluate the experience of land-value capture in Hong Kong based on the proposed criteria and data gathered from my "contract-based" case studies.

Contract-Based Case Studies

The contract-based case studies are some detailed examinations of 92 randomly selected land parcels leased in the 1970s in Hong Kong. In Appendix I, I state the method of selecting the sample for my study. From these cases studies, I first calculated the amount of lease revenues that the government collected from the selected land leases from 1970 to 1991. I also estimated the increased land value of the selected land parcels for the same period of time. With these two pieces of information for each land lease, I calculated the PLVC. The equation for calculating the PLVC is:

$$PLVC_i = \frac{(P\text{-}ini_i + P\text{-}mod_i + R_i) - LV70_i}{LV91_i - LV70_i}$$

where

$PLVC_i$ = percentage of land-value capture for land parcel i
$P\text{-}Ini_i$ = premium from initial public auction for land parcel i
$P\text{-}Mod_i$ = premium from lease modification for land parcel i
R_i = annual rent for land parcel i
$LV91_i$ = estimated 1991 land value for land parcel i
$LV70_i$ = estimated 1970 land value for land parcel i

Data concerning the amount of premia paid by developers are public information, and the Hong Kong Land Registry keeps all this information on microfilm. By paying a nominal

fee, I obtained the microfilms for the selected cases. From these microfilms, I summed the total premia and land rent charged for each contract and computed the 1991 value of the amount. Owing to the fact that lease terms in Hong Kong are normally 75 years, none of the cases that I selected in the 1970s expire; thus, my analysis did not include any premium for lease renewal. Based on the assumption that the government would have to borrow the money to finance infrastructure investment if it did not collect these revenues, I used the best lending rates that the Hong Kong and Shanghai Bank (the central bank in Hong Kong) offered to its major corporate clients between 1970 and 1991 as the discount rates to calculate the 1991 value of the premia and rent collected.

The second step was to estimate the increases in land value occurring between 1970 and 1991 for the selected land parcels. In Hong Kong, there are two common ways to assess the market value of land: (1) the comparable and (2) the residual methods (Roberts, 1974). Due to data limitation, I used the comparable method to assess the 1970 land value for the parcels. The comparable method is simply a direct comparison with actual sales of other land that possess the similar characteristics (such as location, size, floor areas, etc.) of the land under investigation. I obtained the auctioning prices of all land leased in 1970 and converted them into prices for per square meter of land in different locations in Hong Kong. For each selected land sites, I then calculated its 1970 land value by multiplying its land areas by the per-square-meter auctioning prices for land located in the same area.

For assessing the 1991 land value, I used the residual method. I began by estimating the 1991 market value of properties built on the selected land parcels. I then subtracted the construction costs and profits for the building contractors and developers from the estimated property value to derive the 1991 market value of land. I obtained the estimated 1991 property values for different types of buildings located in different districts and for various land uses from the Hong Kong Property Review (Rating and Valuation Department of Hong Kong, 1993). I also gathered information concerning the 1991 construction costs for various types of buildings from the 1991 Survey of Building, Construction and Real Estate Sectors (Census and Statistics Department of Hong Kong, 1993).

The residual method is far more complex than I have stated here. I simplified it to make the estimations manageable and possible with limited data. The simplifications are based on the following assumptions.

1. Property values for selected cases are equal to the average prices of the same type of buildings located in a district.
2. The construction costs for residential buildings are the same within a district. It is also true for the construction costs for commercial and industrial buildings.
3. In estimating the property values, saleable area is equal to the lot size times the plot ratio. In other words, there is no common area, such as open spaces or parking lots. This assumption may lead to an overestimation of the property value because of the increase in the saleable area in my calculation. This, in turn, will overstate the land prices.

4. When a land site is specified for residential use, there is no retail shop operating on the ground floor of the building. This assumption may lead to an underestimation of the land price because a retail shop normally has a higher property value. This underestimation will, to some extent, eliminate problems of assumption No. 3 that overstates the land value.

With these calculations, I produced two sets of estimates for each selected land parcel: (1) the total lease revenues collected from land premia and rent and (2) the estimated increased land value all in 1991 Hong Kong dollars. By dividing the total lease revenues by the estimated land-value increments, I derived the percentages of land-value capture for selected cases in my sample.

Percentage of Land-Value Capture

In Appendix II, I illustrate the estimated percentages of land-value capture for the 92 cases. These percentages range from 5 to 111 percent. On average, the government captured 39 percent of the land-value increments occurring between 1970 and 1991. Does an average of 39 percent of land-value capture within a 22-year period represent a "significant" retainment of the surplus land value? Ideally, to determine the relative significance of this percentage, I must compare this outcome with experiences of land-value capture in other cities. Yet, to conduct a comparative study is beyond the scope of this paper. There is also no existing study that uses the same method to estimate the percentages of land-value capture in other cities. Despite the lack of comparable cases, no government, as far as I know, has ever claimed that it can capture more than 50 percent of the increased land value. The percentage of land-value capture in Hong Kong, thus, seems to be large.

The argument is based on the accuracy of the 1970 and 1991 estimated land prices. For the 1970 land-value estimates, the figures are small in comparison with the total amount of lease revenues and the 1991 estimated land value. Hence, any wrong estimations of the 1970 land value will not cause any significant error in the calculation of the PLVC.

To test how sensitive the calculation of the PLVC is to errors of estimating the 1991 land prices, I increased and decreased these estimates by 5 and 10 percent. Table 1 shows the impacts of changing the land-value estimates on the average percentage of land-value capture.

Table 1: Sensitivity Analysis of the Estimated 1991 Land Values (percent)

Percentage Change in the Estimated Land Values		Estimated Percentage of Land-Value Capture	
		Actual Estimates	Changes
	Original with No Change:	39.1	
For the 1991 Land Value			
Increase by:			
10		35.5	(3.6)
5		37.2	(1.9)
Decrease by:			
10		43.4	4.3
5		41.2	2.1

Increasing the 1991 land prices by 10 percent decreases the percentage of land-value captured by 3.6 percent. Reducing the land prices by 10 percent will increase the percentage by 4.3 percent. Effects of a 5-percent increase or decrease in the estimated land prices will not exceed 2.1 percent. Results of the sensitivity test indicate that if my calculations for the 1991 land prices are not over- or under-estimated by more than 10 percent, the average percentage of land-value capture will fall within the range of 36 to 43 percent. These results indicate that errors within the range of 10 percent in estimating the land values do not significantly affect the calculation of the average percentage of land-value capture.

