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SOME REFLECTIONS ON THE COMPARABILITY OF REAL NATIONAL INCOMES OF INDUSTRIALIZED AND UNDER-DEVELOPED COUNTRIES

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I. INTRODUCTION

REAL income is difficult to define; it is even more difficult to measure. This is true of individuals, in spite of their living in the same country, and having more or less similar conceptions regarding the standard of living. The amount of satisfaction that even the same person derives from the same money income at different periods of time not only defies statistical detection, but also lacks an adequate base in logic. When it comes to a question of comparing the real income of different individuals, many difficulties, both conceptual and statistical, arise; and the problem becomes almost insoluble when one aggregates the real incomes of individuals into national real incomes and then seeks to compare them. As pointed out by Loreto Dominguez, 'Comparing levels of national income in real terms in two periods as between countries is one of the most difficult tasks an economist or statistician encounters, for it is impossible to avoid the welfare concepts which explicitly or implicitly always enter into the analysis.'[1] As Professor Kuznets has pointed out, 'The goal of economic activity is to satisfy wants of individual consumers who are members of the nation present and future. This is the only goal that seems to underlie the performance of a variety of economies and the only one that can be associated with the economic aspect of social welfare.'[2] The discussion has to be of national income as a measure of net product, an approximation to social welfare; and such a discussion runs into the most awful difficulties, both conceptual and statistical, especially when one seeks to compare national incomes as measures in terms of 'better off' or 'worse off' of different economies. Nevertheless, such comparisons are daily being made. The

[1] Loreto M. Dominguez, National Income Estimates of Latin-American Countries, *Studies in Income and Wealth*, National Bureau of Economic Research, Vol. X, 1947, p. 234.

[2] Simon Kuznets, Government Product and National Income, *Income and Wealth Series I*, International Association for Research in Income and Wealth, Bowes & Bowes, Cambridge, 1951, p. 180.

statistical office of the United Nations Organization has brought out two annual reports giving comparative figures of the national incomes of 32 different countries; and more recently the same organization has brought out a document on the volume and distribution of national income in under-developed countries. The latter document, while cautioning its readers about the dangers of comparing the national incomes of developed and under-developed countries on account of the differences in their organization of production, social structures, etc., nevertheless does make such a comparison. It states:

> Thus, Asia, with over half the world's population, has only one-tenth of the world's national income. North America, on the other hand, with less than 10% of the world's population, accounts for nearly 45% of the world's national income. Asia, Africa and South America together, with over 65% of the world's population, receive somewhat in excess of 15% of the world's national income while the remaining areas, with only 35% of the world's population receive about 85% of the world's income.[1]

And these remarks have been carried over the world's press and received a great deal of publicity in the under-developed countries.

I think, therefore, that it is worth while to consider afresh this question of comparability of national incomes. Obviously, while the comparison is instituted in monetary terms, the objective behind it is a comparison of national incomes in real terms, in terms of what Professor Kuznets calls 'better off' or 'worse off'. The problem presents special difficulties if the national incomes sought to be compared refer to such diverse economies as those of what are called developed and under-developed countries, countries for example like the United States and India. I propose to discuss below some of the factors, both conceptual and statistical, that have to be taken into account when instituting such a comparison.

II. NON-MONETARY INCOME

To begin with, not all activity which leads to the emergence of satisfaction is classed as economic activity. Beyond a certain point the distinction between producing activity and consuming activity fades into the air, and convention and social structure

[1] *Volume and Distribution of National Income in Under-developed Countries*, United Nations Economic and Social Council, p. 7, para. 16 (mimeographed).

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rather than logic decides the category under which they should be classified. Not all even of what is called economic activity leads to marketed output, either of the goods or services that are the result of such activity, and the degree of development that determines the classification. Nor is it clear even of the marketed output that it represents net concepts in all cases or that it is indicative of corresponding differences in satisfactions, which after all is the concept most germane to welfare. And finally, there is the problem of differences in valuations, and the almost intractable question of convertibility into real terms of different monetary units.

This brief summary is, I believe, sufficient to indicate the complexity of the question of comparability of real national incomes. For the purposes of this paper, I shall concern myself with only a few broad matters of principle, leaving questions of detail for perhaps a later occasion.

The first question when considering comparability is the consideration of what is excluded from the computation of the national incomes which are compared. Professor Kuznets[1] is perfectly right when he remarks that 'limiting national income to results of economic and productive pursuits forced us to exclude many satisfaction-yielding activities, primarily those conducted within the family, that may be considered part of life in general rather than economic activity proper'. I would also agree with his observation that 'exclusion of the products of the family economy, characteristic of virtually all national income estimates seriously limits their validity as measures of all scarce and disposable goods produced by the nation'.[2] Mr. Solomon Fabricant[3] rightly points out that, as the output of family economy is largely omitted, even complete identity of coverage of various categories of production, as well as identical treatment of each, will not ensure full comparability among the national income figures of different countries. 'The relative importance of the omitted categories will vary from country to country, and accordingly the effective percentage of coverage of total production by the national income figures'. Obviously

[1] Simon Kuznets, *National Income and its Composition, 1919–1938*, Vol. I, National Bureau of Economic Research, New York, 1941, p. 55.

[2] *Ibid.*, p. 10.

[3] Comment by Solomon Fabricant on the paper National Income Originating in Financial Intermediaries, by Dwight B. Yntema, *Studies in Income and Wealth*, Vol. X, *op. cit.*, p. 60.

then, when comparing real national incomes, one has to inquire into the extent to which the products of what is called family economy are excluded and its comparative significance on the degree to which national income figures fail to be a true index of productive activity.

I am surprised, however, at the persistence with which the belief is held that the national incomes of under-developed economies exclude more of the activities that are pertinent to economic welfare than those of the more developed economies. Thus, e.g., the first U.N. Report on *National Income Statistics*[1] specifies the following five types of non-monetary items, viz.:

(1) Unpaid services of housewives;

(2) Net rental value of owner-occupied houses;

(3) Services of durable consumer goods;

(4) Farmers' consumption of own produce and similar items;

(5) payments in kind;

and proceeds to state that the fact that not all non-monetary items are included may, where inter-country comparisons are made, obscure the true picture to some extent, adding: 'This is particularly the case in comparison between industrialized and under-developed countries, since in the latter subsistence income forms a considerable part of total output.'[2] The U.N. Report on 'Volume and Distribution of National Income in Under-developed Countries'[3] states that 'The conceptual differences are particularly serious in the case of comparisons between under-developed and industrialized countries because more or less of the national output in the various under-developed countries is produced and consumed without passing through commercial channels. This raises a problem of including the whole of such product in the national income estimate and of evaluating it in terms of money.' There seems to be some kind of an implicit assumption that the products of the family economy are altogether excluded from the computation of the national incomes of under-developed countries. In the alternative, the implicit assumption seems to be that certain non-marketed services excluded from the national incomes of indus-

[1] *National Income Statistics, 1938–1948*, Statistical Office of the United Nations, 1950, p. 8.

