

A CRITICAL EVALUATION OF THE EXISTING NI / GDP ESTIMATES IN HONG KONG

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I. INTRODUCTORY REMARKS

FOR a long time, economists in Hong Kong had been hard put by a peculiar situation. On the one hand, they had been marvelled by the remarkable success of this colony's economic development and anxious to know how this came about; but on the other hand, they had to wait until as late as 1973 for the first release of the official GDP estimates only to give a partial account of this successful story. As is always the case, the most impatient ones are the forerunners in their respective fields. In the present case, the forerunners are Ronald A. Ma and Edward F. Szczepanik who first published their *National Income of Hong Kong, 1947-50* [7]. Their estimates for the three-year period were subsequently extended to 1955 in Szczepanik's article published in the *Far Eastern Economic Review* (November 22, 1956), and the revised estimates for 1952-55 appeared in Szczepanik's book *The Economic Growth of Hong Kong* [8]. These efforts were later followed by K. R. Chou who further extended Szczepanik's revised estimates onto 1964, and the results were presented in his book *The Economy of Hong Kong* [4].

The Hong Kong government expressed interest in national income statistics for the first time in 1962 by requesting E. R. Chang "to conduct a survey of the national income of Hong Kong, to derive statistics therefrom in a form suitable for publication, and to lay the foundation for their continuing review in a practicable manner." The result was *Report on the National Income Survey of Hong Kong* [2] which contains estimates for 1960-61 and 1961-62. Following the publication of this report, a National Income Section was set up in the Census and Statistics Department by the end of 1971. The said department began to publish its *Estimates of Gross Domestic Product* in 1973, the period covered in this first issue being 1966-71. Since then, the *Estimates* has been published annually, with additions for each year; and in the third of the series published in 1975, the additions include estimates for 1961-65, thus making available GDP figures from 1961 through 1975 in the 1977 issue.

The purpose of the present paper is to briefly examine the above-mentioned NI/GDP estimates so as to spotlight their limitations in the portrayal of the

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economic growth of Hong Kong.¹ Specifically, I shall examine (1) whether the estimates in question have involved debatable conceptual or methodological problems, (2) whether the data underlying the estimates are obviously questionable and where this is the case, whether the resulting estimates have been reasonably corrected, and (3) whether the estimates can be cross-checked in totals or in subtotals against the broad development trends of Hong Kong or other countries in similar development stage. For convenience, I shall discuss these NI/GDP estimates in the order of the dates of their publication as referred to above.

II. THE PIONEER STUDY OF MA AND SZCZEPANIK

Considering the various difficulties they had to overcome in amassing information for the estimation of Hong Kong's national income during 1947-50, the pioneer work done by Ma and Szczepanik in the early 1950s should be rated highly commendable. It was quite natural that they had to rely on the tax assessment data for the estimation of a substantial part of income originating in private sectors, because those data were undoubtedly the best then available for the purpose. And they clearly realized the incomplete coverage of these data and the under-assessment of profits caused by tax evasion. For this reason, they added 20 per cent to the estimated assessed income. One may criticize that this 20 per cent increase is entirely arbitrary, but this helps little so long as no alternative is suggested.

However, when we come to their estimates of income originating in private sectors outside the purview of tax assessment, we find more serious problems. A particularly glaring case is that wages arising from industry, distributing and servicing trades, domestic service, and income of miscellaneous unincorporated enterprises were all taken to be unchanged from 1947/48 to 1948/49 while total income from other sectors showed appreciable increase between the two years, thus resulting in the ratio of the sum-total of the former to the latter falling from 54.3 per cent to 45.5 per cent. However, if we move one year further on, we find that the two portions of income both increased by approximately 30 per cent, with their ratio remaining almost the same in 1949/50 as in 1948/49,

¹ The World Bank also published Hong Kong's GDP estimates for 1965-68 in *World Bank Atlas*, (1968) (see also *Finance and Development*, [1968]). Unfortunately, no explanation was given as to how these estimates were arrived at. Furthermore, Y. C. Jao and Laurence C. Chau made their own GDP estimates, respectively, for 1965-68 and 1959-69 on the basis of the studies mentioned in the text (see Y. C. Jao, "Money Supply in Hong Kong, 1954-1968," *Hong Kong Economic Papers*, April 1970; and L. C. Chau, "Estimates of Hong Kong's Gross Domestic Product, 1959-69" and "Alternative Estimates of Hong Kong's Gross Domestic Product: Note," *Hong Kong Economic Papers*, September 1972 and March 1974, respectively). Ingenuity apart, these estimates are no substitutes for estimates by the conventional methods and hence will not be discussed in this paper. Strictly speaking, the method used by Chou in arriving at his estimates is not basically different from that used by Chau. However, his estimates have been more often referred to, and this makes them deserving a comment here.

namely about 45 per cent. Since this appears quite reasonable, the ratio for 1947/48 must have been judged excessively high. It should be noted that the constancy of incomes from the above-mentioned sectors for 1947/48 and 1948/49 was based on the assumption that both the number of employed persons and the rate of remuneration in each of these sectors had not changed between the two years. If we stick to this assumption and bring the original income ratio for 1947/48 down to that for 1948/49, then the total income of the other sectors than those specifically singled out above would also have to remain unchanged. This is apparently unrealistic, considering that the income of the other sectors includes non-wage income which most likely increased from 1947/48 to 1948/49 as suggested by the authors' estimates. On the other hand, if we accept the estimated income of the other sectors for 1947/48, either the number of persons employed or the rate of remuneration in the above specified sectors or both would have to be considerably lowered in order to bring down the income ratio to approximately the same for 1948/49. The truth probably lies somewhere in between as far as the particular year 1947/48 is concerned: larger income from the other sectors (but smaller than that for 1948/49) and fewer persons employed or lower rate of remuneration or both in the above specified sectors, with the income ratio somewhat higher than 45 per cent.

Obviously, the difficulty of passing judgment on questions like the one under discussion is the lack of an overall cross-check. To be fair to the authors, they came very near to providing a controlling total that might serve the purpose. That controlling total is the number of persons employed which the authors classified into three income-level groups composing the whole economy [7, p. 11, Table H]. Unfortunately, they did not bother to establish the correspondence between the total number of persons employed in the whole economy or in each group on the one hand and the number of persons employed in the various sectors in connection with the estimation of the components of national income on the other. As a result, the usefulness of using the total number of persons employed as a controlling total was greatly reduced. To give an example which may also help illustrate the point discussed above, the authors took the total number of persons employed in the whole economy and in each of the three groups to be all unchanged from 1947/48 to 1948/49. However, a careful check on the figures for the two years given later by the authors reveals that persons employed in the various sectors either remained the same (as in the above specified sectors) or increased significantly (as in transport services and on locally registered ships, miscellaneous vessels and junks) and nowhere were persons employed (or population involved) shown to decrease. The only reduction that can be spotted in their book occurred in the assessed cases of business enterprises not subject to tax. This, however, was approximately offset by the increase in the assessed cases of business enterprises subject to personal tax. Thus, the total number of persons employed cannot possibly remain unchanged unless persons employed in some other sectors, e.g., the public sector, decreased correspondingly. But we were not informed of such decreases, if any; and this obviously did not happen in the public sector judged by the appreciable increase

in total emoluments from 1947/48 to 1948/49.

If we find no evidence to support the assumption of unchanged employment for these two years, we find it even harder to believe that total employment increased 21.4 per cent from 1948/49 to 1949/50. This appears all the more puzzling if compared with the 9.3 per cent increase of both total population and working-age population. In absolute figures, total employment was shown to have increased by 150,000 persons compared with 170,000 for total population and 112,000 for working-age population [7, p. 6, Table D]. It should be noted that the respective increases in total population and working-age population from 1947/48 to 1948/49 were only 15,000 and 10,000. The large increase in population from 1948/49 to 1949/50 was, therefore, primarily due to the influx of refugees from Mainland China as a result of political events occurred in 1949. Remembering the hardships experienced by these refugees and the difficulties then faced by the Hong Kong government in its effort to minimize such hardships, we cannot but doubt that the large increase in population in 1949/50 was so easily absorbed by the Hong Kong economy as the above employment figures would suggest. In particular, we suspect the described situation in which the increased total employment (150,000) exceeded the increased working-age population (112,000) and as a result, unemployment decreased from 132,000 in 1948/49 to 66,000 in 1949/50, with its percentage in the working-age population falling from 11 per cent to 5 per cent [7, p. 10, Table G].

Without questioning these figures, the authors allocated the number of persons employed in 1949/50 among the three income-level groups as they did for 1947/48 and 1948/49. But, here again, when adding up the persons employed in the various sectors given by the authors when the component elements of national income are discussed, with due allowance for the number of persons employed by some sectors not directly given, we find a quite large discrepancy between this sum-total and total employment given above to be reconciled. This points again to the failure of the total employment figure serving as a controlling total.