To analyze the data at a less aggregate level, I examined the estimated percentages of land-value capture for land sites located in different districts and for various land uses. I summarize the results in Table 2. By arranging the percentages by district and land use, I am not trying to draw conclusions on what the percentages of land-value capture will be for these categories. To do that, I need to construct a stratified random sample for different districts. My purpose of presenting these figures is to analyze further how the percentages for these different categories deviate from the overall mean. This, in turn, shows how instrumental the estimated average percentage of land-value capture is.

Table 2: Percentages of Land-Value Capture for Selected Land Sites

District	Residential			Offices			Retails	Hotel	Industrial & Godown	Supermarket	Bus Terminal	District **	Average
	A	B	C	A	B	C							
COMMERICAL DISTRICTS:													
In Hong Kong Island													
Shueng Wan	48.0			47.6	60.8	58.0		50.8*				54.8	
Central								36.2*			55.7*	45.9	
Wai Chai				6.6*								6.6	34.2
In Kowloon													
Tsim Sha Tsui				11.7			39.7	61.1*				29.6	
RESIDENTIAL DISTRICTS:													
In Hong Kong Island													
Western	7.9*											7.9	
North Point	29.5	31.1	21.7*		30.0*				16.1*	41.8*		29.2	
Causeway Bay	20.3									30.8*		22.4	
Abredeen										20.5*		20.5	
In Kowloon													
Yau Ma Tei	49.0	78.9										61.8	42.6
Mong Kok	57.3											57.3	
Hung Hom			90.1*									90.1	
Ho Man Tin	32.6*											32.6	
In New Kowloon													
Kowloon Tong	42.2	39.9										41.0	
Shek Kip Mei		44.5*	72.9									63.4	
INDUSTRIAL DISTRICTS:													
In New Kowloon													
Kwun Tong	12.9	11.6*							13.9			12.7	
Cheung Sha Wan									13.9			13.9	13.3
Land uses **	35.4	57.7	64.4	30.8	50.6	58.9	(39.7)	49.9	13.8	31.0	(55.7)	39.1	
Average		52.5			46.8								

Note: * There is only one observation for the corresponding district and land use in the sample.
** Figures in the Land Use row and District column are not the weighted average of the numbers presented in the table.
Blank cell indicates that there is no observation for the corresponding district and land use in the sample.

Source: The author calculated these percentages using data gathered from 92 land sites selected from all contracts issued in Hong Kong between 1970 and 1979 (Appendix II).

Between 1970 and 1991, the government captured approximately 35 percent of the increases in value for selected land sites leased for the development of Class A residential buildings. The classification of residential property is based on the saleable floor area as follows (Commissioner of Rating and Valuation, 1992, ANNEX F):

Class A—saleable area not exceeding 39.9 m^2

Class B—saleable area of 40 m^2 to 69.9 m^2

Class C—saleable area of 70 m^2 to 99.9 m^2

Class D—saleable area of 100 m^2 to 159.9 m^2

Class E—saleable area of at least 160.0 m^2

For land sites used for Class B residential development, the government retained 58 percent of the land-value increments. For Class C, the percentage was 64 percent. On average, the percentage of land-value capture for residential land sites was 52 percent. It was about 12 percent larger than the overall average of 39 percent.

The percentages of land-value capture for Class A, B, and C office buildings were 31, 51, and 59 percent, respectively. The classification of office buildings is based on the average size of the floor area of the property. Office buildings that have an average size of 354, 84, and 47m^2 are classified as Class A, B, and C properties, accordingly. In other words, the percentage of land-value capture for the smaller office buildings was larger than bigger commercial properties. This is mainly because small firms dominate the Hong Kong economy. Hence, demand for smaller sized offices has been growing faster than the demand for larger offices. Due to the excess demand, developers are willing to pay a high premium to lease commercial sites zoned for small-sized-office development in the public auctions. This, in turn, allows the government to capture a higher percentage of land-value increments. The average percentage for land used for office buildings was 47 percent, which was reasonably close to the overall average.

For industrial land sites, the percentages were small. They were about 14 percent for industrial land sites located either in Kwun Tong and Cheung Sha Wan. I can explain these results by the general land policy in Hong Kong. To stimulate industrial development, the government-leased land to industrialists at a low premium and that, in turn, led to a slower increase in industrial land prices. It is, thus, not surprising to see that the percentages of land-value capture were relatively smaller from industrial land sites than land parcels for other types of land use.

In terms of the different districts, the average percentage of land-value capture in the commercial areas, such as Sheung Wan, Central, Wai Chai, and Tsim Sha Tsui, was about 34 percent. For the residential districts, the average percentage was 43 percent. Some districts, such as Yau Ma Tei, Mong Kok, and Shek Kip Mei, had approximately 60 percent of the surplus land value captured by the government. I excluded Hung Hom because there is only one observation for this district in my sample. Among these

residential districts, the closer a district was to a commercial or an industrial center, the higher the percentages.

In sum, the percentages of land-value capture for various types of land in different locations are reasonably close to the overall average of 39 percent. The only exception is the land sites used for industrial purposes. After estimating the proportion of the increased land value the government captured through land leasing, we still need to know how significant the captured value is in financing infrastructure investment.

The Role of Land Revenues in Infrastructure Investment

In Hong Kong, the captured land value by leasing land only accounts for a portion of the total land revenues. Here, I define land revenues as the total money collected from the property tax, rate, rent, and land premia. A rate is money collected from owner-occupied premises, and it is determined based on the estimated rental value of the property. The property tax is levied on income earned from commercial real estate. Currently, the standard rate of the property tax is set at 17 percent. Lease revenues are, thus, not a substitute for the property tax and rate in Hong Kong. Leasing public land, in theory, provides additional ways for the government to capture the land-value increments.[2] The Hong Kong case indicates that collecting money from lessees are not necessarily incompatible with the imposition of property taxes that the government must use either one or the other.

In Table 3, I show that between 1970 and 1991, the average annual amount of the property tax and rate collected accounted for 31 percent of the average annual land revenues. The lease revenues, which are composed of land rent and premia received from the initial auctions, lease modifications, and renewals, accounted for the remaining 69 percent. This percentage, however, may underestimate the significance of lease revenues in total land revenues. According to the 1984 Sino-British Joint Declaration, starting from 1985, the PRC government is keeping half of the revenues generated from land leasing for future infrastructure investment. The retained revenues were not included in the data that I gathered from government publications.