[2] *Ibid.*, p. 9.

[3] 'Volume and Distribution of National Income in Under-developed Countries', United Nations Economic and Social Council, p. 4, para. 6.

trialized countries are somewhat unimportant as compared to the similar items for under-developed countries, and that the latter are, in comparative terms, more significant.

The first assumption is not correct. If we take the recent estimate put forward by the Indian National Income Committee of the national income of India for 1948–49[1] the following items are all included:

(1) Net rental value of owner-occupied houses;
(2) Farmers' consumption of own produce;
(3) Activities ancillary to agriculture, including processing, marketing and transport services performed by the cultivator;
(4) Payments in kind of urban and rural labour, and also of army and other government servants.

The fact that the family economy or the household enterprise contributes a large share of national output in India as compared to a highly industrialized country like the United States is undoubtedly true; it is also true that this does raise difficulties in regard to the problem of imputation, and valuation of these non-marketed services, and there is reason for honest differences of opinion regarding the statistical methods followed; but this does not mean that these non-marketed goods and services are not included in the national income of India. Subsistence income therefore does find inclusion in the national incomes of under-developed countries, and this includes all the services which find inclusion in the national incomes of industrialized countries.

Let me now turn to the second point, viz. that certain non-marketed services excluded from both national incomes lead to an under-estimation of the real income of the under-developed countries. The most hardy example adduced for this purpose is the services of housewives.

There is no doubt that the services of housewives do contribute to economic welfare and therefore to the real national income. But are they negligible in an industrialized country and significant in an under-developed country?

Let me take, e.g., the United States. In his monumental work on *National Income and its Composition*, 1919–1938[2] of the

[1] First Report of the National Income Committee, April 1951, Ministry of Finance, Government of India.

[2] Simon Kuznets, *National Income and its Composition, 1919–1938*, *op. cit.*, Vol. II, p. 434.

United States, Professor Kuznets points out that the rough dollar equivalent of housewives' services amounted to some 23 billion dollars or somewhat more than one-fourth of the total national income in 1929. It is not likely that the proportions will be any different in the case of India, especially when it is recalled that the proportion of gainfully occupied population in India and the United States for comparable years (1948–49) is practically the same, being 39 per cent in the case of India as against 40 per cent in the case of the United States. Nor is it correct to assume that the population not gainfully occupied in the United States is merely indulging in consuming activity while that in India is significantly engaged in producing activity in the field of non-marketed services. True, the non-marketed services of an economic kind that housewives or householders produce in India are not identical with those that are produced in the United States, but there can be no denying the fact that such services do constitute a good part of the activity of households in the latter country. Thus, e.g., a great deal of washing, cleaning, sweeping, cooking, laundering and similar activities are performed by housewives in the United States; in truth, such activities are much more prevalent in that country in the case of certain income groups than they are in the under-developed countries with their semi-feudal social structures and the use of paid domestic servants by their higher income groups. Moreover, the very extent and nature of industrial development makes it possible, in some cases actually necessary, for non-marketed services to be produced by households, even though such services also form the subject of commercial operations. A few examples I may mention of services of this kind are motor driving, house repairing, knitting, home tailoring, clothes repairing, house painting, furniture repairing, etc. I have long been stressing this point that the non-marketed services of households which are not included in computations of national income are significant for both industrial and under-developed countries, and that therefore their exclusion does not lead to any special under-estimation of the real income of under-developed countries as compared with those of the industrialized countries. I am therefore very happy to find recognition of this point in the second U.N. Report of National Incomes.[1] I can do no better

[1] *National Income Statistics, 1938–1948, op. cit.*, p. 16.

to support my point than to quote the following extract from that document:

> As an argument for inclusion of the unpaid services of housewives and other members of the family, it is stated that a more complete picture is thus obtained of the total output of goods and services in a nation's economy. It is not always easy to foresee how inclusion would affect intercountry comparisons. *In highly developed countries characterized by shortage of paid domestic help, the unpaid services of housewives may be very substantial and to these should be added such services as driving one's own automobile or repairing one's house, items which are likewise not included in the conventional definition of national income.* (Italics mine.)

I trust that after this the bogey of non-inclusion of unpaid services of housewives in the under-developed countries will be laid at rest in discussions on inter-country comparisons of real national income.

There is, however, one important item of non-marketed service which is excluded from both national incomes, but which exclusion does definitely make for under-estimation of real income much more in the one case than in the other. I refer to services of durable consumption goods or item 3 on the U.N. list of non-monetary items.

There is no doubt about the fact that durable consumption goods yield continuing flows of satisfaction and therefore make a legitimate difference to economic welfare and real national incomes. In the industrialized countries, production of durable consumption goods forms a significant proportion of the national output, and the stock of such goods in the hands of consumers is constantly growing. Thus, as pointed out by Dr. Margaret Reid,[1] even if the list of durable consumption goods be confined only to major furnishings and equipment and automobiles, 'the rate of growth of consumer durables rose from 9.6% of the value of finished commodities in 1879 to 18.1% in 1937'. There is no doubt that one of the significant factors constituting the difference in the real national income of an industrialized country and an under-developed country is the substantial income which the former derives from the services of its stock of durable consumption goods; and I am convinced that the imputed value involved would be positive and signifi-

[1] Margaret G. Reid, Distribution of Non-money Income, *Studies in Income and Wealth*, Vol. XIII, 1951, p. 128.

cant, even if account is taken of repairs and depreciation charges contingent on their treatment as capital equipment. It is indeed very surprising that while national income estimators in the field of inter-country comparisons have been quick to notice the alleged effect of the non-inclusion of housewives' services on comparability of real national incomes, they have not given attention to the significance of the non-inclusion of the services of durable consumption goods in this regard. I believe that this non-inclusion leads to a real element of under-estimation even in the case of industrialized countries in comparison with the more highly industrialized among their number; it is very much more so, when comparisons are instituted of the real national incomes of industrialized and under-developed countries. I would therefore respectfully request Dr. Derksen to take note of this point in his next edition of the U.N. Report on National Incomes.

Somewhat similar is the effect on comparability of the non-inclusion of the net rental value of public buildings. Here again is a significant factor that constitutes the difference in the real national incomes of different countries; public buildings undoubtedly yield continuous flows of economic satisfactions and therefore contribute to economic welfare and real national income. The imputed value of their services is not covered by the cost of their maintenance; and there is no doubt that a balance from the income attributable to them escapes inclusion in current computations of national income. It is true that this item is excluded from the national incomes of both industrialized and under-developed countries; but the exclusion is far less significant in the case of the latter than in that of the former in terms of the effect on real income. It is therefore necessary to note this as a qualifying factor on inter-country comparisons of real national incomes, especially when the comparison is between industrialized and under-developed countries.