So much for the estimates of national income for 1947-50. It is quite unnecessary to go into the details of these estimates whose explanations were all but too brief and, in particular, the estimates of fixed capital formation which not only were inadequately explained but seemed very much out of place in the book. Nor would it be fair for me to comment on the follow-up estimates of net domestic product at factor cost and fixed capital formation in Szczepanik's later studies if only because there even less information was provided.² In the re-

² A casual look at the figures in *The Economic Growth of Hong Kong* [8, p. 177, Table 42] caught me in surprise to find that net "real" capital formation as a percentage of net domestic product at factor cost (both in current prices) drops from 8.6 per cent in 1949/50 to 6.3 per cent in 1954/55, the latter year marking the successful transition of the Hong Kong economy from entrepot trade (which suffered from a severe setback due to U.S. embargo against Mainland China subsequent to the Korean War) to industrialization; and with total net domestic product in constant prices 55 per cent higher in 1954/55 than

maining part of this section, I shall discuss a number of conceptual problems that can be found in *The National Income of Hong Kong 1947-50* [7].

(1) In calculating net income from rice crops and vegetables [7, pp. 35-36], gross profits were first computed by deducting total costs (including the land and labor costs in full) from total revenues; then 80 per cent of labor costs and 50 per cent of land costs (rents) were added back on the assumption that "the farmers do most of the work themselves and own approximately one-half of the land." In this context, I suppose the authors did not mean that 20 per cent of the labor costs and 50 per cent of rents are not part of income originating in the production of rice and vegetables, but I fail to see where else these incomes were recorded. It may be further noted that, in the case of vegetables, the above described method of estimating income applied only to sales while home consumption was estimated by multiplying the annual consumption volume by the average selling price in each year, ignoring altogether the non-income cost elements (i.e., intermediate goods). Thus, as far as home consumption of vegetables is concerned, the estimates erred in the opposite direction.

(2) Although the authors did not clearly define the "income" of charitable organizations, it seems obvious from the context that it mainly consists of two parts, namely transfer income (donations, subsidies, etc.) and property income. Since the latter presumably had been lumped together with rental income from all other sources, only the former, i.e., transfer income, was estimated; and this was done on the basis of refunds of income tax paid by the charitable organizations and the standard tax rates. On the surface, the problem involved here seems to be whether the transfer income of charitable organizations had also been included elsewhere. If a lion's share of it was donated by those whose taxable income assessment had been correspondingly adjusted (as was possibly the case), then on the method of estimating income for those segments falling within the purview of tax assessment there would be only a minimal double counting possibly arising from some small benefactors falling outside the purview of tax assessment. This way of looking at the matter amounts to treating the charitable organizations as distributors of disposable funds (including property income of these organizations), no more and no less.³ However, if the charitable organizations are treated like general government (as is now the general convention), they themselves would have generated income which is primarily in the form of compensation of employees. Though this is financed partly or wholly by donations, it is a genuine income just as the compensation of public employees which is primarily financed by taxes. What would be needed then is to add back

1949/50 (see the same table), one would expect the ratio of fixed capital formation to total domestic product to show appreciable gains, especially in a much improved investment climate. Incidentally, Szczepanik took "real" capital formation to mean "fixed" capital formation while the former generally refers to capital formation in constant prices. It could be misleading if Szczepanik had not made it clear that his estimates of "real" capital formation were in current prices.

³ Then one may question how such disposable funds could be called "income" of the charitable organization.

these donations to total assessed taxable income from all other sources, with the double counting of a small portion of these donations made by benefactors not covered by tax assessment remaining the same.

(3) In the estimation of miscellaneous income, dance hostesses and prostitutes were listed under "entertainment." This immediately reminds us of the omission of drug trafficking which was probably far more important than prostitution in terms of business earnings. But economists have generally agreed to exclude such business activities from the boundary of production both on value judgment and on the consideration that even an approximation to these earnings could hardly be established. In fact, not a few people in Hong Kong have made their living in similar illegal business activities such as ammunition dealings, gold smuggling before gold bar was lifted in 1974, illegal immigration racketing, etc. But, for the same reason, their earnings have to be excluded from national income.

In this connection, perhaps I should not forget to mention another illegal activity, namely corruption among the government officials. Judged from the fact that even in recent years this phenomenon has remained so prevalent that the government found it necessary to create the Independent Commission Against Corruption in 1974, the situation must have been far more worse twenty years ago. This problem particularly deserves our attention because it does not merely involve the transfer of income from private businesses or individuals to government officials. One can imagine many cases involving corruption that might affect the estimation of income. One of such cases would be conspiracy between tax assessment officials and tax paying firms with the result that taxable incomes would be under-assessed under some tacit benefit-sharing arrangement. Another perhaps even more conspicuous case would be outright bribery. To the paying firms, this is just an expense for facilitation of their business; so their operating surplus or income would be correspondingly reduced. But actually, this is a transfer of income except that this part of income would not be shown in the national accounts. As a result, it would cause dislocation of the national accounts as a whole, because if the expenditures on national product are independently estimated (so that the additional expenditures out of bribery money would be included), the sum-total would be larger than the national product (which would not include the bribes). As a matter of fact, all the above-mentioned illegal business activities probably have involved bribery in varying degrees. Therefore, their omission might have aggravated the dislocation of the national accounts because these earnings from illegal activities and the bribes therefrom would have been spent somehow by the recipients.

(4) Conceptually, perhaps most confusing of all is the one-page section on "net factor income paid abroad" in the authors' book [7, p. 47]. Presumably, this item is the balance between that part of income originating in Hong Kong but payable to foreign factor owners and the counterpart from foreign countries. However difficult it may be to estimate this item, it should not include international transfers such as charitable donations and colonial grants from United Kingdom as shown in the estimates. Nor should it include those personal

remittances if they are not factor income of the normal residents of Hong Kong or foreign countries but are of the nature of transfers. Also excluded are travel (or tourists') expenditures,⁴ freight earnings and ships' disbursements which are generally classified as invisibles in external trade and hence are not directly related to factor income accrued to domestic or foreign factor owners. A little more complicated are "expenditure by the British military authorities" and "remittances to Hong Kong for military purposes" as mentioned in the book. These two items may be considered partly as transfers (in the disguised form of subsidy for defense) and partly as travel expenditures (hence invisible exports) in the account. For the same reason as stated above, they should not have been discussed here in the first place.

It may be noted in passing that Szczepanik finally retreated from "national income" to "net domestic product at factor cost" when he made an attempt later to extend the estimates for 1947-50 to 1951-55 in his *The Economic Growth of Hong Kong* [8]. This enabled him to ignore altogether "net factor income from abroad," of which the difficulty of measurement he apparently did not understand when he worked on the estimates for the earlier years.

III. K. R. CHOU'S EXTRAPOLATION

Like Jao and Chau mentioned in footnote 1 of Section I of this paper, Chou has demonstrated ingenuity in producing quick-GDP/NDP estimates by using a relatively small amount of readily available data, and the remarkable closeness of his estimates to those appearing in the official statements for the corresponding years (1959-64) further added to them simplest beauty. However, in fairness to the hard-headed national income workers, Chou's study must be judged more or less as guestimates representing the results of hasty endeavor in sketching the economic growth of Hong Kong. In fact, his estimates of GDP/NDP are no more than approximations by extrapolating Szczepanik's estimates for the earlier years. Therefore, his contribution was primarily compilation of an extrapolator or the "composite growth rates." The latter was composed of the growth rates of "wages and salaries," "corporate profits, rents, and interest," "government revenue," and "others" (profits of unincorporated business and incomes of own-account workers), and was taken to represent the growth rates of income. A number of questions immediately arise from this approach quite apart from possible unreliability of the individual growth rates composing the overall average.

(1) It is suspected that "wages and salaries" included in the composite growth rates were measured at constant rates to keep pace with "the growth of industrial employment" as hinted by Chou himself. If this is true, then the growth rates of "wages and salaries" would not only be non-comparable with those of the other items which were presumably all in current prices but would fail to take

⁴ As will be shown later, this item may be alternatively included in consumption expenditures when national or domestic product is measured from the expenditure side. However, care should be exercised lest mistakes should slip into the estimates.

TABLE I
COMPARISON OF CHOU'S GROWTH RATES OF WAGES AND
SALARIES AND INDUSTRIAL EMPLOYMENT

	(1) Wages & Salaries	(2) Industrial Employment	(3) Two-year Moving Average of (2)
1959	11.9	12.5	13.0
1960	13.5	21.2	16.9
1961	8.0	0.4	10.8
1962	7.3	21.3	10.9
1963	10.5	8.2	14.8
1964	11.2	17.2	12.7

Sources: (1) and (2) are based on *Far Eastern Economic Review*, January 6, 1966, p. 32, and January 13, 1966, p. 69.

account of the increase in the productivity of labor. This suspicion seems to have been substantiated by the accompanying table which shows that the growth rates of industrial employment exceed those of wages and salaries for four out of six years. If account is further taken of late reporting of workers employed by the factories which has been the general practice and if two-year moving averages of these annual growth rates are calculated, then the growth rates of industrial employment would be higher than those for wages and salaries throughout the six years compared.