Table 3: Land and Lease Revenues in Hong Kong, 1970-1991 (Million of U.S. Dollars)

Type of Land Revenues	Average Annual Amount	Percentage of Average Annual			
		Total Land Revenues	Total Local Government Revenues	Total Local Government Expenditures	Total Infrastructure Expenditures
Property tax	130	9.1	1.8	2.0	7.2
Rates	307	21.5	4.3	4.7	17.1
Lease Revenues	990	69.4	14.0	15.1	55.2
Total	1,427.0	100.0	20.1	21.7	79.6

Sources:

Annual Report of the Director of Accounting Services and the Accounts of Hong Kong. 1970-1992. Hong Kong; Hong Kong Government Printer.
Annual Review for the Financial Year by the Commissioner of Inland Revenue of Hong Kong. 1970-1992. Hong Kong; Hong Kong Government Printer.
Hong Kong Annual Report. 1970-1992. Hong Kong: Hong Kong Government Printer.

For infrastructure investment, I included spending on highways, land, the airport, seaports, parks and other recreational activities, parking facilities, utilities, water and sewage, housing, and environmental protection. I emphasize these types of government investments because part of the increases in land value is due to these expenditures in public works. The government, therefore, has legitimacy in recouping a portion of the land-value increments generated by these investments.

In Table 3, I also show that the average annual land revenues generated from the property tax and rate were, on average, 24 percent of the infrastructure investment in Hong Kong annually. The funds raised annually by leasing public land covered an average of 55 percent of the public-work expenditures. Combining these two main categories of land revenues, they financed about 80 percent of the average annual infrastructure investment between 1970 and 1991.

In order to estimate the relative significance of the percentage of land revenues in public infrastructure investment in Hong Kong. I compared the data for Hong Kong with those for other cities. I calculated the percentage of land revenues in infrastructure investment for Singapore and seven cities in the United States, namely, Washington, DC, New York City, Chicago, San Francisco, Philadelphia, and Los Angeles. I picked these cities because they all had an average annual government budget amounted to more than US$2 billion between 1970 and 1991. Besides, all these cities (except New York City and Washington, DC) spent, on average, from US$1 to 4 billion annually on infrastructure. (All monetary values are in constant 1991 U.S. dollars, unless otherwise indicated.)

For the U.S. cities, due to data limitations, land revenues include only property taxes and funds collected from special assessments. Lease revenues are an insignificant source of funds for these cities because very few local governments in the United States use land

leasing to allocate public land. For Singapore, I obtained figures for both property taxes and income from land sales. Because the Singapore government does not lease all public land, I do not have data to separate lease revenues from the total land revenues. I, therefore, treat the total amount as land revenues here. To calculate the infrastructure investment for the selected cities, I employed the same definition as for Hong Kong.

I am not trying to determine whether Hong Kong can finance a higher percentage of public works than in selected cities. This would require a careful comparison between Hong Kong and these cities, which is not easy for three reasons. First, the most common problem is the lack of relevant data. Information about government revenues and expenditures at the city level is usually not available. If these data are available, they are mostly from different sources. This, in turn, creates the problem of consistency in comparing these data.

Second, different countries may have different definitions for land revenues and infrastructure investment. In the United States, for example, revenues generated from "exaction" are not counted as part of the property taxes. They are usually referred to as "impact" or "development" fees (Altshuler and Gomez-Ibanez, 1993, pp. 3-6). More importantly, exactions may be in-kind. In-kind exactions require developers to construct public facilities, such as roads and parking spaces, as a condition to obtain the development permits. These in-kind and monetary "receipts" by the city governments usually do not show up as land revenues. In other words, if land revenues as a percentage of infrastructure investment appears small for some U.S. cities, it may only mean that these city governments rely on the private provision of public infrastructure.

Third, in Hong Kong, the government is solely responsible for all infrastructure investment. Yet, cities in other countries may rely partly or totally on the support of the central government. Again, if the percentages are small in the U.S. cities, it does not suggest that the city governments cannot capture the land-value increments as revenues for infrastructure investment. These governments may just not have to raise the money for this investment. All these factors, therefore, make cross-city comparisons difficult. In view of these difficulties, the inclusion of selected cities in my analysis is to highlight the experience of Hong Kong by showing what is happening in other places in the world and not to draw any conclusion from the comparison.

In Table 4, I present the results of my calculation. As I mentioned earlier, between 1970 and 1991, land revenues as a percentage of the Hong Kong government annual infrastructure investment were, on average, about 80 percent. For Singapore, Chicago, San Francisco, and Philadelphia that had a similar amount of annual infrastructure investment to Hong Kong between 1970 and 1991, the differences in the percentages of land revenues in public-works expenditures between Hong Kong and these cities were dramatic. Only Singapore could support about 62 percent of its annual expenditures on public works. For Chicago, San Francisco, and Philadelphia, the percentages were only 43, 37, and 21 percent, respectively.

Table 4: The Importance of Land Revenues in Government Revenues, Total Expenditures and Infrastructure Expenditures for Selected Cities (Million of 1991 U.S. Dollars)

City	Years	Average Annual Total Land Revenues	Average Annual Total Local Government Revenues	Average Annual Total Local Government Expenditures	Average Annual Total Local Infrastructure Expenditures	Average Annual Land Revenues as a Percentage of Average Annual		
						Total Local Government Revenues	Total Local Government Expenditures	Total Local Infrastructure Expenditures
Hong Kong	1970-1991	1,427.0	7,091.6	6,565.6	1,793.4	20.1	21.7	79.6
Singapore	1972-1991	994.7	5,329.0	4,095.8	1,615.6	18.7	24.3	61.6
New York City, New York	1970-1991	6,436.1	34,518.5	33,341.6	10,902.4	18.6	19.3	59.0
Washington, D.C.	1970-1991	512.4	3,658.8	3,862.6	893.7	14.0	13.3	57.3
Chicago, Illinois	1970-1991	657.6	3,295.2	3,239.4	1,524.3	20.0	20.3	43.1
San Francisco, California	1970-1991	443.8	2,464.6	2,310.1	1,201.1	18.0	19.2	36.9
Philadelphia, Pennsylvania	1970-1991	337.0	3,121.7	3,178.4	1,621.8	10.8	10.6	20.8
Los Angeles, California	1970-1991	611.9	4,893.1	4,562.2	3,939.5	12.5	13.4	15.5

Sources:

(1) Hong Kong
Annual Report of the Director of Accounting Services and the Accounts of Hong Kong. 1970-1992. Hong Kong: Hong Kong Government Printer
Annual Review for the Financial Year by the Commissioner of Inland Revenue of Hong Kong. 1970-1992. Hong Kong: Hong Kong Government Printer
Hong Kong Annual Report. 1970-1992. Hong Kong: Hong Kong Government Printer

(2) Cities in the United States
U.S. Bureau of the Census, Department of Commerce. From 1971 to 1992. *City Government Finances in 1990-1991*. Washington, D.C.: U.S. Government Printing Office.