It is sometimes contended that services included in the national incomes of industrialized countries do not find inclusion in those of under-developed countries, as they are carried on outside the monetary sphere. Thus, it has been stated, 'Various cultural, recreational, and other activities performed commercially in the industrialized countries are carried on in the under-developed countries, particularly in the rural areas, outside the monetary sphere, and do not give rise to monetary incomes.'[1] In fact, such activities are carried on outside the monetary sphere, perhaps to an even larger extent, in the educated, organized and urbanized communities of the industrialized countries, while even in the under-developed countries such activities are performed commercially. In fact, one of the most significant factors constituting the difference in the real national incomes of industrialized and under-developed countries is the much larger quantum of cultural, recreational and similar services in the former, due no doubt partly to their being the subject of commercial and specialized operations, but also due partly to the much more effective and efficient way in which they are the subject of activity outside the monetary sphere. I am not therefore convinced that the exclusion of non-marketed activities of this kind results in an under-estimation of the real national incomes of under-developed countries nor that the inclusion of marketed or commercial activities of this kind leads to an over-estimation of the real national income of the industrialized countries.

To sum up this part of the discussion, viz. on the significance of non-marketed output of goods and services in computations of national incomes of industrialized and under-developed countries:

Every economy, whether it is industrialized or under-developed, contains non-monetary items, some of which find an imputed valuation in computations of national income, and some of which do not find such inclusion. The items which find inclusion in the case of the industrialized countries also find inclusion in the case of the under-developed countries, though they are subject, in the latter case, to the statistical and even conceptual difficulties inherent in imputation. The items which are not included are the same in the case of both types of countries. These are (1) service output – mainly intended for direct consumption or final services – of households, (2) services of durable consumption goods, and (3) services of public buildings or durable consumption goods owned by the community. The exclusion of the first does not lead to any significant under-estimation of the real national income of the under-developed countries as compared to that of the industrialized countries; it may possibly lead to the opposite result, especially if the

[1] Volume and Distribution of National Income in Under-developed Countries, United Nations Economic and Social Council, para. 19, p. 8.

comparison is between a highly industrialized country like the United States and a relatively under-developed country like India. The exclusion of items (2) and (3) lead to a definite under-estimation of the real income of the industrialized countries as compared to that of the under-developed countries, though it may be difficult to give this difference a statistical magnitude. This difference is greater, the greater the degree of industrialization in the industrialized country as compared to the under-developed economy.

III. NET VERSUS GROSS INCOME

Having discussed the significance of non-monetary items in national income computation on the comparability of real national incomes, the next question is about the items which are included. How far does the bundle of goods and services that are included in the case of both industrialized and under-developed countries represent net rather than gross quantities? Is the problem of netting the same for both these types of economies or are special deductions necessary in one case or the other in order to bring about comparability of real national incomes?

Before dealing with these questions, which are quite complex and do not lend themselves to any categorical or unambiguous answer, it would be useful to mention and dismiss certain other items concerned with netting. Thus, the deduction which is made for depreciation is not uniform for all countries, either in the items for which depreciation allowances are made or in the rates at which the allowances are made or the basis on which the allowances are calculated. This is true even of the industrialized countries themselves; it is more so in the case of the industrialized countries in comparison with the under-developed countries, especially in regard to the admissibility or otherwise of allowing depreciation on land. I doubt, however, if significant differences in respect of comparability of real national incomes arise from this factor, though it would be useful if comparative studies were made on the subject.

Then there is the question of allowances for depletion of natural resources, especially mines. The statisticians have decided that it is not necessary to make a deduction on this account; and therefore no deductions are made for depletion from the national incomes either of industrialized or under-developed countries. This, however, does not mean that its effect on the netness of the national income is the same in the case of all countries; it all depends upon the importance of mining activity in the national output of goods and services. If we take the United States and India, for example, the proportion to total occupied population of the population occupied in mining is 1.7 and 0.4 per cent respectively for the two countries in 1948, while the proportion of the mining industry's contribution to their respective national incomes for that year was 2.2 and 0.7 per cent respectively. Obviously, in this case, the non-allowance of depletion makes for a relative over-estimation of the income of the United States as compared to that of India. There would, however, be other cases of industrialized and under-developed countries, where mining would be proportionately more important in the latter, and therefore the over-estimation of real income would be greater in their cases. In comparing real national incomes, therefore, it is useful to make a note of the extent to which mining forms a part of the national incomes and therefore includes an element of grossness in the computations.

There is one more item which finds inclusion in the national income calculations of some countries, but which does not find a place in those of others. This is the vexed item of changes in the volume and value of inventories. Largely for want of data rather than on any difference in principle, this item does not find inclusion in the national income computations of under-developed countries. The recent estimate of the national income of India, for example, does not make an allowance for this item either plus or minus; while the national income of the United States definitely includes it. It is very difficult to determine on an *a priori* basis whether this results in over-estimation or under-estimation of the real income of India as compared to that of the United States, but there is no doubt that it does qualify the comparison; and this difficulty is bound to remain for a long time in the case of the under-developed countries as by the very nature of their economies, statistics either of quantity or of value of inventories will continue to be difficult to obtain.

Now I return to the question of whether any special deductions are necessary in one case or the other from the bundle of goods and services representing the national incomes of industrialized and under-developed countries in order that they both represent *net* quantities. It is a well-known fact that services claim a much greater share of national product in the case of industrialized countries as compared with under-developed countries; and this is usually due largely to the greater rôle of activities concerned with distribution and government. The following table clearly reveals the position as regards India and the United States for the year 1948:

Thus items 4 to 7, or what may broadly be termed the service sector, accounts for 50 per cent of the occupied population and 50.4 per cent of the national income in the case of the United States, while the corresponding figures for India are only 17.8 and 31.8 per cent respectively. The question arises whether all this income that originates from the service sectors, particularly those that fall under items 4 and 6, viz. commerce, transport, communications, and government represent corresponding real additions to the national income, especially in the context of inter-country comparisons of real national income. From one point of view it is undoubtedly true that the greater rôle of services is characteristic of a developed economy, and that the inclusion of the service sectors in both national incomes is necessary for determining differences in their real national incomes. But does not the greater magnitude of the service element under items 4 and 6 in the U.S.A. include at least a portion which represents a cost rather than an income factor and therefore calls for a deduction in order to validate its use in comparisons of real national income? Professor Kuznets has answered this question in the affirmative and made several suggestions for taking this into account in order to ensure validity of inter-country comparisons. I quote:

> Three suggestions seem to be in order. First, such activities as beyond any doubt represent payments by consumers for services that are nothing but occupational facilities should be excluded from the estimates for both types of country. Clear examples are commutation to and from work, and payments to unions and employment agencies; but one might add almost the entire gamut of what the Department of Commerce classifies as business services in its estimate of consumers' outlay (bank fees, brokerage fees, etc.). Second, where in industrial societies the costs of consumer services are inflated by the difficulties of urban life, some revaluation of these services by comparison with their costs in

TABLE I[1]
(Figures in millions)

	Distribution of Occupied Population				National Income by Source			
Items	India	%	U.S.A.	%	India (Rs.)	%	U.S.A. ($)	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Agriculture	90.5	68.2	7.4	12.5	41,500.0	50.1	22,468.0	10.0
2. Mining	0.6	0.4	1.0	1.7	600.0	0.7	4,903.0	2.2
3. Manufacture	18.1	13.6	21.1	35.8	14,400.0	17.4	84,510.0	37.4
4. Commerce, transport, communications	10.7	8.1	17.6	29.9	17,000.0	20.5	79,941.0	35.4
5. Professions and liberal arts	5.0	3.8	2.7	4.5	3,200.0	3.9	9,928.0	4.4
6. Government services	3.6	2.7	6.2	10.5	4,600.0	5.6	17,823.0	7.9
7. Domestic services	4.2	3.2	3.0	5.1	1,500.0	1.8	6,167.0	2.7
8. Total	132.7	100.0	58.9	100.0	82,800.0	100.0	225,740.0	100.0

[1] *Note:* Figures in col. (2) and col. (6) relating to India for the different items are taken from Table 4, p. 31, of the *First Report of the National Income Committee*, April 1951. The total national income for India given in above table does not include income from house property.