(2) The inclusion of "government revenue" in the composite growth rates gives rise to even more serious conceptual problems. Since direct taxes were derived from "wages and salaries" and "corporate profits, rents, and interests," this necessarily makes these two groups of private income over-represented in the composite growth rates. As regards the other part of "government revenue," one can easily see that most was irrelevant to the problem at hand. For example, what had the "outlay taxes" (accounting for almost one-half of government revenue) to do with the estimation of GDP/NDP at factor cost? And why should the transfer items such as government lottery, Colonial Development and Welfare Grants, World Refugee Year Grants, contributions towards Projects and Loans from United Kingdom, etc. have been included? In the context of Chou's analysis, the only relevant items in "government revenue" seem to be profits or operating surpluses of public enterprises such as Post Office, Kowloon-Canton Railway, Kai Tak Airport and Air Services, water supply, land reclamation (but not land sales), and the like. But these items were quite small in magnitude relative to total government revenue.

(3) As regards the weights used in aggregating the growth rates for the above-mentioned categories into the composite growth rates for 1959-64, we were informed that they were "roughly calculated from the same sources of information"—"wages and salaries," "corporate profits, rents, and interest," "government revenue," and "others." These weights were placed respectively at 40 per cent, 20 per cent, 15 per cent, and 25 per cent without further explanation as to whether they were averages of the period 1959-64 or simply figures for any single year of this period. In the light of the above comment relating to

government revenue, they would have to be modified and reallocated, with a much smaller weight for the operating surpluses of public enterprises than that assigned to government revenue by Chou (i.e., 15 per cent). Furthermore, in view of the different degrees of incompleteness in the coverage of the aforementioned "income" categories, the weights "calculated from the same sources of information" would inevitably cause distortion, whatever adjustment would be made. The results would surely be on a safer ground if the weights for the growth rates of the respective "income" categories had been based on the much more solid estimates by E. R. Chang for 1960-61 and 1961-62 which had already been summarized in an article published in *Far Eastern Economic Review* (May 26, 1966) at the time when Chou wrote his Chapter in [5, p. 79].

Following Ma and Szczepanik, particularly the latter, Chou also presented estimates of domestic capital formation in his book [4, pp. 71-76]. In addition to "producers' durables," "private buildings," and "public works," which were based on data "drawn from official statistics published by government departments," the estimates of "inventory changes" appeared for the first time. These figures were arrived at on the assumption that "the rates of change follow the pattern of retained imports and domestic exports"; "that is to say, a fixed ratio is established between current sales and inventory" [4, p. 71]. Letting alone the question whether this assumption is acceptable, it is surprising to find that inventory changes thus estimated varied between 18 per cent and 29 per cent in total gross domestic capital formation during 1948-51 and then suddenly dropped and fluctuated from negative figures to relatively small positive figures and finally stabilized at 4 per cent during 1962-64. To some extent, the abrupt changes since 1952 would have been quite understandable if "total sales" consisted of retained imports and *total* exports (or, alternatively, *total* imports and domestic exports), because this would have brought to light the impact of the decline in the entrepot trade since the early 1950s (in the form of diminished need of the trade-induced inventory holding which could be quite large relative to the volume of trade before containerization was introduced in the later years). However, since Chou adopted different "total sales" and he left unexplained the above-mentioned fluctuations in the ratio of inventory changes, nor had he provided sufficient information about other components of domestic capital formation, I can only conclude that his GDCF figures are no less guestimates than his GDP/NDP figures.

IV. CHANG'S NATIONAL INCOME SURVEY

Though only covering two years, i.e., 1960-61 and 1961-62, E. R. Chang's *Report on the National Income Survey* [2] may be justifiably considered as a landmark in the measurement of Hong Kong's national income and GDP. It also represents the first attempt to bring NI/GDP estimates and related totals together to fit into the SNA system as proposed by the United Nations. It may be recalled that Chang's survey was undertaken at the request of the Hong Kong government, and for this reason he received all the necessary cooperation and

support of relevant government departments which might not have been as readily available to either Ma and Szczepanik or Chou or any other private scholars. Equally important, Chang stuck closely to the definitions of the various items and the methods of their measurement prescribed in UNSNA, thus freeing himself from many conceptual and methodological difficulties. In what follows, I shall discuss only a few points which I think remain relevant, leaving to Section V a few others which may be equally applicable to the official estimates.

(1) I fully agree with Chau that "the procedure employed by Chang tends to underestimate the level of income in general" [3], though for many more reasons than under-registration of the number of firms by the Business Registration Office of the Inland Revenue Department as pointed out by Chau. The other reasons have already been touched upon in Section II of this paper commenting on Ma and Szczepanik and will be further discussed later. Here I wish only to call the reader's attention to the incomplete coverage of tax assessment which was in part connected with under-registration of the number of firms. Like Ma and Szczepanik, Chang also relied heavily on the tax assessment data for the estimation of income. But Chang seemed to have far less reservation about the completeness of these data than Ma and Szczepanik. This may be partly justified by the improvement in the tax assessment coverage over a period of ten years since Ma and Szczepanik published their national income estimates in the early 1950s. However, to the extent the coverage of tax assessment remains incomplete, which might be the case in the early 1960s, particularly in respect of the unincorporated businesses, I think my comments on Ma and Szczepanik still apply. And judged by the erratic changes in the indexes of the taxes assessed during the five-year period from the fiscal year ending March 31, 1962 to the fiscal year ending March 31, 1966 (using the former year as base), it may be doubted that even the tax assessment data for corporations could have been too heavily relied upon for the estimation of income originating in incorporated businesses [2, p. 70, Table 4.4]. Similar observation also applies to the rating and valuation data used in the estimation of rent although here Chang was less confident as with tax assessment.

(2) Chang's adoption of the commodity flow approach to the estimation of expenditures on gross domestic product indeed represents a great step forward in fully exploiting the usefulness of the available data for the purpose, although the same method had been employed in the measurement of domestic capital formation by Ma and Szczepanik for the later 1940s through the mid-1950s and then by Chou for the later years through the mid-1960s. I quite agree with Chang that Hong Kong might be a place where the commodity flow approach to the estimation of expenditures can be profitably used. Nevertheless, as Chang himself is perfectly aware, the difficulties of distinguishing final from intermediate uses, consumption from investment, retained imports from re-exports, etc. remain almost insurmountable, and the arbitrariness of fixing the rates of mark-ups only compounds these difficulties. One can only guess as to the direction of possible biases that all these arbitrarinesses might eventually lead to. Chang himself believed the existence of an overall upward bias, especially in

the estimation of consumption expenditures. However, there were also evidences suggesting the contrary. The above-mentioned under-registration of the number of firms (which Chau believed to be quite serious) necessarily led to under-estimation of domestic production and hence expenditures through the lessened commodity flows. Furthermore, as the Census and Statistics Department pointed out later, "the value of retained imports...of each commodity is an understatement of expenditure since the values of re-exports in addition to the import value also include importers' profit and other transport storage expenses."⁵ In view of the importance of these two considerations (letting alone others that might exist),⁶ I am inclined to think that the total expenditures on gross domestic product estimated from the commodity-flow approach may also err in the downward direction.

(3) In connection with the contribution of banks and similar financial intermediaries to domestic product, Chang accepted the principle of treating the receipt of interest (investment income) by banks, etc. as payment for a service credited to the current accounts of other enterprises instead of imputing to depositors (enterprises and households) a service charge equal to the excess of investment income accruing to these financial institutions over deposit interest accruing to their depositors (both suggested in UNSNA, 1965). The second method was rejected "because of the lack of data with which to decide the imputed charge between households and enterprises" [2, p. 39]. However, if the first method is strictly adhered to, there is also the problem of allocating the imputed charge among different enterprises (or industries). And, as far as I can see, Chang has not informed the reader how he got around this difficulty in the estimation of the product of the latter.

In a forthcoming study on Hong Kong's gross domestic product, 1950-75, I argue that it is more appropriate and easier to adopt the first method in estimating the product of banks and similar financial intermediaries. This is because productive enterprises in Hong Kong generally do not keep time or savings deposits with banks as households and private non-profit institutions while current deposits are not paid interest. Therefore, it may be quite near the truth according to the first method if the imputed banking service is entered into the current account of households and private non-profit institutions alone. Alternatively, if this imputed service should be considered as being performed by banks and similar financial intermediaries to channel the savings of other economic agents into loans to industries and therefore should be treated as intermediate consumption of industries, we could adopt a further simplified method introduced in UNSNA [9, 1968, p. 97]. This method calls for, as above,

⁵ *Estimates of Gross Domestic Product*, all issues.

⁶ For example, there was a substantial portion of buildings which were used for both commercial and residential purposes, a practice most prevalent among the unincorporated businesses. However, the lack of information in this respect made Chang to include the rent of these buildings for both purposes in the profits of the proprietors or the owners themselves, without imputing part of it to dwelling. In this particular case, the net result is under-estimation of expenditures relative to income. Cf. Chang [4, pp. 37, 47] (where rent as income and expenditure was respectively discussed).

imputing a service charge by banks equal to the excess of investment income over deposit interest but, instead of allocating it among the various industries as their intermediate consumption, treating it as the intermediate consumption of an artificial "nominal industry" with an equivalent amount of negative operating surplus. Being classified as a financial institution, its negative operating surplus will be counter-balanced by the excess of banks' investment income over deposit interest. However, at the time when Chang completed his study for publication, he probably had no knowledge of this modified method as yet.

