



The Measurement of National Wealth: Discussion

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Discussion

Mr. Gilbert:

In the short time available, I should like to provide an introduction to Messrs. T i n b e r g e n's and D e r k s e n's paper on social accounting, and to direct a few remarks to the administrators of statistics-collecting agencies.

One might ask why we have turned to social accounting when we were getting along so nicely with the national income; why complicate life with all these elaborate tables? What meaning have they from the standpoint of economic and statistical analysis?

The first point I want to make is that social accounting was developed, not as an intellectual exercise, but through attempts by practicing economists to do their job more effectively. Let me cite my own experience, if I may. I was formerly the editor of the *Survey of Current Business*. Each January, I had to try to explain what had happened to the economy during the year just ended. I would look at the 2000-odd statistical series the magazine carried, and think hopefully, "When the national-income estimates are completed, they will provide the key to a synthesis of all these statistics—they will show the really significant developments of the years."

Then we would receive the current national-income tabulations, which at that time were limited to a breakdown by distributive shares, and they did not explain what had happened to the economy at all. In order to give an intellectually satisfying explanation, we found that we had to refer to all sorts of other data as well: data on inventories, on construction, on public fiscal policies, etc.

The reason, I think, was that the national income had been designed as a kind of yardstick for the economy, and not as a basis for analytic description of economic events. It was the possibility of broadening its scope, of building into an integrated system the national income and all these other elements needed for an analytic description, that attracted me in the National Income Division.

The development of the national income into such a system of social accounting has meant that the data now are organized in a way that suggests explanations of the economic events. And I think that this has given organic structure and more definite significance to the economic analyses which appear nowadays in the *Survey of Current Business*.

The second point I want to make is that social accounting carries a message for data-collectors, as well as for data-interpreters. I have frequently puzzled my students by asking this question: Suppose a given country has no statistics whatever; knowing the general characteristics of its economy, how would you decide what statistics should be collected to meet the needs of economic analysis?

Most assuredly no student would base his answer on the considerations which usually guide the collection of statistics in actual fact: that certain data are required for the administration of certain laws, and that some bureau chiefs are more energetic than others. Even if the question were answered on the basis of the statistics needed to provide a measure of the national income, I submit that the answer would be incomplete. But if one conceives a national statistical program in terms of providing some integrated system of social accounting, then the statistics sought will be those actually necessary and sufficient for economic analysis.

It is only by having such an all-embracing framework that one can establish any order of priority in statistical collection. Otherwise the national "program" of data-gathering tends to be like the program of a variety show; the first act is an acrobat, the second is an Irish tenor, the third is a tap dancer, and so on, with no connection between them. The parts of the program do not make up a whole drama or tell one story.

The third point I should like to emphasize about social accounting is its role in insuring statistical accuracy. As long as the statistics of employment, prices, production, etc., are kept separate from one another, no one can judge whether they are mutually consistent. When we brought our statistics together in setting up our system, we discovered some amazing things about them. As you know, the system should balance; the credits should equal the debits, but they seldom do. And you are forced, thereby, to re-examine all the component elements in order to see where the errors lie.

If I were administrator of a data-collecting program, I should require every item collected to be so defined as to fit into such a system. If an agency set out to measure the profits or wages of the economy, it would measure not the profits or wages of 227 firms, but *total* profits or wages. There is no other way of knowing whether the data collected are meaningful. I think that all our statistics on quantity, price, and value must be fitted into this system. We have relied too long on payroll figures that do not equal employment times pay rates, and on value figures that do not equal quantities times prices. What meaning have these "basic data" which cannot be reconciled with one another?

I turn to Professor Shirras' paper on national wealth for one additional comment. Without intending criticism of what is a model paper on national wealth as such, I nevertheless have the feeling that it is in a sense a prewar model. Professor Shirras, too, is interested in devising a yardstick for the national economy. My own experience with yardsticks, notably the prewar national-income estimates, suggests that these measures fall short of their full usefulness when considered as entities in themselves. If we are to engage in research on the national

wealth, I think we should try to fit it into our system of social accounting. Instead of measuring a pile of something called national wealth, we need to develop balance sheets that correspond to and are consistent with our income accounts for the various sectors of the economy. These are what are most urgently required by practicing economists, who are typically concerned, *e.g.*, with investment-savings relationships and their impact on creation of income. Such purposes cannot be served by old-style national-wealth estimates any more than by old-style national-income estimates.