Corresponding figures in col. (4) and col. (8) relating to United States are compiled from Table 28 and Table 13 in the July 1949 issue of the *Survey of Current Business.*

In order to make the figures available therein comparable to the figures for India the following classification is made:

AGRICULTURE AND MINING as given in Table (13) and Table (28) in *Survey of Current Business:* MANUFACTURE: Total of: Contract construction, manufacturing, Hotels and other lodging places, commercial and trade schools and employment agencies, miscellaneous repair services and hand trades, motion pictures, amusement and recreation, except motion pictures, Federal government enterprises and State and Local Government enterprises.

COMMERCE, TRANSPORT AND COMMUNICATIONS: Total of: Wholesale and retail trade, Finance, insurance and real estate, Transportation and communications and public utilities.

PROFESSIONS AND LIBERAL ARTS: Total of: Business services, Medical and other health services, Legal services, Engineering and other professional services, educational services, religious organization and non-profit membership organizations.

GOVERNMENT SERVICES: Total of: Federal-general Government, Civilian (except work relief), Military, work relief and State and Local-general Government, public education, Non-school (except work relief) and work relief.

DOMESTIC SERVICES: Total of personal services and private households.

The United States National Income excludes the quantity relating to '*Rest of the World*'.

> rural communities is in order. The magnitudes involved, especially in such an item as cash and imputed rent on housing are quite large. Finally, it seems indispensable to include in national income only such governmental activities as can be classified as direct services to ultimate consumers. This most important and inescapable step is urged here in full cognizance of the statistical difficulties, which are great. But if national income figures are to retain any meaning as measures of the real flow of goods to ultimate consumers or to stock of capital the huge duplication piled up by considering all governmental activity as a final product must be removed. Such a step is important and necessary even for intra-country comparisons over time; it is equally if not more important for comparisons between industrial and pre-industrial societies.[1]

I must confess to a considerable measure of sympathy for the substance of Professor Kuznet's contention. The services he mentions, however, are so mixed in their content that it would be difficult to separate the elements of grossness that are present in them from the net income that they also contain. Thus, e.g., take the question of the services that are said to represent the costs of urban life. The urban transport system is not only used for taking the worker to his place of work and back to his residence but is also used for taking him on his other and presumably more pleasant errands, as well as providing the convenience of quick and comparatively cheap transport to the members of his family. Similarly payment for business services such as bank fees, brokerage fees, etc., by the consumer is no doubt an incident of an urban industrial civilization, but it also enables him to get services which he values and otherwise would not have obtained. In fact, it seems to me that Professor Kuznets does not do enough justice to the enormous consumer's surplus which the member of an urban and industrial civilization obtains from what Marshall calls 'his opportunities or from his conjuncture'.[2] There is no doubt that citizens of under-developed countries do not enjoy such a consumer's surplus and to that extent, therefore, their money income contains an element of over-estimation of their real income as compared to that of citizens of industrialized countries who possess this surplus. It is of course almost impossible to give statistical content to this

[1] Simon Kuznets, National Income and Industrial Structure, *Proceedings of the International Statistical Conferences*, 1947, Vol. V, p. 219.

[2] Alfred Marshall, *Principles of Economics*, 8th edition, Book III, Ch. VI, p. 125.

difference in real incomes, but that it exists cannot be denied. Even after taking this into account, however, I would incline to the view that the national incomes of highly industrialized countries contain an element of grossness in the valuation placed on certain services sectors as compared to those of under-developed countries, and to that extent tend to overstate their real national income.

But a good deal of research and special study is required before one can put forward any specific deductions that should be made on this account from the national incomes of industrialized countries in order to facilitate comparison of their real national incomes with those of under-developed countries. I feel sure that any such study, while revealing the presence of a certain measure of grossness in what Professor Kuznets calls occupational expenses of ultimate consumers, inflated costs of urban living, and intermediate products of government activities, would also reveal the presence of an element of real income in the services represented by these costs, which element would not be found in the absence of these items. I am, therefore, not prepared to agree that these elements should be totally excluded from national income estimates for both industrial and pre-ndustrial countries in order to make comparable their real national incomes. Nor can I agree to the procedure suggested by Kuznets of inflating the corresponding elements in the national incomes of pre-industrial countries to achieve a comparable level of grossness. In fact, the latter procedure would make completely unreal the national income estimates of under-developed countries, while its logical basis would be even less than that of the procedure I have already rejected, viz. that of excluding these elements from the estimates of national income of both these types of countries.

All the same, an element of grossness is there on this account in the national incomes of industrialized countries which is not equally present in those of under-developed countries, and to this extent the difference in the real national incomes of these two types of countries is less than what would normally be inferred from the difference in their national incomes. I would be inclined to state this conclusion not in terms of the under-developed countries being 'better off' than their national incomes would indicate, but in terms of the industrialized countries not being as 'well off' as their national incomes may indicate. Maybe this is a distinction without a difference, but I feel certain that there is a real distinction in terms of economic welfare, and therefore of real income, between saying that A is not as badly off as compared to B in terms of their comparative levels of real income and saying that B is not as well off as compared to A in terms of their comparative levels of real income. Behind comparative levels there do lie concealed absolute magnitudes as well, and the latter formulation would do better justice to both absolute and comparative levels than the former would. Taking the United States and India, e.g., I would prefer to say that the real national income of the United States is not as much higher than that of India as is indicated by the comparative levels of their national income. This would take due note both of the poverty of India and of the element of over-estimation of real income contained in the national income of the United States, due to the presence therein of the gross elements discussed above.