(4) I am puzzled by the presence of the item "capital transfers" between general government and private enterprises (corporations) in the form of "land sales" in the system of accounts compiled by Chang [2, p. 17, Item 3.5], and I must be quite frank that I do not understand the rationale behind this transaction. It seems to me that in principle a government department in charge of land reclamation should be treated as any other public enterprises with its operating surplus from land reclamation to be included in general government's "income from property and entrepreneurship." On this principle, land sales to private enterprises should be credited to the current account of the department in the first instance instead of being treated as "capital transfers" between general government and private enterprises, unless the transaction involves the transfer of ownership of the sites of existing government buildings or other installations. In the latter case, it would be quite proper to record the transaction as "capital transfers" between general government and private enterprises.

Basically, this of course depends on whether the government department responsible for land reclamation is regarded as one of the regular departments or as a business unit like the Post Office, the Kowloon-Canton Railway, etc. Apparently, Chang accepts the first point of view as clearly stated in his remarks that "...land reclamation...undertaken by the Government...appears under the non-recurrent expenditure of government" [2, p. 56]. But would it not be more sensible to adopt the second point of view considering that land reclamation *is* an important productive activity in Hong Kong?⁷

(5) Surprisingly enough, Chang's estimates of increase in stocks, 24.4 per cent and 19.2 per cent of total gross domestic capital formation for 1960-61 and 1961-62 respectively [2, p. 76], are very close to the per cent shares estimated by Chou for the period 1948-51. In percentage of total GDP, the two-year estimates of the increase in stocks would be 6.4 per cent and 4.5 per cent respectively. These figures are considerably higher than in all other developing as well as developed countries of the world. Except for 1973 and 1974 when the sharp rises in the prices of oil and a number of primary raw materials had inflated the value of the increase in stocks relative to that of other components of gross domestic capital formation, the per cent share of the increase in stocks

⁷ To help answer this question, let us ask what "capital transfers" mean. In Chang's report [2, p. 17, Item 3.5], we were told that net capital transfers to corporations meant *unilateral* transfer of capital between (in present case) government and corporations. Now we can further ask: Does the newly reclaimed land sold to corporations represent a unilateral transfer of capital?

is generally below 1.5 per cent in the developed countries and hardly above 3 per cent in the developing countries [9]. The only explanation for the unusually high percentage of the increase in stocks would be that the distributive system in Hong Kong in the early 1960s was even less efficient than in other developing countries—a conclusion obviously in contradiction to our practical experience.

Furthermore, Chang showed the percentage distribution of increase in stocks to be 23.6 per cent for manufacturing, mining, and construction, 49 per cent for wholesale trade, and 12.3 per cent for others (not including agriculture, forestry, and fishing, and retail trade) for 1960–61, and 56.2 per cent, 8.6 per cent, and 21.2 per cent, respectively for 1961–62 [2, p. 78 Table 4.11]. Although this part of investment is likely to be highly volatile, especially when classified by sector, such drastic changes in its percentage distribution in two consecutive years as shown here nevertheless require some solid explanation to convince the reader of their reliability.

(6) While total gross domestic capital formation accounted for 26 per cent and 24 per cent of gross domestic product for 1960–61 and 1961–62, respectively [2, Table I in Appendix II, p. 99], according to Chang's estimation, saving by households and private non-profit institutions contributed only 5.8 per cent and 7.2 per cent to the finance of total gross domestic capital formation for the two years [2, p. 81]. The insignificance of private saving can be even better seen from the income and expenditure account of households and private non-profit institutions. Here we find that "saving" amounted to only 1.8 per cent and 2 per cent of income respectively for 1960–61 and 1961–62 [2, p. 82]. It should be noted that the income of households includes income from unincorporated enterprises [2, p. 16, Item 2.2]. Thus the negligible saving ratios as shown amount to suggesting that the income of households and private non-profit institutions including income from all unincorporated enterprises had been virtually all spent on consumption in these two years. Chang himself attributed this incredible result partly to the gross under-estimation of migrant transfers to Hong Kong; but I do not think he really attached importance to this factor because the main stream of migrants, i.e., refugees from Mainland China, in the early 1960s were no longer able to bring fortunes with them (even if they had) as those in the late 1940s.⁸

⁸ As far as receipts from abroad are concerned, a more important source of under-estimation of income and hence saving of households seems to be the exclusion of investment income from abroad. In this connection, there might be some confusion in Chang's discussion of "overseas receipts" and "investment income" from abroad [2, p. 33]. On the one hand, Chang argued that overseas profit receipts of incorporated businesses should be included for national income purpose (which was of course right); but, on the other hand, he stated that "investment income from abroad was not included in NDP and therefore these receipts had to be deducted so as not to be reflected in the profits share." I do not understand in what context this statement was made. But from the national income account in Chang's report [2, p. 115], it is clear that both "investment income from abroad" and "overseas receipts" of profits (basically what is the difference between the two?) should have been included in "income from property" and/or "saving of corporations."

The other suspicion Chang had in mind, namely, over-estimation of consumption by households, deserves more attention. Let us first check Account 4 (households and private non-profit institutions) in Chang's report [2, Appendix II] and guess the minimum amounts that the households and private non-profit institutions were reasonably expected to save during 1960-61 and 1961-62. The "capital reciliation account" shows that "saving" contributed only 16 per cent and 21 per cent to the finance of gross capital formation in the non-corporate sector for the two years respectively while "net borrowing" accounted for as much as 75 per cent and 73 per cent. This means that the non-corporate sector (mainly unincorporated enterprises) predominantly relied on the external source to finance its capital formation. It does not take much investigation to conclude that this finding does not conform to reality not only in Hong Kong but probably also in most of the developed countries. In the case of Hong Kong, the fact is that the non-corporate sector hardly has any access to external finance, nor does it have strong inclination to borrow from outside even today. On the other hand, the households and private non-profit institutions generally accumulate their savings in the form of bank deposits and stock holdings and it usually takes quite some time before they are put to other uses including capital formation. Thus, on balance, the households and private non-profit institutions may have *net lending* rather than net borrowing. It is believed that, if this is near the truth now, it must be more so in the earlier years. Therefore, a conservative hypothesis would be that the households and private non-profit institutions neither lent or borrowed on the whole in the early 1960s. On this hypothesis, the minimum amounts they were expected to save during 1960-61 and 1961-62 would approximately come to 91 per cent and 94 per cent of the finance of gross capital formation in the non-corporate sector. Now assuming that consumption expenditure was over-estimated as suggested by Chang while all other items except saving on the current account are accepted as they are. Then to make the amounts of saving accountable for 91 per cent and 94 per cent of the finance of gross capital formation in the non-corporate sector during 1960-61 and 1961-62, the original estimates of consumption expenditure would have to be cut down by 8.89 per cent and 7.66 per cent for the two years. This would reduce the ratios of consumption expenditure to disposable income to 89.7 per cent and 90.8 per cent and raise the saving ratios to 10.3 per cent and 9.2 per cent (instead of 1.8 per cent and 2 per cent as originally shown). All seems to be well in order now.

(7) However, with all other items remaining unchanged, the downward revision of private consumption expenditure would immediately upset the balance of Account 1 (domestic product) in the system of national accounts in Chang's report [2, Appendix II]. Furthermore, with "net borrowing" on Account 4 assumed to be nil, "net borrowing" of corporations on Account 3 (domestic capital formation) would be correspondingly increased and the balance of that account would also be upset. The same would occur to "net borrowing" of general government and the rest of the world and hence the balances of Account 5 and Account 6. As a result, the whole system of national accounts

would be thrown out of balance just because of revision of one item, namely, private consumption expenditure. Obviously, this result need not assume that the upward revised saving would exactly absorb "net borrowing" of households and private non-profit institutions, and assuming under-estimation of income instead of over-estimation of private consumption would lead to the same result. Anyway, it looks that the system of national accounts as it is provides no room for adjustment in case of need even if only one item is involved.

The above discussion leads to an important question. Although Chang frankly admitted the limitations of his study, the manner in which the system of national accounts was presented gave the appearance that all the estimated items on these accounts checked perfectly well. This of course is a wrong impression. The fact is that UNSNA by itself provides no cross-check on any independently estimated items. It is practically impossible to expect the estimates of GDP or GNP from both the income approach and the expenditure approach to be exactly equal as formally shown in Account 1 or in Accounts 1 and 2 combined (crossing out "net domestic product at factor cost" on both sides). And the fact that "saving" and "net borrowing" shown on the other accounts are but balancing items insures that any statistical errors can be absorbed without showing discrepancies as amply illustrated by the possible over-estimation of private consumption suspected by Chang. Of course, this is no fault of Chang who simply follows UNSNA, and it is natural that the latter is concerned only with general principles, leaving to national income statisticians the treatment of errors resulting from estimation based on incomplete or unreliable data. But this does mean that Chang could have done a greater service to the national income study of Hong Kong if he had gone further to identify even approximately possible discrepancies on the relevant accounts.