Mr. Clark:

Together with Professor Kuznets and Professor Shirras, I speak as one of the representatives of free enterprise in the national-income field. While welcoming the vast amount of new information collected by governments during recent years, at the same time there is much of which I am deeply suspicious. Why do Britain and some other countries publish aggregates only, making it impossible for any outside statistician to judge either their sources or their methods? This bureaucratic suppression of criticism is followed logically by the next step—alteration or suppression of figures for political purposes—and if anyone thinks I am going too far, let him look at what has happened to cost-of-living index numbers in so many countries, including the U.S.A., where the Commerce Department has to point out (as soon as the war was over) that the Labor Department index numbers were quite incompatible with other known data of money and real values of consumption.

Professor Kuznets, in a paper of fundamental importance, has pointed out that:

(i) *Many services which we have to pay for out of our money incomes are, in a simpler society, provided domestically.* Norway and Hungary attempt to meet this problem by including in national income a valuation of unpaid as well as paid domestic work.

If, however, we refrain from expressing national income in the aggregate or per head of population, and express it always *per man-hour of work done*, we can, in effect, get round this problem.

(ii) *Certain expenses, the need for which does not arise at all in a simple community, are difficult or in some cases (as with expenses incurred by Government departments) impossible for us to avoid.*

Transport and distribution of food is the most important of these items. I value food consumption in China at American retail rather than wholesale prices and obtain a real income per head of 65 international units (approximately dollars of 1941 purchasing power), while

Professor Kuznets, by a very different method, obtains a figure of 60—but more than half of my result consists of “imputation.”

Professor Kuznets also has in mind expenses of travel to work, and much of what is included in Mr. Milton Gilbert's consumption entry for “personal business” (the work of insurance agents, trade-union organizers, lawyers, bankers, *et hoc genus omne*).

Germany and Sweden have attempted to distinguish between government departments that really add to the welfare of the community—*e.g.*, health, education, national parks—and those whose activities are a necessary cost to society without which our present social and economic life could not be carried on—*e.g.*, police, highways, and—shall we say—statistics?

Long and interesting researches lie before us in determining how many of these services really add to our welfare and how many are unavoidable costs arising out of our present structure of society.

To allow for the cost created by urban congestion, I have some data which I hope may be published shortly in which, by examining the way the populations distribute themselves through urban areas, I can express density of settlement in urban areas as a function of real income and of transport cost. This means that we can get some measure of the “disutility function” of congestion, which appears to vary with the cube root of the density. For big cities the aggregate disutility comes to a very large figure. It may be as much as 60 international units per year per head of population (total population, not working population); or a net 100 units or more if we include the cost of travel incurred in addition to the disutility of congestion. That can be put down as an unavoidable expense of urban civilization.

We can examine further the extra administrative costs of large aggregations of urban population. I refer you to L o m a x's article in the *Journal of the Royal Statistical Society*, 1943, where he finds that the additional cost of administering large cities as compared with cities under 150,000 population comes to at least 2 percent of the national income. It follows that the deconcentration of urban population may become one of the most important issues in the next few years, and the existence of the atom bomb may have the effect of hurrying us up along the road that we ought to have followed in any case. There may be some contraries; *e.g.*, for some unrecorded¹ esthetic advantages which some people at any rate achieve from living in large urban centers. But, generally speaking, the balance will be one of a large deduction.

¹ *I.e.*, which do not find expression in our present national-income measurements (cultural activities that are paid for, whether from private or from public funds, are of course already included).