IV. INCOME LEVEL AND ECONOMIC WELFARE

We have so far considered the question of comparability of real national incomes from the point of view of the totality of the goods and services that constitute their respective money national incomes. We have inquired into the question of what goods and services are excluded from the bundles of either or both industrialized and under-developed countries, and tried to assess the effect of the same on the comparability of their real national incomes. We then inquired into the netness of some of the goods and services which, though finding inclusion in the estimates of both types of countries, seem to be more peculiarly present and in much larger measure in the estimates of national income of the industrialized countries; and tried to assess the extent to which they concealed gross elements, and the effect of the same on the use of their national income estimates for comparing levels of real national income. We shall now proceed to inquire into the relation of the contents of these national bundles to economic welfare, for after all, it is the comparative levels of economic welfare which we seek to investigate when we institute a comparison of their real national incomes. It may well be the case that goods and services included in either of the bundles may be net items and may constitute economic goods from the point of view of the individual country concerned, but may not equally indicate differences in real income when looked at from the point of view of the other country. It is, therefore, important to link up the commodity or service included in the national income of one country with the want which it seeks to satisfy and inquire whether (a) similar wants exist in the other country and (b), if they do, whether their satisfaction requires a similar quantum or quality of goods and services as in the first country. There is also the question whether the wants satisfied by what are undoubtedly economic goods and services do really promote human health and happiness in the countries concerned, and if not, whether their unequal presence in two countries whose real national incomes are being compared is not a factor indicating over-estimation or under-estimation as the case may be in their comparative levels of economic welfare.

To begin with, human wants are partly the result of geographical, climatic and other factors of the physical environment, and partly the result of history, culture, convention and other factors of the social environment. To this must be added what may be called commercially induced wants, which is a phenomenon peculiar, if not in its quality at least in its quantity, to an urban-cum-industrial civilization and therefore to the economies of industrialized countries. To complete the discussion, one must also add differences, if any, in human attitudes to the whole phenomenon of wants, a point to which Marshall draws attention in his discussion of value and utility; he says: 'In every civilized country there have been some followers of the Buddhistic doctrine that a placid serenity is the highest ideal of life; that it is the part of the wise man to root out of his nature as many wants and desires as he can; that real riches consist not in the abundance of goods but in the paucity of wants. At the other extreme are those who maintain that the growth of new wants and desires is always beneficial because it stimulates people to increased exertions. They seem to have made the mistake, as Herbert Spencer says, of supposing that life is for working, instead of working for life.'[1]

Marshall of course did not pursue the controversy, but contented himself with saying that the fullness of life lies in the development and activity of as many and as high faculties as possible. But there is a difference between activity which is

[1] Marshall, *op. cit.*, Book III, Ch. VI, p. 136.

motivated by material ends and that which finds its *raison d'être* in ends of other kinds. The attitude to what may be called material wants, including services, may differ not only between individuals in the same country, but may also constitute the subject of national differences. National attitudes, subject always to the limitation which attends its extension to any particular individual or set of individuals in the country concerned, may differ in the view they take of the desirability of wants in general and the utility of seeking to satisfy them. When this happens, there is a basic difference in the content of what is regarded as economic welfare, and it would be difficult to draw any worthwhile inferences regarding differences in real national incomes from differences in the size, variety and quality of the bundles of goods and services that constitute their national incomes.

Let us first take the wants that are linked with the physical environment. While wants in the abstract, such as the basic wants of food, clothing and shelter, are independent of differences in the physical environment, the quantum and quality of the goods and services that are needed to satisfy these wants are certainly not independent of such differences. Thus, the want for food in a cold climate requires for its satisfaction a greater measure of fats in the diet than it does in a tropical climate. It is also suggested that climatic differences necessitate larger intakes of food even in terms of absolute quantity of carbohydrates in the cold countries as compared to the warm countries. It would, therefore, be possible, given the appropriate differences in climate, for two countries to have identical levels of economic welfare in terms of their food consumption, even though the actual quantity and variety of the foods consumed in the one case may be absolutely and significantly larger than in the case of the other. The same is true of the want for clothing and shelter as well. From a comparative point of view, therefore, there seems to be an element of grossness in the goods and services which satisfy a given want in an absolute sense in one country as compared to the goods and services which satisfy the same want in another country.

The same is also true of different places in the same country if those places differ significantly from each other in their climate and other factors of physical environment. A study of workers' budgets in 34 cities in the United States made by the Department of Labour in 1948 showed that 'the principal factors in the inter-city differences are the cost of housing, which depends upon many local circumstances, and variations in fuel and clothing costs, which depend mainly on differences in climate, transportation, and taxes'.[1] The report makes special reference to clothing costs and states: 'Clothing is the major group, in addition to housing, that reflects differences in costs due to climate. Clothing costs are therefore lowest in the warmer cities and highest in the colder cities. The difference is shown between Jacksonville, where the clothing cost in June 1947 was $415 a year, and Minneapolis, where it was $477.'[2] Unfortunately, similar studies have not been carried out in intra-country differences in consumption costs which are the result of climatic and other factors of physical environment, but there can be no denying their existence. Taking the United States and India, I think that the national income of the former contains an element of over-estimation in real terms as compared to that of the latter due to this factor.

Difficulties in intra-country comparisons of real income also arise when the two countries in question have differed widely in culture, customs and convention, and the wants arising from the social environment are therefore quite different in the two countries. These differences are particularly important in the case of industrialized and under-developed countries. As Professor Morris Copeland has pointed out: 'The task of making such inter-country comparisons will be more difficult where the cultural differences are wider than they are between the United States and the United Kingdom.'[3] There is no doubt that this remark would apply with full force to any attempt at comparing the real national incomes of India and of the United States. To mention a rather gruesome illustration, a lot of wood is used in the disposal of the dead in both India and the United States, but in the former case it is used as fuel, while in the latter case it is used for making coffins; the undertakers in the United States draw a larger income than the scavengers and watchmen who work on the crematoriums in India. Similarly, there are vast differences in the style of dress including footwear and head-gear, the style of food, including the consumption of fish and

[1] Workers' Budget in the United States – City Families and Single Persons, 1946 and 1947; *Bulletin No. 927*, U.S. Department of Labor, p. 23.

[2] *Ibid.*, pp. 25–26.

[3] Morris A. Copeland, Problems of International Comparisons of Income and Wealth, *Studies in Income and Wealth*, Vol. X, *op. cit.*, p. 159.

meat, the style of religious worship, the type of household utensils used, the type of toilet articles used, and so on. Moreover, there are commodities and services classed as economic goods and entering into the national income of India or the United States as the case may be, which simply do not figure in the other country. As Mr. L. Dominguez points out in his study of the national incomes of Latin American countries, 'Many items entering the national income of the United States are not used in some South American countries. *This means that conditions are simply different, not worse.*'[1] (Italics mine.) These remarks are equally applicable to any comparison of the real national incomes of India and the United States. On the whole, I would be inclined to hold that what may broadly be called conventional wants are much more numerous and expensive in the United States than in India, and the bundles of goods and services that serve to satisfy these wants constitute a much larger percentage of the national income of United States than they do of the national income of India. It is true that this difference does reflect in part at least a difference in their real national incomes, but it is also true that a part of the difference is merely indicative of difference in conditions and does not signify differences in satisfactions or real incomes. On the whole, I would suggest that the presence of conventional wants and others arising out of the social environment lead to an overestimation of the real income of the United States as compared to that of India; and broadly speaking this would also be true of the real incomes of industrialized countries as compared to those of under-developed countries.