V. THE OFFICIAL GDP/NI ESTIMATES

It is quite natural that, as part of official statistics, CSD's estimates are based on a rich wealth of data supplied by various government departments and institutions which are even more readily accessible than to Chang. What makes these estimates particularly useful is that they not only have been placed on a continuing annual basis since the release of *Estimates of Gross Domestic Product, 1966-71* in 1973, each new issue with additional estimates for the respective current year, but have been extended backward to 1961 in the 1975 issue; and the fact that each new issue saw revisions of some previous estimates promises continual upgrading of the quality of CSD's estimates. The following comments are intended to help in some small way in further improving these GDP/NI estimates in a few important areas.

(1) CSD's estimates share many of the weaknesses shown in Chang's study, those in the estimation of private consumption and domestic capital formation being probably most conspicuous. This of course has primarily had to do with the commodity flow method employed both by Chang and CSD, and a fuller explanation of distributors' margins and other mark-ups in the valuation of the

commodity flows will bring the problem even more strikingly to the surface. In the case of consumption, CSD's estimates have placed, in general, the distributors' margins at a flat 30 per cent for retained imports as well as domestically produced goods valued at manufacturers' prices and half this percentage for domestically produced goods valued (presumably) at wholesalers' prices. The same flat 30 per cent was applied to retained imports of plant, machinery and equipment for domestic capital formation "to allow for dealers' profit, transport and assembly charges, installation and other expenses." It has not been mentioned what rates of mark-ups were applied to domestically manufactured capital goods, but it may be safely assumed that they were the same as those for domestically produced consumption goods. In the absence of reliable information in this respect, one cannot say anything about the flat rate 30 per cent or 15 per cent. However, there is reason to believe that the mark-ups for capital goods are, in general, considerably higher than those for consumption goods because assembly and installation of plant machinery and equipment are far more expensive than the delivery of consumption goods. On the other hand, it should be noted that the mark-ups for the most important consumption item, food, have been relatively under-estimated to the extent that food "consumed in catering establishments has . . . valued at retail market prices, not at the prices paid by customers" [1, p. 5]. Considering that the retailers' prices and the customers' prices for food are widely different and that catering establishments are extraordinarily popular in Hong Kong, the failure to allow for the mark-ups for food by catering establishments could have resulted in serious under-estimation of consumption.⁹

(2) Another source of under-estimation of consumption which can be spotted is also traceable to the commodity flow method employed both by Chang and by CSD, though the problem involved is somewhat more complicated. In spite of the fact that Hong Kong possesses statistical information for the commodity flow method to be used for the estimation of many consumption items, both Chang and CSD have found it necessary to supplement the estimates by employing this method by those on the basis of the household expenditure survey. Thus, though the major part of total "consumption expenditure of goods and services in the domestic market" pertains to both residents and non-residents, part of it pertains only to residents. On the other hand, the "expenditure of non-residents in the domestic market" separately estimated may be partly on goods and services falling in the second category. Therefore, deducting the latter from total consumption expenditure in the domestic market and adding to it "expenditure of residents abroad" also separately estimated as was done by Chang and CSD necessarily resulted in *under-estimated* "consumption expenditure of households and private non-profit institutions" as shown in their respective estimates.

⁹ In most catering establishments, the prices of food paid by the customers are often more than double the retail prices for food of the same kind. Presumably, the differences between these prices have been included in "services" of catering establishments. But one wonders how the latter could have been separately estimated by the commodity flow method with the existing available data.

Incidentally, I must admit that I am confused by the disparity between the two items "expenditure of non-residents in the domestic market" and "expenditure of residents abroad" as shown in the estimates of private consumption expenditures and the two other corresponding items "travel expenditure" of non-residents and residents appeared respectively under exports and imports of goods and services. Though CSD has not explicitly stated as Chang that the methods and sources used in estimating the latter two items are the same as with the former two items, the explanation provided by CSD gave one the impression that they referred to the same things. Yet, in both CSD's estimates and Chang's, the former two items are appreciably larger than the latter two items. Since only the difference between the former two items relative to that between the latter that really matters from the point of view of the estimation of GDP and since the former difference was estimated to be slightly below the latter difference by CSD for 1961 and 1962 but far greater than the latter by Chang for 1960-61 and 1961-62, CSD's estimates of GDP for the two years were only slightly affected by the disparity between these items in the upward direction whereas Chang's estimates were significantly affected in the downward direction. For the later years, CSD's estimates have continued to be affected by the same factor and biased in the same direction, though in varying degrees. It is possible that the disparity between the above-mentioned items may be largely apparent; but it is important that adequate explanation is given if only to avoid misunderstanding.

(3) The time series of CSD's estimates are long enough to permit a general observation of the expenditure structure of GDP, though limited by the fact that the estimates of increase in stocks are not available until 1973.¹⁰ Since the estimates of government consumption expenditure and of exports and imports may be taken as least questionable, I shall confine my observation to two major GDP components—i.e., private consumption expenditure and gross domestic fixed capital formation, for the time being. To begin with the estimates for 1961 and 1962, it is found that the shares of private consumption and gross fixed capital formation in GDP in CSD's estimates are both considerably higher than those in Chang's estimates for 1960-61 and 1961-62—87.65 per cent vs. 80.26 per cent for the first year and 85.88 per cent vs. 79.05 per cent for the second in the case of private consumption and 21.39 per cent vs. 19.80 per cent and 24.75 per cent vs. 19.13 per cent for the two respective years in the case of gross fixed capital formation. However, this is partly due to the fact that changes in stocks figure relatively large in Chang's estimates of GDP, as pointed out above while they do not even appear in CSD's estimates for the two years. If changes of stocks are deducted from Chang's estimates of GDP to arrive at the two shares, they would be 85.75 per cent for 1960-61 and 82.82 per cent for 1961-62 for private consumption and 21.16 per cent and 20.04 per cent for gross fixed capital formation, much closer to the official estimates.

Viewing the period 1961-75 as a whole, we find that the share of private

¹⁰ It should also be noted that, as in Chang's study, newly reclaimed land has not been included in CSD's estimates.

consumption in CSD's estimates showed a distinctly falling trend except for 1966-68 while the share of gross fixed capital formation rose rapidly in the first few years, then suddenly fell in 1966-68, and gradually returned to the initial level obtained in 1961. While we reserve our opinions about the trends of these two shares for the time being, we have no doubt that the changes in the two shares during 1966-68 are primarily accidental; and this had to do with two important events, namely, the banking crisis in 1965 and the riots in 1967. The banking crisis happened because of the rampant speculation in real estates in general and in land in particular since the early 1960s, in which a number of reputed local banks were directly or indirectly involved. The real estates speculation was carried to such an excessive extent that the liquidity of the banks involved was seriously affected in 1965—hence the banking crisis. Until then, the land price continued to soar, and so did the value of buildings and constructions. This factor alone goes a long way in explaining the rapid rise in the share of gross fixed capital formation at the expense of the share of private consumption. The same force worked in the opposite direction since 1965 and the violence in 1967 precipitated the fall in the land price and the value of real estates in general, thus resulting in a drastic decline in the share of gross fixed capital formation in the second half of the 1960s and slowing down the falling trend of the share of private consumption during the same period.

It should be particularly emphasized that this is not a problem of valuation at current rather than constant prices. For, as shown in the accompanying table, changing valuation at current prices to valuation at 1966 prices does not modify the foregoing observation regarding gross fixed capital formation relative to private consumption. The problem therefore is: whether the effect of real estates speculation on gross fixed capital formation relative to private consumption should be allowed to remain in the estimates as it is or should be removed so that changes in the shares of the two major GDP components during the period under review would more accurately reflect the development trends.

However, changing valuation basis as in Table II does throw up a new problem: while the share of gross fixed capital formation at constant prices remains more or less the same as that at current prices throughout the period 1961-75, the share of private consumption at constant prices now no longer exhibits the declining trend as the original series. As a matter of fact, if the averages for 1961-63 and 1971-73 (all being relatively normal years) are compared, we will find that the average share of private consumption at constant prices increases from 83.76 per cent for the first period to 85.39 per cent for the second while the average share of gross fixed capital formation decreases from 24.75 per cent to 21.86 per cent. As explained above, the shares of private consumption and gross fixed capital formation at constant prices for the first period might have been affected by real estates speculation in the early 1960s. But it seems safe to assume that, even if corrected of the effect of real estates speculation, the resulting shares of private consumption and gross fixed capital formation for 1961-63 would not differ significantly from those for 1971-73.