(3) Singapore
International Monetary Fund. 1991 and 1981. *Government Finance Statistic Yearbook.*Vol. XV and V. Washington, D.C.: International Monetary Fund.

Notes:

Monetary values of these figures are converted to 1991 value using Consumer Price Indexes from:

a. Asian Development Bank. Economics Office. 1986 and 1991. *Key Indicators of Developing Member Countries of ADB.* Vol. XVII and XXII. July 1986 and July 1991.

b. Census and Statistics Department, Hong Kong Government. From 1970 to 1992. *Consumer Price Indexes.* Hong Kong: Hong Kong Government Printer.

c. U.S. Bureau of the Census, Department of Commerce. 1992, 1988, 1975 and 1973. *Statistical Abstract of the United States.* Washington, D.C.: The U.S. Government Printing Office.

Of the other U.S. cities, the New York City had the largest percentage, which was 59 percent. Yet, New York City is not a good comparison with Hong Kong because its infrastructure investment were US$10.9 billion, which was about ten times larger than Hong Kong (US$ 1.8 billion). Los Angeles spent, on average, about US$3.9 billion on infrastructure annually. It had the smallest percentage of land revenues in total infrastructure investment, which was about 16 percent.

The percentage of land revenues in total government budget in Hong Kong was also larger than selected cities. Between 1970 and 1991, land revenues in Hong Kong accounted for 20 percent of the total government budget. Chicago had a similar percentage. For the other cities, the percentages ranged from 19 percent (for New York City and Singapore) to only 11 percent (for Philadelphia). For the average total expenditures, the percentages for Hong Kong and Singapore were 22 and 24 percent, respectively. Among selected cities, New York City, Chicago, and San Francisco could finance close to an average of 20 percent of their total annual local expenditures by land revenues.

All this information, though scattered, indicates that land revenues in Hong Kong play an important role in financing total government expenditures, in general, and infrastructure investment, in particular. Specifically, given the statistics of these major cities in other parts of the world, the percentage of land revenues in public infrastructure investment in Hong Kong appears to be large. Because payments received through land leasing accounted for 69 percent of the total land revenues, I argue that the value captured from land contracts played an important role (about 55 percent of the total investment costs) in financing public works.

Conclusion

After constructing the percentage of land-value capture and the percentage of land revenues in public infrastructure investment for Hong Kong, I combine these two indicators and place the outcomes in one of the quadrants in Figure 1. I discovered that the Hong Kong government captured, on average, 39 percent of the land-value increments occurring between 1970 and 1991 from land leased in the 1970s. This percentage seems to be large because I do not aware of any government that can capture more than 50 percent of the land-value increments using either property taxation or other instruments. Besides, this captured value accounted for a large proportion (69 percent) of the total land revenues for the same period. More importantly, payments received from land leasing paid about 55 percent of the average annual infrastructure investment in Hong Kong. Combined with the money collected from the property tax and rate, the Hong Kong government was capable of funding 80 percent its annual public-works expenditures by land revenues.

Based on these results, I place Hong Kong in Quadrants IV in that public investments are considered to be sustainable. This finding is consistent with the past fiscal experience of Hong Kong. The government did not borrow any money from the World Bank or other international aid agencies. Major public infrastructure projects have been financed either by government land revenues or internally generated funds. Applying the proposed

criteria to the Hong Kong case, I conclude that leasing public land has been a major source of government revenues for funding public infrastructure investment in this city-state.

Although the Hong Kong case shows that local governments may be able to raise funds by leasing public land, it is not a sufficient reason for other governments to implement a public leasehold system. It is mainly because government may employ land leasing to achieve two other policy objectives besides the capturing of the surplus land value. First, it can use the conditions specified in the land contracts to manage urban growth. Second, through granting land rights to special industries and nonprofit organizations with premia at below market value, the government can stimulate economic development and provides vital social services and infrastructure for the population.

These three policy objectives are related with each other. Accomplishing one of these goals may, sometimes, have to be at the expense of the others. For example, the amount of premia that the government can obtain from a land contract is influenced by the restrictions imposed on the lease. If the conditions of a contract restrict the height of the development to six stories, land developers will obviously pay less for this contract than for the contract that would allow them to build a 20-story building. The aim of raising revenues could, therefore, be incompatible with the objective of directing the urban growth toward a low-density development. Besides, when the government subsidizes special industries by granting land rights with premia at below market value, it will lose the opportunity to capture the land-value increments for other public services and investments. It may not be possible to achieve all three policy objectives simultaneously. For policy makers who are thinking of adapting a public land leasing, a comprehensive understanding of the potential difficulties in achieving various objectives is indispensable before implementing such a land-tenure arrangements.

Notes

1. Surplus land value is the portion of the increased land value that is generated by changes in government land-value regulations, public investments in infrastructure, urbanization, location advantages, and/or population growth. This land value does not include the part of the increase that is attributable to capital invested in land by private individuals, including the allowances for interest costs and risks. Surplus land value is also referred to as land-value increment. I will use these terms interchangeably here.

2. For a discussion of the four land-value-capture mechanisms available under the Hong Kong leasehold system and their viability of recouping the surplus land value, see Hong (1996).

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Appendix I: Selecting the Sample for the Contract-Based Case Studies

There were approximately 27,268 parcels of land in Hong Kong in 1991; and for each parcel, the government issued a land contract to specify the type and the amount of development rights granted to private developers. Among all these land sites, I concentrated on those that the government leased to private developers through the "Conditions of Sale" between 1970 and 1979. From these land contracts, I gathered data about the total amount of premia collected by the government when it leased land initially to developers in public auctions and subsequently modified and renewed land leases. In Hong Kong, when leaseholders modified their land contracts, the government attached a "letter of modification" to the back of their leases (or the Conditions of Sale). If lessees renewed their leases, they surrendered the old leases to the government. For the nonrenewable leases, the government then issued a "Conditions of Regrant" to them. It is therefore most logical to begin with the Conditions of Sale to examine any subsequent changes or renewals of land contracts.

There are three reasons for selecting land sites leased between 1970 and 1979. First, the demand for land before 1970 was mainly from the industrial sector. The priority of the Hong Kong land policy then was to promote industrial development, and the government disposed of land for industrial purposes partly through "private treaty" grants. Land premia charged for the private treaty grants were normally lower than the current market value of the leased land. Because the government might deliberately lower the premia to stimulate industrial development, this action had a dampening effect on prices for industrial land leased through the Conditions of Sale in public auctions. Industrial land sites leased before 1970 are, therefore, not good examples to learn whether land leasing would enable the government to capture the land-value increments. From the beginning of the 1970s, the demand for land began to shift from industrial to commercial and residential purposes (Annual Yearbook, 1969). Normally, the government charged premia for both commercial and residential land sites at the full market value. Hence, a sample selected after 1969 is not only a good mix of land contracts for different land uses, but also best represents the ability of the government to capture the surplus land value.