Then there is the question of wants that require for their satisfaction what are undoubtedly economic goods, but the satisfactions resulting from which do not add to the health or well-being of persons, but in fact actually do them damage. I do not think that such wants are peculiar to the industrialized countries or that they do not exist in the under-developed countries. For example, the narcotic *bhang* in India or the country liquor known as *toddy* are regarded as harmful and unproductive of any real addition to well-being as the liquors and spirits in the United States. But the extent to which they figure in the national income of the United States is much

[1] Loreto M. Dominguez, National Income Estimates of Latin American Countries, *Studies in Income and Wealth*, Vol. X, *op. cit.*, p. 241.

greater than is the case with India. To this extent, they involve an over-estimation of the real income of the United States; and broadly speaking, I think the same would be the case with incomes of other industrialized countries.

Finally, there is the whole question of attitude to wants and its implications for determining the relation between economic welfare and any given national bundles of commodities and services. It is said, e.g., that in countries like India most people do not believe in the philosophy that ever-increasing wants with ever-increasing bundles of goods and services to satisfy these wants contribute to ever-increasing additions to economic welfare. The people of India, we are also told, believe in limitation of wants, and associate maximum economic welfare with plain living and high thinking. Therefore, it is argued that the larger bundles of goods and services needed for satisfying a larger number of wants that constitute the national income of the United States do not indicate a proportionately larger real income as compared to that indicated by the smaller bundles of goods and services constituting India's national income that are used for satisfying a smaller number of wants. Therefore, the national income of the United States presumably contains a large measure of over-estimation of real income as compared to that of India.

I do not accept this thesis. First of all, it does not take account of the large differences in levels of productivity that are behind the larger bundles of goods and services constituting the national incomes of the United States and other industrialized countries; and levels of productivity, while not necessarily synonymous with levels of welfare, do in fact constitute one of the most significant and relevant constituents of economic welfare. Secondly, I do not believe that this so-called difference in attitudes to wants between, e.g., India and the United States really exists on the scale imagined; and, to the extent that it does, it is, largely speaking, not of a static or permanent character resulting from some deep-rooted tendencies of the Indian people but is the result of ignorance and lack of education to some extent, but much more the result of lack of opportunity. This is clear from the fact that there are people in India whose wants, as expressed either in the magnitude or in the variety of their demand for goods and services, can stand comparison with any group of people in the United States; and if the bulk of the population cannot share these wants, it is because they are poor and do not have the opportunity to do so. In fact, this absence of demand on their part is indicative of the low level of the country's real income rather than the result of the impact on economic activity of any basic national attitude in favour of plain living and the limitation of wants. I am not inclined, therefore, to make any allowance for so-called differences in national attitudes to wants in general in comparing the real national incomes of industrialized and under-developed countries. At the same time, I do think that income originating from commercial advertising does contain an element of grossness. It is, however, not possible to suggest its exclusion from the national incomes of both types of countries, as it does reflect a certain measure of addition to economic welfare in the form of final services to consumers. Under the circumstances, the only possible conclusion that can be advanced is that the larger presence of income from advertisement in the national incomes of the industrialized in contrast to those of the under-developed countries probably is a factor making for some over-estimation of the real income of the former.

To sum up, when we link up national bundles of goods and services with economic welfare, even though provision may be made for identity of treatment of each item, or for necessary adjustments in regard to the items to be excluded or included, we find that differences in national bundles do not necessarily reflect equal differences in economic welfare. In fact, we find that as between industrialized countries and under-developed countries, a part of these differences are the result just of difference in conditions, physical or social, and do not represent differences in welfare. A part of the differences is due to the larger prevalence of goods and services intended for harmful or unhealthy consumption in the industrialized countries and therefore indicate a certain measure of over-estimation in their real national incomes; and a part of the difference is due to the larger presence of income from advertisement in the industrialized countries, and as this item includes a gross element which is not deducted in computations of national incomes, it leads to a certain measure of over-estimation in the real incomes of these countries. Finally, the contention that differences in national attitudes to increasing of wants are responsible for over-estimation of real incomes in the industrialized countries is not accepted. The general conclusion arising from the discussion in this section is that the differences that exist between the real national incomes of industrialized countries and under-developed countries are somewhat less than the differences in their national bundles of goods and services represented by their national incomes. Thus, for example, the people of India are not as badly off in terms of economic welfare in comparison to the people of the United States as may be inferred by the difference in the quantum and quality of the national bundles of goods and services that constitute their respective national incomes. The caution is added that this conclusion is not equally applicable to a comparison of their levels of productivity.

V. PROBLEMS OF VALUATION

So far we have been considering the question of comparability in real terms or in terms of economic welfare of the national bundles of goods and services constituting the national incomes of industrialized and under-developed countries. We had thus assumed away the problem of comparability arising from the fact that bundles of goods and services cannot be constituted except in terms of their money value, which gives rise to the whole question of valuation that underlies the computation of national incomes. This question is important not only from the point of view of translating a given country's national income in terms of economic welfare, but also from the point of view of comparing the real national incomes of two different countries. The problem for consideration in this section is whether the methods of valuation adopted in industrialized and under-developed countries vary so much as to give rise to differences in the value of their net national products that do not correspond to what may loosely be described as their national bundles of goods and services that we have been discussing in the previous three sections. The question of the ratio of exchange which is employed to convert the money income of one country into that of the other and its relevance to the problem of comparability of real national incomes is left over to the next section.

The most important of such problems that arise under valuation of the net national product are:

(1) Imputed valuation of goods and services not entering into marketed output;

(2) Valuation of governmental services;

(3) Valuation of other services, such as professions, liberal arts, and domestic service.

There is also the somewhat different but equally important problem of regional differences in value, output and real income within one country as compared to those in another.

Let us take the question of imputation first. Imputed values usually pertain to three broad categories, viz.: (1) Home produce consumed by the farmer; (2) wages or other payments in kind, and (3) net rental of owner-occupied houses.