Another reminder is that in all the above calculations GDP does not include

TABLE II
PER CENT SHARES OF PRIVATE CONSUMPTION AND
GROSS FIXED CAPITAL FORMATION IN GDP

	Private Consumption		Gross Fixed Capital Formation	
	Current Prices	1966 Prices	Current Prices	1966 Prices
1961	87.65	84.41	21.39	21.22
1962	85.88	84.45	24.75	24.72
1963	81.70	82.42	28.30	28.31
1964	81.05	82.76	30.00	28.55
1965	77.28	79.03	28.32	26.50
1966	82.85	82.85	22.85	22.85
1967	79.16	78.20	17.21	18.97
1968	81.25	81.28	14.95	17.55
1969	77.19	78.46	15.44	17.43
1970	74.68	80.79	19.09	19.02
1971	76.02	86.80	22.73	22.06
1972	71.65	84.36	22.10	21.69
1973	74.32	85.01	21.59	21.82
1974	75.23	83.81	21.79	21.24
1975	76.10	83.93	21.31	20.46

Source: Based on [1, Tables 1 and 2].

increase in stocks. However, it can be easily shown that adjustment for this omission even to the tune of 3 per cent would only reduce the shares of private consumption and gross fixed capital formation to roughly 97 per cent of their original values; and against this has to be set the omission of newly reclaimed land in gross fixed capital formation. Thus, all considered, the two shares may remain well above 80 per cent and 20 per cent respectively.

It is interesting to compare the foregoing observation on the basis of CSD's estimates and the experiences of some other countries. Table III shows that, among the countries compared, only South Korea in the early 1950s and 1960s, the Philippines in the early 1950s, and Singapore in the early 1960s had larger or about as large shares of private consumption as Hong Kong in both 1961-63 and 1971-73 and, except Japan, all other countries (including developed economies) had smaller shares of gross fixed capital formation than Hong Kong in 1961-63. The former phenomenon—the considerably larger private consumption share in Hong Kong than in most other countries even in the early 1960s—seems rather strange considering that the Hong Kong economy then had been probably better developed than all other Asian countries except Japan. What surprises us even more is that, with the exception of the developed countries whose private consumption shares have been stabilized at a relatively small share (50 per cent), the shares of all other countries have exhibited distinctly downward trends in contrast to the experience of Hong Kong. On the other hand, except East and Southeast Asia (excluding Japan) whose overall share of gross fixed capital formation has shown only a slight increase in 1971-73 as compared with 1961-63, the share of all other countries have demonstrated distinctly upward trends, again in contradiction to Hong Kong's experience.

TABLE III
COMPARISON OF PER CENT SHARES OF PRIVATE CONSUMPTION AND
GROSS FIXED CAPITAL FORMATION IN GROSS DOMESTIC
PRODUCT IN SELECTED COUNTRIES

	Private Consumption	Gross Fixed Capital Formation
Hong Kong (1966 prices):		
1961-63	83.76	24.75
1971-73	85.51	21.88
Singapore (1968 prices):		
1960-63	88.31	12.74
1971-73	67.85	33.42
Taiwan (constant prices):		
1951-53	76	14
1961-63	68	17
1971-73	53	25
South Korea:		
1953-55	85	13
1962-64	84	16
1971-73	72	24
Japan:		
1952-54	65	25
1961-63	52	37
1971-73	52	37
Philippines (approximate):		
1951-53	86	13
1961-63	79	19
1971-73	71	20
Thailand:		
1952-54	77	14
1961-63	73	19
1971-73	66	25
East and Southeast Asia except Japan (1970 prices):		
1961-63	76.2	16.0
1971-73	73.7	16.6
Caribbean and Latin America (1970 prices):		
1961-63	71.1	17.8
1971-73	70.3	21.5
Developed Market Economies (1970 prices):		
1961-63	60.1	20.6
1971-73	60.0	23.3

Source: Except for Hong Kong and Singapore (the figures for the latter being based on [9]), all are taken from Table 17 in Simon Kuznets, "Growth and Structural Shifts" (to be published together with papers by other writers concerning the development experience of Taiwan during the period 1950-75).

From the above observation, it seems obvious that CSD's estimates of private consumption, gross fixed capital formation, and GDP on which the two shares are computed need to be carefully scrutinized before they can be accepted for analytical purposes.

I now pass onto another component of GDP—*increase in stocks*, the estimates of which begin only from 1973 and have not been published by CSD until 1977. In contrast to Chang's estimates which I think are on the high side, CSD's estimates are surely much too low. While the former accounted for 32.3 per cent and 23.8 per cent of total gross fixed capital formation respectively in 1960–61 and 1961–62, the latter accounted for only 1.7 per cent, 4.6 per cent, and 1.7 per cent, respectively in 1973, 1974, and 1975. Correspondingly, Chang's estimates of *increase in stocks* figures 6.4 per cent and 4.6 per cent in GDP for 1960–61 and 1961–62 while CSD's estimates figured only 0.37 per cent, 1 per cent, and 0.37 per cent for the same years. As I observed when commenting on Chang's estimates, the ratio of *increase in stocks* to GDP generally does not exceed 1.5 per cent in developed countries and 3 per cent in most developing countries during the normal years. But the period 1973–75 was far from normal. The oil crisis and the rocketing of the prices of primary raw materials had pushed up the ratio of *increase in stocks* to GDP in many trade dependent countries. For example, it reached 4.3 per cent in Singapore in 1973, and 3 per cent and 4 per cent, respectively in 1973 and 1974 in Japan; and only in 1975 did Japan's ratio return to 1.5 per cent [9]. This suggests that CSD's estimates of *increase in stocks* for Hong Kong are far from reflecting reality and need to be thoroughly re-examined.

(4) It would be of interest to further observe the changes in the structure of private consumption in Hong Kong during the period 1961–75 to see whether the major private consumption components in CSD's estimates are at all reasonable. However, the manner in which private consumption was estimated, namely, first measuring (primarily by the commodity flow method) *total* "consumption expenditure of goods and services in the domestic market" and then *total* "consumption expenditure of households and private non-profit institutions" by adding expenditure of residents abroad and deducting expenditure of non-residents in the domestic market, makes it extremely difficult to conduct a fairly precise analysis. Here, I shall content myself with some rough observation on two major components of private consumption—*food and rents*, with reference to *beverages and tobacco* for comparison with other countries later. In Table IV, it is shown that the per cent shares of *food, beverages, and tobacco* and of *rents and water charges* are computed on two different bases, namely, *total* "expenditure on goods and services in domestic market" and *total* "expenditure of households and private non-profit institutions." This is because expenditure on *food, beverage, and tobacco* by non-residents are not separable while the estimates of *rents* are for residents only. As far as *food* is concerned, the shares shown in the table may be taken as approximation to those pertaining to private consumption as can be seen from the figures in parentheses computed on the assumption that one-fourth of "expenditure of non-residents" was on *food*. The

TABLE IV
CHANGES IN RELATIVE IMPORTANCE OF EXPENDITURE ON FOOD,
BEVERAGES AND TOBACCO, AND RENTS AT CURRENT PRICES

	Expenditure on Food, Beverages and Tobacco as % of Total "Expenditure on Goods and Services in Domestic Market"			Rents and Water Charges as % of Total "Expenditure of Households and Private Non-profit Institutions"
	Food	Beverages & Tobacco	Total	
1961	33.17 (33.14)	5.73	38.90	11.13 (12.07)
1962	32.61 (32.49)	5.97	38.58	11.20 (12.09)
1963	33.27 (33.26)	6.39	39.66	11.09 (11.92)
1964	33.14 (33.12)	6.01	39.15	11.82 (12.65)
1965	31.98 (33.08)	6.07	38.05	13.67 (14.57)
1966	31.28 (31.06)	5.22	36.50	13.90 (14.75)
1967	32.57 (32.49)	5.35	37.92	14.24 (15.06)
1968	30.44 (30.12)	4.82	35.26	14.12 (14.92)
1969	30.18 (29.82)	4.81	34.99	13.18 (13.93)
1970	29.92 (29.50)	4.74	34.66	12.24 (12.94)
1971	29.93 (29.59)	4.83	34.76	11.34 (12.02)
1972	30.51 (30.19)	4.98	35.49	11.36 (12.24)
1973	30.88 (30.66)	4.28	35.16	10.44 (11.27)
1974	33.07 (33.04)	3.90	36.97	11.29 (12.36)
1975	30.50 (30.27)	4.15	34.65	12.30 (13.67)

Source: Based on [1, p. 24].