Second, beginning in the 1970s, after years of experience in developing the leasehold system, the Hong Kong government could use land contracts in a very sophisticated way. The government was more conscious about using land leasing to share with developers the financial benefits of the rapidly increasing land value. On the contrary, some land contracts issued in the 1940s and the 1950s had no well-specified conditions attached. They are sometimes called "open" or "unrestricted" leases. Without any explicit restrictions imposed on these contracts, the ability of the government to capture the increases in land value is undermined. For instance, a developer may not have to pay an additional premium for, say, increasing the height of the building up to the limit allowed by the Outline Zoning Plan because the government did not specify a height restriction in the land contract. To get a good sample for a "mature" land-leasing system, I decided to concentrate on the land contracts established after 1969.

Third, in the 1980s, the return of the sovereignty of Hong Kong to the PRC in 1997 significantly affected the land revenues collected by the Hong Kong government. For instance, after the signing of the Sino-British Joint Declaration in 1984, the Hong Kong government, in principle, cannot lease more than 50 hectares of land per year. If the government wants to lease more land, it would have to consult a Land Commission which is composed of officials representing the United Kingdom and the People's Republic of China. Although the amount of new land leased for the past ten years have been over 50 hectares, this restriction on land supply might raise the amount of premia that developers are willing to pay for the leases at the public auctions. This political event is unique. Hence, a sample gathered at this period may not be a good representative to illustrate the government's ability to capture the increased land value.

After I decided which land leases should be included in my study, I studied these contracts for 22 years. Specifically, I estimated the increases in land value occurring between 1970 and 1991 for selected land sites. There are two reasons for choosing a 22-year study period. First, to observe whether or not the government can recoup the surplus land value when lessees modify their land contracts, I must examine these leases for a period long enough to allow for the inclusion of lease modifications. Because the building cycles in Hong Kong last about six to ten years (Jao, 1974, p. 251), I must study these land contracts for more than ten years to investigate if the government can recoup land-value increments through lease modifications. For contracts issued in the late 1970s, I have to study them from the dates that they were issued to, at least, 1991.

Second, for land contracts established in the 1970s, the government allowed lessees to pay land premia in 20 annual installments. In other words, the collection of land revenues from these contracts stretched from the 1970s to the 1990s. To analyze how much infrastructure expenditure was financed by land value captured by these leases, I must also examine the percentages of lease revenues in annual infrastructure investment in the 1980s. If I concentrate only on the period between 1970 and 1979, I will underestimate the percentages of infrastructure investment financed by revenues generated from land leased in the 1970s. Data for revenues collected in the 1980s from official documents will include the premia and rent collected from contracts granted after the 1970s. This may then overstate the percentages of infrastructure investment supported by lease revenues generated in the 1970s. Yet, the overestimation may not be a significant problem. According to the Sino-British Joint Declaration, the future government retains half of the land revenues. Under this situation, infrastructure investment in the 1980s might still rely mostly on revenues collected from land leases established in the 1970s.

After I decided the period for my study, I examined a register compiled by the Hong Kong Land Registry that lists all land leased through the Conditions of Sale between 1970 and 1979. Within that period, the government leased 423 parcels of land. I selected 120 land sites randomly (every fifth on the list) and eliminated 28 of them because of incomplete information or unavailability of the actual land contracts. The total number of cases in my sample is, therefore, 92. The total number of the cases selected accounts for 21.7 percent of all land leased between 1970 and 1979. Besides, all selected cases are land lots located in the Hong Kong Island and Kowloon Peninsula. My study, thus, did not include land sites in the New Territories which is the less urbanized area in Hong

Kong. Although the number of cases in my sample is small (only 0.3 percent) in relation to the total number of land contracts in Hong Kong, the sample is still a good representation for the land leases issued in the 1970s when the Hong Kong leasehold system was most well-developed and absent from unique political disturbances.