It is important to observe that imputed value forms an important constituent of the national income of even the industrialized countries. The following statement quoted by Dr. Margaret Reid from the Survey of Family Spending and Saving in War-Time of 1941[1] is relevant in this connection:

TABLE II

Per Person	Urban	Rural Non-farm	Rural Farm
Money income . . . . . $	792	390	281
Non-money income . . . . $	56	68	129
Percentage of non-money income to money income . . . . . %	7	17	46
Percentage of units reporting income in kind . . . . . . %	91	98	100

The value of home-produced output not entering into marketed output, including payments in kind, is calculated in both industrialized and under-developed countries, on the basis of farm prices or sale prices at centres of production. Does this lead to an under-estimation of real income? The question gets added importance because of the large place which such imputed valuation of non-marketed produce occupies in the case of the under-developed countries. From the point of view of the cultivator and the non-cultivator in India, the money value of the former's income does contain an element of under-estimation as compared to that of the latter in terms of quantities available of the produce concerned. But does it also contain an element

[1] Margaret G. Reid, Distribution of Non-money Income, *Studies in Income and Wealth*, Vol. XIII, *op. cit.*, p. 136.

of under-estimation in terms of economic welfare? I am not sure that it does. The man who purchases food grains or any other produce does pay a higher price than the farmer's sale price; but he also gets a larger measure of choice. Very often he also gets additional conveniences. In other words, he gets a larger consumer-income than the farmer gets, even though he may not be consuming a larger quantity. I think the difference in the retail price of marketed output and the farmer's sale price of non-marketed output is somewhat analogous to the difference in quality that accounts for the difference in the prices of different units of what is described as the same commodity. There is a genuine economic justification for the difference between the price at which a producer sells his output, and that at which he buys it; the latter includes a definite economic service which the former does not, and it is not correct to impute it where it does not exist. I am therefore of the opinion that the price which should be used to impute the value of non-marketed output should be that at which the producer would sell the commodity concerned and not that which is paid by other consumers who have to purchase it in the market. I think the same logic is applicable to the valuation of payments in kind, because here again the worker, who gets paid in kind, gets a smaller consumer income on account of absence of choice and other conveniences. I think therefore that the national incomes of countries which contain imputed values of non-marketed output of commodities on the basis of producer prices do not suffer from an under-estimation of real income on that account.

The net rental of owner-occupied houses is a difficult problem in valuation, especially when applied to rural houses in under-developed countries, where sale or marketing of house room is practically an exception. The rental value is therefore arrived at, in the case of India, e.g., by applying a gross yield of 6 per cent on the estimated value of rural houses and deducting therefrom the estimated annual expenditure on maintenance and repairs. In industrialized countries the methods followed are not the same; it is usual to impute net rentals of owner-occupied houses by taking the net rentals of houses which are actually rented, this being possible by the greater prevalence of a market economy in the realm of residential accommodation. What difference the choice of these different methods of valuation makes to the real income of the countries concerned is difficult to answer on an *a priori* basis. All that can be said here is that net rentals of owner-occupied houses in the national incomes of under-developed countries are on a somewhat different value basis than other items, and to that extent create difficulties in regarding their national income totals as approximations to their sum totals of economic welfare. In my opinion, this item of net rentals of owner-occupied houses in under-developed countries represents a greater difficulty in the way of comparability of their real incomes with those of industrialized countries than the factor of non-marketed output of commodities on which stress is usually laid by writers on the subject.

The valuation of governmental services presents great difficulties in drawing inferences regarding economic welfare, as governmental services usually constitute a monopoly, and there is therefore no such thing as a free market valuation of these services. This, however, is true of all countries, though difficulties in comparability arise because the rates at which these services – some of them quite identical – are valued in the different countries. Difficulties in comparability also arise because of the greater rôle of governmental services in the industrialized as contrasted with the under-developed countries. But looking at it from the point of view of each country, governmental services are valued on a similar basis, i.e. a basis of public policy and not on a market basis. This therefore presents no special difficulty, except insofar as the valuation of governmental services in some countries are on the basis of higher prices for them as compared to other sectors of the economy than in other countries. This, e.g., would be true of India as compared to the United States, and I think the same would be generally true of under-developed countries which are or have been under foreign rule in recent times.

The valuation of professional services and of domestic services do raise difficult problems because they are not subject to the same type of market economy as commodities. In many cases, the sellers of these services follow the practice of discriminating monopoly. In most cases the prices of these services reflect the general level of the national income in each country much more than commodities. These facts, however, are true of each country. Difficulties in comparison are, however, created by the different values which are put on identical services in the industrialized and under-developed countries. This question will be taken up in the next section.

As regards regional differences of the real income attributable to money values within the country itself, there is no doubt that this does create difficulties in inferring economic welfare from the money totals of such incomes. This difficulty is, however, common to both the industrialized and the under-developed countries. The usual assumption that the real income attributable to a given money income differs much more in the under-developed countries on this account is not correct in actual fact. It is true that the insufficient development of large-scale production, standardization, and transport facilities does make for significant ranges in prices in the under-developed countries; but advertisement, social standards, and differences in income levels which prevail on a much larger scale in the industrialized countries also make for significant ranges in prices within those countries, though sometimes these may be concealed behind apparent quality differences. Similarly cost differences due to climatic differences prevail as much in the under-developed as in the industrialized countries, depending upon the size of the country and its general geographical position. Under the circumstances, the fact of regional differences within the country does not appear to create a problem that is peculiar to under-developed countries in relation to industrialized countries.

To sum up, national incomes of both the industrialized and the under-developed countries include imputed values of non-marketed output, value of governmental services, and value of professions and domestic servants. In view of the fact that the valuation of these items is not strictly determined by principles of market economy, they do create difficulties of interpretation regarding their contribution to national economic welfare as compared with those of other constituents of the national product. Difficulties are also created on this account in the field of inter-country comparisons of real incomes; but there seems to be no way of making any statistical or quantitative allowance for this factor, except to mention it when it assumes significant proportions.

VI. RATES OF EXCHANGE

We have dealt in the previous section with the difficulties that arise even in the case of each individual country in treating its national income as an index of economic welfare because of the differences in methods of valuation applied to some of the constituent items. We have also seen that this gives rise to difficulties in inter-country comparisons even if the national incomes concerned were originally quoted in the same currency. In fact, however, different countries have different currencies and the money totals of their national incomes have to be converted into the currencies of the one or other as the case may be in order to institute comparisons. The legal ratio of exchange between different currencies is used for this purpose; and it is this which perhaps presents the greatest difficulty in the way of inter-country comparisons of real national incomes, especially as between industrialized and under-developed countries. The problem also prevails between the industrialized countries themselves, but it exists to an even larger extent between the industrialized and the under-developed countries. Obviously the exchange value at par, say, of the Indian rupee and the American dollar does not express in any absolute sense or in terms of economic welfare the ratio of value between the two currencies; and yet it is this par value which is used for converting the national income of the one country in terms of the currency of the other for purposes of comparison. Everyone recognizes the difficulties that this gives rise to, but so far no satisfactory attempt has been made to find an alternative ratio of exchange for use in connection with inter-country comparisons.

It is usual to think of purchasing power parity as the answer to the question of formulating a suitable ratio of exchange for equating national incomes expressed in different currencies. There are, however, several snags in this procedure.

To begin with, the commodities and services entering into the national income are not identical for different countries. This is particularly true of industrialized and under-developed countries, the items entering into the national incomes of the former being more numerous and varied than in the case of the latter. Any attempt, therefore, to use inter-spatial deflation on the basis of price-index data for broad categories of goods and services is unsatisfactory because it necessarily fails to cover important items of consumption within the categories.