Note: The figures in parentheses for food are obtained by deducting from total expenditure on food shown in the above source expenditure of non-residents on food assumed to be one-fourth of total "expenditure of non-residents" (as numerator) and at the same time adding this back to "consumption expenditure of households and private non-profit institutions" and deducting from it "expenditure of residents abroad" (as denominator), while the figures in parentheses for rents and water charges are obtained by deducting "expenditure of residents abroad" from "consumption expenditure of households and private non-profit institutions" (as denominator).

same may be also true of the shares of beverages and tobacco, and hence the whole group including food. As regards rents and water charges, the shares as shown are in general a little less than 1 per cent point below the figures pertaining to private consumption (in parentheses) and show about the same broad trend. The first thing about Table IV which strikes us as unusual is that the shares of food and of beverages and tobacco for 1961 and 1962 are both significantly smaller than Chang's 35.8 per cent and 35.4 per cent for food for 1960-61 and 1961-62 which we judge to be on the lower side and his 7.5 per cent and 7.4 per cent for beverages and tobacco for the two years which seem to us quite reasonable [2, p. 83]. What appears even more unusual is that, in contrast to the experience of other countries, not only the share of food, beverages, and tobacco appeared too small but the share of food showed a very gentle declining trend while that of beverages and tobacco fell at a considerably higher rate over the whole period 1961-75. Comparing 1961-63 with 1971-73, we observe from Table V that the share of food dropped only 8 per cent while the share of beverages and tobacco decreased over 20 per cent. As a matter

of fact, as shown in Table IV, food alone or food, beverages, and tobacco as a group had begun to be stabilized at a relatively small share (i.e., approximately 30 per cent for food and 35 per cent for the group) since as early as 1968, a phenomenon characteristic of the consumption pattern of the developed countries. However, it is noteworthy that, in one of the developed countries—Japan, the share of food, beverages, and tobacco as a group dropped from 40.7 per cent from 1961–63 to 33 per cent for 1971–73, the latter figure being exactly the same as Hong Kong's share of food alone for 1961–63. It may be further noted that the average of food of ten developed countries for 1950–58 was about the same as Hong Kong's share for 1971–73 while per capita GDP of the former countries was then far above that of Hong Kong during the latter period. It is possible that food prices in Hong Kong are considerably lower than in most (if not all) of the ten developed countries if one and the same period is compared, but it is very unlikely that they were any lower in Hong Kong during 1971–73 than in the developed countries during 1950–58. Furthermore, in another Asian city state, Singapore, whose share of food was even smaller than Hong Kong's for both 1961–63 and 1971–73, possibly due to still lower food prices; but it fell 15 per cent between the two periods as compared with a 8 per cent decrease for Hong Kong. And with a larger share of beverages and tobacco, Singapore ended up with exactly the same share of food, beverages, and tobacco as for Hong Kong during the first period, and a slightly smaller share during the second period. Another related factor which may also have to be taken into consideration is changes in the price structure over time. In Hong Kong, we are all familiar with the fact that food prices rose faster than the prices of beverages and tobacco and the consumer prices in general in the early 1970s.¹¹ It is possible that, if the shares are computed on the basis of constant prices rather than current prices, we would come up with a relatively smaller share for food and a relatively larger share for beverages and tobacco in 1971–73 than in 1961–63, which would look more reasonable than what appears now. However, the disparity between the share of food for Hong Kong and those for the other countries in the latter period would then become even wider than is shown in Table V (excepting Singapore but including the ten developed countries of 1950s).

Now let us move to the other item in Table IV—rents and water charges. On the surface, the figures for this item (both unadjusted and adjusted as shown in parentheses) look quite alright except for years since 1970. If all consumption expenditures are computed at constant prices, the apparent aberrations even for these later years would be largely removed. Furthermore, the figures seem quite compatible by international comparison. In spite of all these observations, however, it can be shown that these figures are probably also subject to downward bias. This is partly due to possible under-estimation of the rateable value of residential buildings on which the rent and rates estimates for Hong Kong Island, Kowloon, and New Kowloon were based and partly due to the arbitrary assumption that the rent and rates estimates for residential buildings in the

¹¹ See Consumer Prices Indexes in *Monthly Digest of Statistics*, 1975.

TABLE V
COMPARISON OF PER CENT SHARES OF FOOD, BEVERAGES,
AND TOBACCO IN SELECTED COUNTRIES

		Food	Beverages & Tobacco	Food, Beverages & Tobacco
(1) Hong Kong	1961-63	33.0	6.0	39.0
	1971-73	30.4	4.7	35.1
(2) Singapore	1961-63	31.2	7.8	39.0
	1971-73	26.4	7.3	33.7
(3) Taiwan	1961-63	49.4	7.7	57.1
		(51.4)	(6.3)	(57.7)
	1971-73	40.2	7.6	47.8
		(39.3)	(8.1)	(47.4)
(4) South Korea	1961-63	53.7	6.8	60.5
	1971-73	49.4	8.6	58.0
(5) Japan	1961-63			40.7
	1971-73			33.0
(6) 10 developed countries	1950-58	30.0	8.8	38.8

Sources: (1)=Based on Table IV; (2)=based on [9]; (3)=based on GDBAS, *National Income of the Republic of China*, various issues (figures in parentheses are computed on the basis of constant prices); (4) (5)=based on [9]; and (6)=Simon Kuznets, *Modern Economic Growth*, p. 221, Table 5.4.

New Territories was 13 per cent of the former estimates throughout the period 1961-70. In addition, projecting the 1970 estimate forward to 1975 by changes in the component rent index of the consumer price index might also have injected some downward bias in the estimates for 1971-75 since the rent index is too far out of line from the indexes of average unit flat price and average unit construction cost for the period.¹²

To justify the estimate for 1970, the base year for projection for the later years, CSD presented two alternative estimates based respectively on the 1971 Population and Housing Census and the estimated rent and rates of all types of dwellings in some detail, and showed that its own estimates fell in between the two. However, it should be pointed out that the number of households registered in the Population and Housing Census was 846,670 whereas the number of dwellings recorded was only 286,000 including government quarters [1, pp. 16-18]. Unless it can be assumed that each dwelling could accommodate

¹² The three indexes are shown below:

	Housing (Rents)	Unit Flat Price (Property Review)	Unit Construction Cost (Property Review)
1970	100.0	100.0	100.0
1971	102.0	145.8	115.4
1972	108.0	208.3	169.2
1973	116.4	229.2	192.3
1974	125.1	208.3	176.9
1975	136.0	229.2	200.0

approximately 2.96 households (which seems impossible, considering that the average size of the smallest dwellings was only 341.5 sq. ft. while that of large flats was only 1,251 sq. ft.), the number of dwellings seems grossly under-recorded. On the other hand, to the extent that average rent can be computed from these same data, the average rent per dwelling (approximately H.K.\$420 per month) was about 2.66 times the average rent per household (approximately H.K.\$158 per month), the latter not including houses shown to be "rent free" in the Population and Housing Census and owner-occupied premises whose rent was separately estimated to be only a little more than one-fourth of the total for houses covered in the census. These differences in the number of households and dwellings on the one hand and in the average rent on the other perhaps explain the apparent closeness of the total estimated rents based on these two sets of data. Further examination suggests that even the highest of the three different estimates (i.e., based on the estimated rent and rates of all types of dwellings) is subject to downward bias. This is because approximately one-third of the total population was accommodated by public housing in 1970. On the principle of imputation based on market valuation, the rent estimates for these households should all be upward revised. This means that the rent total as estimated by CSD for 1970 is far too low. And in so far as public housing has been continually expanded relative to population over the years, it is obvious that total rent was under-estimated to a greater extent in the later years than in the earlier years. And this might also have distorted the share of rent over time as shown in CSD's estimates.

(5) Lastly, I shall briefly discuss the discrepancies shown to exist between CSD's estimates of GDP from the expenditure approach and from the income approach [1, Appendix]. For this purpose, it is convenient to recapitulate [1, Tables 1 and 2 in the Appendix] in terms of per cent shares. A glance at Table

TABLE VI
PER CENT SHARES OF GROSS DOMESTIC PRODUCT AND EXPENDITURE:
1970-74 (AT CURRENT MARKET PRICES)

	1970	1971	1972	1973	1974
Compensation of employees	53.8	56.5	55.8	52.2	53.8
Operating surplus (gross of depreciation)	38.3	41.6	47.4	49.9	40.5
Indirect taxes less subsidies	5.8	6.0	6.6	6.9	5.0
Difference between income estimates and expenditure estimates	2.0	-4.2	-9.7	-9.0	0.7
Gross domestic product	100.0	100.0	100.0	100.0	100.0
Private consumption expenditure	74.7	76.0	71.7	74.3	75.2
Government consumption expenditure	6.4	6.0	6.5	6.4	7.1
Gross domestic fixed capital formation	19.1	22.7	22.1	21.6	21.8
Increase in stocks				0.4	1.0
Exports less imports of goods and services	-0.2	-4.8	-0.3	-2.6	-5.1
Expenditure on gross domestic product	100.0	100.0	100.0	100.0	100.0

Source: Based on [1, Table 1 in Appendix].

TABLE VII
PER CENT SHARES OF GROSS DOMESTIC PRODUCT BY INDUSTRIAL
ORIGIN: 1970-74 (AT CURRENT FACTOR COST)

	1970	1971	1972	1973	1974
Agriculture and fishing	2.2	2.0	1.8	1.7	1.6
Mining and quarrying	0.2	0.2	0.1	0.1	0.1
Manufacturing	30.8	29.3	28.0	27.6	25.0
Electricity, gas, and water	1.9	1.8	1.7	1.5	1.6
Construction	3.3	3.7	4.1	4.2	4.7
Wholesale and retail trade, and restaurants and hotels	21.9	20.1	20.6	22.3	21.5
Transport, storage, and communication	7.4	6.4	5.7	5.8	6.2
Financing, insurance, real estate, and business services	14.5	18.2	21.6	20.2	18.0
Community, social, and personal services	17.2	17.7	15.8	16.0	18.2
Activities not adequately defined	0.6	0.6	0.6	0.6	3.1
All industries	100.0	100.0	100.0	100.0	100.0

Source: Based on [1, Table 2 in Appendix].