Appendix II: Land Contracts Selected for the Contract-Based Case Studies

File Name	Lot Number	Location	District	Land use	Classi-fication of sites	Plot Ratio	Area (sq. M.)	Date of Issue	Lease Revenues			Rent	Total Lease Revenue (1991 HK$)	Estimated Land Value At 1991 (1991 HK$)*	Estimated Percentage of Land-Value Capture
									Premia						
									Initial	Modification	Total				
									(HK Dollars value at date of issue)						
C/S11233	IL8469	Queensway, Central	Central	Bus terminal	C	18.000	3,983.0	08/04/78	585,000,000		585,000,000	1,000	2,262,731,281	4,064,555,350	56%
C/S11253	KIL10602	Tsim Sha Tsui East	Tsim Sha Tsui	Hotel	C	12.000	2,150.0	09/29/78	175,000,000		175,000,000	1,000	676,902,084	1,564,381,968	61%
C/S10225	IL8294	Harcourt Rd., Central	Central	Hotel	C	10.000	3,362.5	05/16/72	105,000,000		105,000,000	8,306	658,167,527	1,818,777,791	36%
C/S11242	IL8392	Jun. of Harbor Rd. & Fleming Rd., S.W.	Sheung Wan	Hotel	C	9.630	6,062.0	09/13/78	415,000,000	8,999	415,008,999	1,000	1,605,226,118	3,157,661,488	51%
C/S10583	NKIL5566	Lai Chi Kok Rd, C.S.W.	C.S.W.	Ind./Godown	C	10.400	1,389.4	02/08/74	4,300,000	1,032,136	5,332,136	1,000	23,478,664	145,229,591	16%
C/S10801	NKIL5623	Cheung Sha Wan & Lai Chi Kok Rd	C.S.W.	Ind./Godown	C	10.400	1,441.4	08/08/75	4,450,000	952	4,450,952	1,000	20,384,569	150,669,629	14%
C/S10673	NKIL5589	Cheung Sha Wan & Lai Chi Kok Rd	C.S.W.	Ind./Godown	C	10.000	2,500.9	07/12/74	5,050,000		5,050,000	1,000	24,721,337	251,358,907	10%
C/S10775	NKIL5490	Cheung Sha Wan & Lai Chi Kok Rd	C.S.W.	Ind./Godown	A	10.000	991.6	04/18/75	2,100,000		2,100,000	1,000	10,303,809	99,665,535	10%
C/S10532	NKIL5539	Cheung Sha Wan Rd, C.S.W.	C.S.W.	Ind./Godown	A	10.000	1,301.1	11/09/73	4,800,000	64,401	4,864,401	1,000	26,320,433	130,770,149	20%
C/S10547	NKIL5540	Cheung Sha Wan Rd, C.S.W.	C.S.W.	Ind./Godown	A	10.000	1,301.1	11/30/73	4,500,000		4,500,000	1,000	24,369,654	130,770,149	19%
C/S10691	NKIL5493	Lai Chi Kok Rd., Cheung Sha Wan	C.S.W.	Ind./Godown	A	10.000	1,398.7	08/09/74	2,500,000	61,469	2,561,469	1,000	12,620,461	140,577,910	9%
C/S10151	IL7954	King's Rd., North Point	North point	Ind./Godown			697.0	03/20/72	1,620,000	24,316	1,644,316	688	10,344,690	64,284,851	16%
C/S9624	KIL9674	Chi Kiang St., Kwun Tong	Kwun Tong	Ind./Godown		10.000	621	02/16/70	860,000		860,000	246	6,271,312	62,461,427	10%
C/S9607	KIL9673	Chi Kiang St., Kwun Tong	Kwun Tong	Ind./Godown		10.000	480	01/19/70	980,000		980,000	190	7,140,070	48,198,141	15%
C/S9601	KIL9678	Yuk Yat St., Kwun Tong	Kwun Tong	Ind./Godown		10.000	1,060	12/22/69	2,120,000		2,120,000	420	15,446,492	106,577,671	14%
C/S9653	KIL9679	Yuk Yat St., Kwun Tong	Kwun Tong	Ind./Godown		10.000	1,029	03/16/70	1,770,000		1,770,000	406	12,900,229	103,401,825	12%
C/S10963	IL8415	Upper Lascar Row & Hollywood Rd.	Sheung Wan	Offices	C	9.500	289.0	09/24/76	4,950,000		4,950,000	1,000	21,320,881	65,455,649	33%
C/S10878	IL8403	Upper Lascar Row & Hollywood Rd.	Sheung Wan	Offices	C	12.000	371.7	01/09/76	6,800,000		6,800,000	1,000	31,124,384	98,890,959	38%
C/S11244	IL8453	Upper Lascar Row, Sheung Wan	Sheung Wan	Offices	C	9.538	634.0	09/13/78	30,000,000	415,706	30,415,706	1,000	117,782,099	144,169,124	82%
C/S11211	IL8454	Upper Lascar Row & Lok Ku Rd	Sheung Wan	Offices	C	9.538	730.9	06/21/78	30,750,000	13,359	30,763,359	1,000	126,026,465	166,203,805	76%
C/S11066	IL8389	Gloucester Rd. & Harbor Rd., S. W.	Sheung Wan	Offices	C	11.050	4,943.0	05/11/77	140,000,000	3,931,318	143,931,318	1,000	615,542,587	1,302,202,637	47%
C/S11100	IL8429	Queen's Rd. ctrl & Low Lascar Row	Sheung Wan	Offices	C	11.330	211.0	07/25/77	5,000,000	80,753	5,080,753	1,000	20,851,033	56,995,169	37%
C/S11340	IL8497	Queen's Rd., Sheung Wan	Sheung Wan	Offices	C	11.267	1,176.0	07/13/79	79,000,000		79,000,000	1,000	271,149,159	315,885,531	86%
C/S11282	IL8486	Queen's Road, West, Sheung Wan	Sheung Wan	Offices	C	11.290	1,299.0	01/09/79	62,000,000		62,000,000	1,000	239,832,086	349,646,170	69%
C/S10974	IL8390	Gloucester Rd. & Harbor Rd., S. W.	Sheung Wan	Offices	C	15.000	4,340.4	11/30/76	120,000,000	405,890	120,405,890	1,000	517,897,562	1,552,196,486	45%
C/S11049	IL8426	Queen's Rd Ctrl & Low Lascar Row	Sheung Wan	Offices	C	11.328	1,779.4	04/29/77	53,000,000		53,000,000	1,000	227,978,397	480,565,411	47%
C/S11279	IL8480	Queen's Road, Central, Sheung Wan	Sheung Wan	Offices	C	12.000	861.0	12/11/78	49,000,000		49,000,000	1,000	189,549,697	246,325,901	77%
C/S11194	IL8413	Hollywood Rd., Sheung Wan	Sheung Wan	Offices	C	10.333	623.0	04/25/78	25,000,000	848,916	25,848,916	1,000	105,946,051	153,475,889	71%
C/S11265	IL8412	Jun. of Hollywood & Possession St.	Sheung Wan	Offices	B	10.000	127.0	10/30/78	4,800,000		4,800,000	1,000	18,589,573	35,788,896	52%
C/S10005	IL8266	Electric Rd. & Wing Hing St., North Point	North point	Offices	B	5.000	259.9	09/27/71	2,100,000		2,100,000	256	13,168,449	43,862,120	30%
C/S11062	IL8425	Lower Lascar Row, Sheung Wan	Sheung Wan	Offices	B	5.000	97.0	05/11/77	2,200,000	8,883	2,208,883	1,000	9,531,200	13,667,413	70%
C/S10635	KIL10275	938 Canton Rd, T.S.T.	Tsim Sha Tsui	Offices	A	5.000	67.5	05/10/74	100,000		100,000	1,000	586,109	6,611,893	9%
C/S10884	IL8402	Upper Lascar Row & Hollywood Rd.	Sheung Wan	Offices	A	10.000	436.8	02/13/76	9,500,000		9,500,000	1,000	43,468,353	128,927,057	34%
C/S10727	KIL10274	810 Canton Rd. T.S.T.	Tsim Sha Tsui	Offices	A	5.000	70.5	11/29/74	135,000		135,000	1,000	700,270	6,912,434	10%
C/S10185	IL8300	117 Wai Chai Rd., Wai Chai	Wai Chai	Offices	A	10.000	106.7	04/14/72	570,000		570,000	80	3,574,890	53,842,978	7%
C/S10083	KIL9909	130 Austin Rd, T.S.T.	Tsim Sha Tsui	Offices	A	3.500	1,394.1	11/26/71	840,000		840,000	346	5,281,198	95,626,554	6%