Secondly, there are important quality differences between commodities and services that are apparently identical, which invalidate a straight comparison of their price ratios. This is particularly true of industrialized countries in relation to under-developed countries, difference in comparative levels of welfare often taking the form of better quality rather than greater quantity in the case of the former. This may be illustrated by comparing food consumption in these two types of countries. Taking, for example, the United States and India, it would appear in terms of calories or of proteins that the per capita consumption in the former country is no more than twice that in the latter. In actual fact, the difference is significantly larger on account of the much better quality of food consumed in the United States. This is clear from the fact that 'original calory' equivalent or the equivalent in terms of the quantity of cereals used either directly or indirectly for food consumption in the United States is more than four times that in India. Numerous other instances of quality differences can be drawn from a comparison of articles bearing identical nomenclature consumed in the two countries. This makes therefore for a further limitation on the validity of purchasing power parity as a correct ratio of exchange for inter-country comparisons of real income.

Then again, the prices of 'final' services vary greatly as between different countries, especially as between industrialized and under-developed countries. A straight price comparison becomes difficult not only because the quality of the services concerned varies so greatly but also because of the large number of services that are peculiar to each country and find no parallel in the other. Generally speaking, the purchasing power parity of the dollar in terms of the rupee would be lower than the legal ratio of exchange in the case of domestic and professional services than it would be in the case of essential goods; and the purchasers of services in India who belong to the middle and richer classes would be better off than the dollar equivalent of their incomes would indicate. On the other hand, the sellers of services in India, especially middlemen, professional people and government officials, are relatively better off by comparison with their counterparts in the United States. This constitutes yet another limitation on the formula of purchasing power parity.

There is also the significant differences that exist in the purchasing power of the domestic currency as applied to rural and urban classes or to different income groups. This creates complication in inter-country comparisons. Thus, for example, the purchasing power parity of the dollar in terms of the rupee would be different for rural classes in the two countries as compared to urban classes; it would be different for the working classes as compared to the middle and the richer classes. And finally there is the purely statistical difficulty of lack of adequate availability of data regarding prices, items and weights to be attached to each item.

All this makes difficult the adoption of purchasing power parity for making inter-country comparisons of real national income. Nevertheless, it is necessary that more research work should be undertaken in this field, and comparative data collected regarding number, quantity, and prices of articles and services consumed, and by different centres, classes and income groups in both industrialized and under-developed countries. This requires collaboration between research workers in different countries. I hope that it will be possible to have such studies undertaken through the good offices of the International Association for Research in Income and Wealth. I also hope that the Statistical Office of the United Nations Organization would turn their attention to this fruitful field of international research.

Before concluding this section, I would like to make a brief comment on the variation that exists between the par value of exchange between the currencies of industrialized and under-developed countries and their purchasing power parity ratios in whatever manner the latter is calculated. While I do not have comprehensive data to support my conclusion, I have no doubt that, even after allowing for quality differences, a substantial number of goods entering into the national incomes of under-developed countries are valued at prices which are considerably below those of corresponding goods in the industrialized countries, if translated in terms of the currencies of the latter. This is true to an even larger extent in the case of the prices of services. The conclusion follows that there is a considerable measure of under-estimation of the real incomes of under-developed countries as compared to those of industrialized countries if we use the legal ratio of exchange to reduce them into common currency units. The extent of under-estimation of real per capita incomes will, of course, be different for different centres in the two types of countries as also for different income groups.

VII. CONCLUSIONS

I shall now sum up the main points in this paper on the question of comparability of the real national incomes of industrialized and under-developed countries.

I have dealt with the national income under two heads, viz. volume and value. Taking volume first, I have discussed the question of excluded items – which goods and services are excluded from the national income computations of either or both these types of countries and how this exclusion affects comparability of real income. The vexed question of household services has been dealt with, and the conclusion arrived at that, while the nature of the services produced by the household for self-consumption is not the same in both industrialized and under-developed countries, yet in terms of volume and imputable value such services form a significant part of activity in both types of economies. I have held therefore that, contrary to the opinions usually expressed on the subject, the exclusion of domestic service and other types of household services produced for self-consumption from the national incomes of under-developed countries does not make for any under-estimation of their real national incomes as compared to that of industrialized countries.

It has been pointed out that, on the other hand, the exclusion of the imputable income attributable to durable consumption goods from the national incomes of both these types of countries *leads to an under-estimation of the real income of the industrialized countries*, as durable consumption goods occupy a much more important place in their economies. The same is also true of the exclusion of the imputable value of public buildings from the national income of these countries.

I then examined the items included in the national bundles of commodities and services of these countries, especially the service items, with a view to seeing whether they include any element of grossness. Reference has been made to services which really constitute cost items for an industrial society and I have suggested that their inclusion makes for a certain measure of over-estimation of the real income of industrialized countries.

Next these national bundles have been examined with a view to seeing how far the commodities and services included therein correspond to equivalent levels of economic welfare. This involved an examination of the nature of wants, the volume of commodities or services required to satisfy wants of a similar character in the two types of countries, the extent of a welfare diminishing element in the respective wants and the whole question of national attitudes, if any, to wants in general and their increase. Finally, I have drawn the conclusion that, on the whole, a consideration of these questions reveals the presence of an element of over-estimation of real income in the case of the industrialized countries as compared with the under-developed countries.

The question of valuation was then taken up, both from the point of view of each individual country and from that of the comparability of their real incomes. I have pointed out that the national incomes of both types of countries include imputed values of non-marketed output as well as non-imputed values of output, such as governmental services and the services of the professions and of domestic servants, which do not properly operate under a market economy. The conclusion is advanced that while these items create difficulties in the way of regarding each national income as an indicator of an absolute level of welfare, they do not, by themselves, substantially affect the comparability of their real incomes. The same is also true of the regional price and consumption-cost differences that exist in the two types of countries.

Finally, the effects of using the par value of exchange for expressing the respective national incomes in terms of a common unit on the comparability of their real incomes has been examined. The conclusion is advanced that the national incomes of industrialized countries contain an element of over-estimation in the values assigned to their output of commodities and to a larger extent in the values assigned to their output of services as compared to the under-developed countries.

The general conclusion arising from the paper is that comparisons of the money national incomes of industrialized and under-developed countries expressed in terms of the currency units of either do definitely conceal a significant element of over-estimation of real income in the case of the former as compared to the real income of the latter. This does not mean that the national incomes of the latter need to be inflated in order to make them comparable with those of the former, though it does mean that the national incomes of the former need to be deflated. In other words, the industrialized countries are not as 'well off' or as 'much better off' in comparison with the under-developed countries as may appear to be indicated by the comparative magnitudes of their national incomes. It is extremely difficult to give a statistical connotation to this over-estimation of the real incomes of the industrialized countries, though it is possible to throw more light on it by detailed studies of a type that have not yet been undertaken. At the same time, the over-estimation does exist in terms of real income. It is doubtful, therefore, if a useful purpose is served by putting forward figures of comparative national incomes, especially of the industrialized and under-developed countries as is being done in current U.N. publications. It is suggested that a more useful purpose will be served if direct comparisons of real income are attempted by comparative figures of consumption, productivity and the like instead of resorting to national income totals. Here is a fruitful source of study which may well engage the attention not only of the members of the Association but also of the National Income Unit of the United Nations Statistical Office.