VI immediately reveals the discrepancies between the estimates of GDP from the income approach and from the expenditure approach, and it is apparent that to some extent this was due to the unavailability of estimates of increase in stocks for 1970-73 and for their under-estimation for 1973 and 1974 as pointed out before. In other words, were it not for these deficiencies, the positive margins of the GDP estimates from the expenditure approach over those from the income approach for 1970 and 1974 would probably have been nil while the negative margins during 1971-73 could be 2 or 3 per cent smaller. While this is true, one is at a loss to find two important sources of GDP, namely, "ownership of dwellings" and "public administration and defense," missing in the estimates from the income approach whose per cent shares by industrial origin are shown in Table VII. It is possible that they have already been included in some other items such as "community, social, and personal services." But, to the extent they have not, the "complete" GDP estimates from the income approach for 1970-74 would be even larger than the estimates from the expenditure approach as they appear in Table VI.

It is of particular interest to note that the discrepancy between the two sets of official GDP estimates suddenly widened during 1971-73.¹³ In the following I suggest one explanatory factor which I consider most crucial to the understanding of such changes. It may be recalled that, in explaining the variations in the per cent share of gross fixed capital formation in the 1960s in (3) of this section, I attach particular importance to the effect of speculation in real estates in general and in land in particular. I believe that recurrence of such speculation in the early 1970s had the same effect as witnessed by the abrupt jumps in the share of gross fixed capital formation from 19.1 per cent in 1970 to over 22 per cent in 1971 and 1972 which managed to hold on in the following two years.

¹³ The same can be said even if the above-mentioned omissions were made up.

This undoubtedly contributed to the above described changes in the discrepancy between the two sets of GDP estimates from 1970 onward. However, there was a special force in this period which seems far more important than the effect of speculation in real estates, although the two actually went hand in hand and reinforced each other. This special force I find to be stock speculation. The effect of stock speculation can be clearly observed from the steady increase in the per cent share of "operating surplus" from 1970 through 1973 and its sudden fall from 1973 to 1974 as shown in the upper part of Table VI. It is obvious that "operating surplus" as such has included "capital gains" and "capital losses" from stock speculation, and Table VII further pinpoints the major source of "capital gains" and "capital losses" to be "financing, insurance, real estate, and business services" grouped as a sector. It is primarily this group that was most actively engaged in the flurry of stock speculation during this period and it is "capital gains" and "capital losses" made by this group from stock speculation that contributed first to the rapid rise and finally to the sudden fall in the share of operating surplus of all industries as a whole. As Table VI shows, in 1972 and 1973 when stock speculation was at its height, total operating surplus increased at such fantastic proportions that the resulting GDP estimates from the income approach exceed the estimates from the expenditure approach by as much as 9.7 per cent and 9.0 per cent for the respective years. The picture totally changed in the following year. The crash in the stock market which already occurred in the second half of 1973 precipitated in 1974 when the effect of world economic recession began to be felt. This resulted in the decrease of the share of operating surplus from 49.9 per cent in 1973 to 40.5 per cent in 1974. It may be a sheer coincidence that the share of operating surplus 49.9 per cent less the difference between income and expenditure estimates (9 per cent) gives 40.9 per cent for 1973, which differs from the share of operating surplus 40.5 per cent for 1974 by 0.4 per cent compared with the difference between income and expenditure estimates 0.7 per cent for the same year. But it does show that the narrowing down of the discrepancy between the two GDP estimates for 1974 was primarily due to the lowering of the share of operating surplus just as the widening of the discrepancy in the previous years was primarily due to the steady rise in the share of operating surplus. As in the case of speculation in real estates, "capital gains" and "capital losses" from stock speculation cannot be coped with simply by converting the current price estimates of GDP from either one of the two approaches to the constant price estimates. But, if it is considered that they should be removed from the GDP estimates (as I believe they should, not only with a view to narrowing down the discrepancy between the GDP estimates from the income approach and from the expenditure approach), a method of adjustment has to be devised somehow.

VI. CONCLUDING OBSERVATION

It is natural that a paper of this nature cannot have a conclusion. Here I propose to compare the official estimates of per capita GDP in Hong Kong

and Singapore for 1965–75, in 1966 Hong Kong dollars in the hope that in the end the discussion will come up with some suggestion regarding the order of magnitude of the official GDP estimates of Hong Kong. The starting year for comparison 1965 is not deliberately chosen but is forced upon this writer, because it is the year for which the official GDP/NI statistics began to be available in Singapore. Yet, this happens to be a very interesting year from our point of view. Perhaps the reader has noticed from Table VIII that the estimates of per capita GDP for Hong Kong and Singapore are very close to each other in this year, with Singapore's figure only 1.5 per cent higher; but the disparity between the estimates for the two city states has gradually but steadily widened since then. As a result, Hong Kong's per capita GDP was only 65 per cent of Singapore's in 1975.

If this sounds somewhat discordant, Singapore's Premier Lee Kuan Yew confused us even more by stating that "in 1963, per capita income per annum in Hong Kong was barely more than half Singapore's. By last year, 1969, the estimates were that Hong Kong has surpassed Singapore's per capita annual income" [6]. However, Premier Lee's remark may well suggest that the published official GDP estimates of this colony are on the lower side. Comparing Hong Kong's per capita GDP with Singapore's for 1969 as shown in Table VIII, we find that the latter is 17.6 per cent higher than the former. If we believe Premier Lee's economic intelligence and if we also believe that Singapore's GDP estimates are more reliable (which could be true), then Hong Kong's actual per capita GDP for 1969 could have been under-estimated by more than 17.6 per

TABLE VIII
COMPARISON OF PER CAPITA GDP AND AVERAGE DAILY
WAGES IN HONG KONG AND SINGAPORE

Year	Per Capita GDP (1966 HK\$)		Average Daily Wages (1966 US\$)	
	Hong Kong (1)	Singapore (2)	Hong Kong (3)	Singapore (4)
1965	2,902	2,946	1.73	2.11
1966	3,055	3,194	1.77	2.00
1967	3,245	3,494	1.71	2.07
1968	3,319	3,911	1.73	2.06
1969	3,723	4,380	1.86	2.00
1970	3,842	4,905	2.02	1.95
1971	3,882	5,424	2.45	2.11
1972	4,129	6,046	2.58	2.27
1973	4,623	6,628	2.70	2.27
1974	4,627	6,940	2.56	2.30
1975	4,652	7,120	2.60	2.41

Sources: (1)=[1]; (2)=Singapore, Ministry of Culture, Publicity Division, *Singapore 1976* (Straight dollar is converted to Hong Kong dollar at the exchange rate for 1966); (3)=United Nations, *Statistical Yearbook, 1976*, and Hong Kong, Census and Statistics Department, *Monthly Digest of Statistics*, various issues; and (4)=United Nations, *Statistical Yearbook, 1976*, and Singapore, Ministry of Culture, *Singapore 1976*.

cent. This only confirms the general observations in the preceding section of the present paper.

I think the strength of Premier Lee's remark largely lies in the comparison of the two city-states' average daily wages. Prior to 1969, average daily wages in U.S. dollars in Singapore far exceeded those in Hong Kong in both nominal and real terms. However, nominal wages of the two city-states became equal in 1969 though Singapore's real wages remained higher. What is more important is that since then the relative position has been totally reversed, with Hong Kong leading in both nominal and real wages (for comparison of real wages, please see Table VIII). Since economically active population accounts for an appreciably larger fraction of the total population in Hong Kong than in Singapore,¹⁴ this means that on the average per capita labor income in Hong Kong was appreciably higher, at least since 1970. Therefore, unless property income figured so large in Singapore's total GDP that its per capita property income was overwhelmingly higher than Hong Kong's over these years (which I seriously doubt), the discrepancy between the estimates of per capita GDP of the two city-states must be explained primarily by the downward bias in Hong Kong's figures. And, judged from discussions in the preceding section, I suggest that under-estimation of Hong Kong's GDP is systematic; in other words, the estimates for the earlier years could also be subject to downward bias in varying degrees.

In this connection, it is gratifying to note that the Census and Statistics Department had compiled a "commodity flow" table on the basis of the 1973 Census of Industrial Production to evaluate the accuracy of the expenditure estimates and came up with the conclusion that "preliminary results of this study indicate that the GDP estimates for 1973 should be considerably higher than the existing estimates" [1, p. 1]. Although no revision has yet been made in the 1978 issue of the *Estimates of Gross Domestic Product* as promised, this could be because revisions involving estimates for so many years take longer time than expected. Let us hope that CSD will have put a new face on the *Estimates* by the time when this paper is published.

¹⁴ Economically active population as percentage of total population:

	1966	1971	1975	1976
Hong Kong (census and bi-census reports)	39.2	42.0		44.3
Singapore (<i>Singapore</i> 1976)	29.7	34.4	37.9	

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