File Name	Lot Number	Location	District	Land use	Classi-fication of sites	Plot Ratio	Area (sq. M.)	Date of Issue	Lease Revenues			Rent	Total Lease Revenue (1991 HK$)	Estimated Land Value At 1991 (1991 HK$)*	Estimated Percentage of Land-Value Capture
									Initial	Premia Modification	Total				
									(HK Dollars value at date of issue)						
C/S10628	KIL10216	10 Observation Court, T.S.T.	Tsim Sha Tsui	Offices	A	5.000	106.4	04/26/74	420,000		420,000	1,000	2,315,822	10,427,848	22%
C/S10888	IL8401	Hollywood Rd., Sheung Wan	Sheung Wan	Offices	A	10.000	204.5	03/05/76	3,400,000		3,400,000	1,000	15,580,126	60,348,835	26%
C/S11362	IL8506	2A New St., Sheung Wan	Sheung Wan	Offices	A	5.000	95.5	11/26/79	2,700,000	389,185	3,089,185	1,000	10,355,085	14,093,922	73%
C/S11373	IL8536	Bonham Rd., Sheung Wan	Sheung Wan	Offices	A	5.900	42.7	12/12/79	1,750,000		1,750,000	1,000	6,026,330	7,435,983	81%
C/S11084	IL8424	Queen's Rd Ctrl & Low Lascar Row	Sheung Wan	Offices	A	9.860	590.2	06/07/77	16,000,000	2,290,671	18,290,671	1,000	78,862,295	171,764,972	46%
C/S10909	IL8414	Upper Lascar Row & Hollywood Rd.	Sheung Wan	Offices	A	10.000	380.1	04/23/76	6,100,000	142,380	6,242,380	1,000	28,578,742	112,193,971	25%
	IL8267	King's & Fortness Hill Rd, North Point	North point	Residential	B	6.000	2,364.3	09/27/71	30,300,000		30,300,000	1,168	189,858,635	471,707,427	72%
C/S11113	KIL10547	Ko Shan Rd., Kowloon City	Hung Hom	Residential	C	10.630	490.0	08/26/77	10,200,000	367,137	10,567,137	1,000	43,395,796	102,362,536	90%
C/S10650	IL8358	Cloud View Rd, North Point	North Point	Residential	C	5.000	2,020.4	05/31/74	8,900,000	75,488	8,975,488	1,000	48,535,978	223,946,818	22%
C/S11185	NKIL5735	Pak Tin, Shek Kip Mei	Skek Kip Mei	Residential	C	5.990	660.0	03/31/78	13,800,000		13,800,000	1,000	56,553,343	77,693,100	73%
C/S11157	NKIL5736	Pak Tin, Shek Kip Mei	Skek Kip Mei	Residential	C	6.000	1,330.0	12/19/77	27,900,000	12,113	27,912,113	1,000	114,359,562	156,824,742	73%
C/S9960	NKIL5395	Broadcast Dr., Kowloon Tong	Kowloon Tong	Residential	B	3.960	1,722	07/26/71	4,460,000		4,460,000	412	30,057,645	118,865,030	25%
C/S11300	NKIL5769	15-21 La Salle Rd., Kowloon Tong*	Kowloon Tong	Residential	B	3.300	3,289.0	03/22/79	35,000,000	231,600	35,231,600	1,000	136,247,920	189,167,943	94%
C/S11140	NKIL5734	Po Kong Village Rd., Skek Kip Mei	Skek Kip Mei	Residential	B	4.279	92.9	10/14/77	1,000,000	4,038	1,004,038	1,000	4,140,669	6,632,827	45%
C/S10227	KIL10146	26 Battery St., Yau Ma Tei	Yau Ma Tei	Residential	B	5.000	62.5	06/16/72	450,000		450,000	62	2,822,216	5,218,113	54%
C/S10694	IL8364	Cloud View Rd, North Point	North Point	Residential	B	5.000	3,531.6	07/26/74	11,100,000	1,361,360	12,461,360	1,000	60,613,464	391,443,380	15%
C/S10656	NKIL5598	Hiu Kwong St., Kwan Tong	Kwun Tong	Residential	B	9.000	3,653.3	05/31/74	12,200,000	97,678	12,297,678	1,000	66,422,570	573,063,847	12%
C/S9793	IL8239	Cloud View Rd., North Point	North point	Residential	B	5.000	2,602.2	11/23/70	2,100,000	293,557	2,393,557	642	15,193,609	288,431,964	5%
C/S9741	NKIL5290	Broadcast Dr., Kowloon Tong	Kowloon Tong	Residential	B	3.300	1,580	08/24/70	2,410,000		2,410,000	390	16,252,464	90,869,956	18%
C/S11048	KIL10364	11 Sham Chun St., Yau Ma Tei*	Yau Ma Tei	Residential	B	6.000	100.5	04/29/77	1,850,000		1,850,000	1,000	7,988,138	10,061,391	111%
C/S10363	KIL10126	167 & 169 Shanghai St., Yau Ma Tei	Yau Ma Tei	Residential	B	5.000	142.5	11/24/72	1,460,000		1,460,000	140	8,553,961	11,886,133	72%
C/S10035	NKIL5413	Fessenden Rd & Broadcast Dr., Kowloon Tong	Kowloon Tong	Residential	B	3.900	1,850.4	10/29/71	4,500,000		4,500,000	458	28,212,967	125,776,630	22%
C/S10950	IL8416	King's Road, North Point	North Point	Residential	A	5.000	2,230.5	08/27/76	41,500,000	1,124,853	42,624,853	1,000	183,193,255	241,762,714	76%
C/S9867	NKIL5347	Hip Wo Rd., Kwun Tong	Kwun Tong	Residential	A	5.000	4,435	02/15/71	3,920,000		3,920,000	1,096	26,464,649	415,548,140	6%
C/S10477	NKIL5515	Kung Lok Rd, Kwan Tong	Kwun Tong	Residential	A	5.000	2,098.5	06/29/73	6,500,000		6,500,000	518	38,077,341	196,627,766	19%
C/S10764	IL8386	50 First St., Sheung Wan	Sheung Wan	Residential	A	5.000	64.3	03/14/75	220,000		220,000	1,000	1,115,690	6,970,825	16%
C/S10390	NKIL5436	Marconi Rd., Kowloon Tong	Kowloon Tong	Residential	A	3.250	1,788.1	11/05/73	10,950,000	504,776	11,454,776	442	61,782,446	108,902,872	57%
C/S11368	IL8535	Hollywood Rd., Shueng Wan	Sheung Wan	Residential	A	3.800	63.5	12/12/79	1,600,000		1,600,000	1,000	5,511,528	6,882,783	80%
C/S9761	IL8223	Tin Hau Temple Rd., North Point	North point	Residential	A	4.400	5,381	09/28/70	7,100,000	296,267	7,396,267	1,330	49,834,998	513,262,241	10%
C/S10706	IL8357	Cloud View Rd, North Point	North Point	Residential	A	5.000	3,903.3	09/27/74	7,100,000	200,558	7,300,558	1,000	35,683,614	423,084,749	8%
C/S10364	NKIL5415	Fessenden Rd., Kowloon Tong	Kowloon Tong	Residential	A	3.250	1,564.1	12/08/72	6,730,000		6,730,000	386	39,417,039	95,261,712	41%
C/E10804	IL8240-41	Cloud View Rd, North Point	North Point	Residential	A	5.000	6,566.0	05/21/75	7,720,000	80,480	7,800,480	2,000	38,204,236	711,688,989	5%
C/S10334	NKIL5392	Broadcast Dr., Kowloon Tong	Kowloon Tong	Residential	A	3.250	1,502.8	10/27/72	6,500,000	14,446	6,514,446	372	38,168,988	91,525,958	42%
C/S11310	KIL10639	460 Shanghai St., Mong Kok	Mong Kok	Residential	A	5.000	87.4	04/26/79	1,750,000		1,750,000	1,000	6,792,551	8,564,715	79%
C/S10780	NKIL5620	Marconi Rd., Kowloon Tong	Kowloon Tong	Residential	A	2.400	1,698.9	04/18/75	4,500,000	5,769	4,505,769	1,000	22,060,755	76,407,913	29%
C/S11202	IL8359	off Tin Hau Temple Rd., North Point	North Point	Residential	A	4.700	4,400.0	06/02/78	75,000,000	1,200	75,001,200	1,000	307,237,990	448,302,212	69%
C/S10419	KIL10220	Argyle St, Mong Kok	Mong Kok	Residential	A	5.000	1,487.0	01/26/73	16,600,000	13,462	16,613,462	588	97,288,549	145,716,654	67%
C/S10139	KIL10081	818 Canton Rd., Yau Ma Tei	Yau Ma Tei	Residential	A	5.000	1,474.9	03/20/72	300,000		300,000	50	1,881,969	6,584,570	29%
C/S10044	IL8238	Mount Butler Rd., Causeway Bay	Causeway Bay	Residential	A	4.500	3,741.6	10/26/71	2,750,000		2,750,000	344	17,244,895	365,001,257	5%

File Name	Lot Number	Location	District	Land use	Classi-fication of sites	Plot Ratio	Area (sq. M.)	Date of Issue	Lease Revenues			Rent	Total Lease Revenue (1991 HK$)	Estimated Land Value At 1991 (1991 HK$)*	Estimated Percentage of Land-Value Capture
									Initial	Premia Modification	Total				
									(HK Dollars value at date of issue)						
C/S9930	KIL9850	Argyle Rd., Mong Kok	Mong Kok	Residential	A	3.500	1,787.2	06/28/71	4,670,000		4,670,000	706	31,490,229	122,593,243	26%
C/S10526	KIL10277	Ho Man Tin Hill Rd, Ho Man Tin	Ho Man Tin	Residential	A	4.000	2,884.8	10/26/73	13,500,000	120,751	13,620,751	1,000	73,635,012	226,152,247	33%
C/S10368	KIL10138	39C Battery St., Yau Ma Tei	Yau Ma Tei	Residential	A	5.000	67.6	12/22/72	320,000		320,000	66	1,876,639	6,621,000	28%
C/S9782	IL8242	Mt. Davis Road, Western	Western	Residential	A	0.75	1,766.0	11/23/70	350,000	6,479	356,479	436	2,266,228	28,709,322	8%
C/S10036	IL8237	Mount Butler Rd., Causeway Bay	Causeway Bay	Residential	A	4.320	1,850.4	10/26/71	6,500,000		6,500,000	924	40,766,951	173,285,843	24%
C/S10436	KIL10137	14 Battery St., Yau Ma Tei	Yau Ma Tei	Residential	A	5.000	68.2	03/30/73	500,000		500,000	68	2,930,460	6,684,752	44%
C/S11178	KIL10591	160 Shanghai St., Yau Ma Tei*	Yau Ma Tei	Residential	A	5.000	61.6	03/03/78	1,300,000	9,262	1,309,262	1,000	5,390,701	6,036,458	95%
C/S10112	IL8037	Tai Hang Rd., Causeway Bay	Causeway Bay	Residential	A	5.000	1,360.6	12/17/71	2,170,000		2,170,000	384	13,614,174	147,475,255	9%
C/S10700	IL8366	Cloud View Rd, Norht Point	North Point	Residential	A	5.000	5,111.5	08/23/74	10,000,000	275,188	10,275,188	1,000	50,274,121	554,039,552	9%
C/S10111	IL8036	Tai Hang Rd., Causeway Bay	Causeway Bay	Residential	A	5.000	280.3	12/17/71	2,110,000		2,110,000	336	13,235,625	30,381,514	44%
C/S11092	KIL10548	Tsim Sha Tsui East	Tsim Sha Tsui	Retail	C	8.666	2,656.5	06/07/77	68,000,000	146,679	68,146,679	1,000	292,543,149	1,455,799,674	20%
C/S10983	KIL10474	Tsim Sha Tsui East	Tsim Sha Tsui	Retail	C	5.000	2,560.0	12/28/76	59,000,000	3,617,353	62,617,353	1,000	269,660,905	809,437,056	33%
C/S11162	KIL10587	Tsim Sha Tsui East	Tsim Sha Tsui	Retail	C	8.250	1,550.0	01/17/78	80,000,000		80,000,000	1,000	327,713,891	808,646,590	41%
C/S11258	KIL10603	Tsim Sha Tsui East	Tsim Sha Tsui	Retail	C	12.000	1,380.0	10/30/78	124,000,000		124,000,000	1,000	479,640,403	1,047,209,191	65%
C/S10343	IL8304	Shek Pai Wan Rd., Abredeen	Aberdeen	Supermarket	C	2.400	2,078.1	11/24/72	9,900,000		9,900,000	514	57,981,235	282,748,950	21%
C/S10114	IL8287	Parkin's Rd., Causeway Bay	Causeway Bay	Supermarket	A	0.700	1,552.0	01/17/72	1,830,000	1,668,439	3,498,439	364	18,980,055	61,593,158	31%
C/S10294	IL8303	Cloud View Rd., North Point	North Point	Supermarket	A	1.200	993.5	09/15/72	4,700,000	109,687	4,809,687	246	28,221,222	67,589,138	42%
Mean															39%

Source: Collected by the author from 92 randomly selected land contracts issued between 1970 and 1979. Information about these land contracts is gathered from microflims obtained from the Land Registry of Hong Kong.

Note: * The estimated 1991 land value is calculated using the residual method, and the description of the procedures is provided in the text.

Sq. m. = Square Meter
T.S.T. = Tsim Sha Tsui
C.W. = Chai Wai
C/S = Conditions of Sale
Ind/Godown = Industrial and Godown
For classification of land sites, refer to the txt.
CSW = Cheung Sha Wan
SW = Sheung Wan