But I would conclude by coming back to the fundamental issue; our research into real income is an attempt to measure our ability to satisfy our desires. That is to say, our real and justifiable desires, not the immoral or antisocial desires that all of us sometimes may entertain. Applying this principle, a first point to be made is that in measuring the enjoyment we get from something, we should not try to include in our measurement any allowance for the additional enjoyment that we may get because we know that other people lack it. In the same way, we should not make any allowance for our failure to enjoy some goods because we know that other people have more. Those are the two desires of pride and envy respectively which are of their nature irrational and insatiable, and we should ignore them for our purposes. We are trying to consider our ability to satisfy rational and justifiable desires. Is there, as some philosophers have thought, some fatal flaw in our social life that inevitably compels our desires to increase faster than any possible means of satisfying them, so that the wealthy communities end up unhappier than the poor communities? If that is true, as I fear it may be, that is not our fault as economists, insofar as it is our business to see to the supply and distribution of goods and services and not to examine the motives for which people demand them. But the economist is responsible, I think, insofar as any actions in any part of the field supervised by him are responsible for *creating* desire rather than attempting to satisfy it. We have got quite enough legitimate desires that we cannot satisfy, to make the artificial creation of desire by means of advertising and salesmanship a false and dangerous proceeding. In measuring economic welfare (though I know that I am speaking terrible heresy in the United States), I must venture to discount, or even to deny altogether, the supposed satisfaction obtained from gratifying desires which do not exist naturally, and have been artificially created for the purpose of making a profit out of supplying them.

Mr. J. R. N. Stone:

I think it will be useful to draw a distinction between two quite separate purposes for which national-income investigations can be used. I shan't attempt any very exact definitions; but it is clear that the sort of purpose that Professor T i n b e r g e n described is different from that of Professor K u z n e t s. Perhaps I may say that Professor Tinbergen was putting himself in the position of a government adviser who has to provide facts about the working of the economic system; whereas I think it is true to say that Professor Kuznets is more interested in getting down to the fundamental problems of the comparison of welfare.

Now I think these two purposes are quite different, and that one is asking a different set of questions in either case. I don't think there

is any doubt that in dealing with the first set of questions we can get along from the practical point of view by adopting a number of conventions in much the same way that business accountants do in keeping the records of individual firms. They may not be the same, but in using them we shall always be guided by the same fundamental idea that we have got to collect figures and therefore to adopt methods such that those figures are, or at least could be, provided in our economy. If we develop definitions and concepts that are non-operational in this sense, then as government statisticians we shall certainly fail. I think it is important to grasp this point, because there are a lot of problems that can be answered satisfactorily with the use of conventional definitions.

Following along this line of thought, we try, in portraying the structure of the economic system, to build up a set of social accounts in such a way that they reflect the different sorts of transactions between different parts of the system. We thus link up with Professor Tinbergen's idea that a statement of these transactions in a single period of time is not sufficient. In order to link different time periods together we need to know something about the way in which our society behaves, either as consumers and producers, or from the standpoint of the influence of the legal system or the state of technology. And so we develop a system of relationships that will connect up the transactions in our accounts and the other economic, legal, and technological variables that enter into the world that we are trying to explain.

Now for a few remarks about the other main use of national income studies. One of the problems in any work is to find out not only what questions we think we would like to have answers to, but also what questions we have any hope of answering. When I think of this whole question of an attempt to measure welfare, whether over time or between countries, I ask myself whether it is possible to give any concrete meaning to this term, which we can put down in statistical terms, other than the kind of meaning that we are driven to in developing the conventional accounting systems that I have spoken of. Just because we put our information in the form of an accounting system, of course it says nothing whatever about how that accounting system is constructed except that it would have certain formal properties of a very simple kind. But is it really possible to develop accounting systems that do not rely largely on ordinarily accepted conventions but seek to go behind these to something more fundamental? I don't know the answer to this question but I hope that Professor Kuznets in considering these problems himself will not reject the accounting approach because he doesn't like the conventional basis of existing accounting studies. The point is that an accounting approach will help, even when we are trying to measure

welfare, because it will enable us to see inconsistencies and the implications of what we are doing. I feel sure that an attempt to introduce, say, the family household as a sector in an economy would form an illuminating study.

But there is another aspect to this whole matter. Why do we want to compare the United States with, say, China or India? What possible interest is there in it? Everybody knows that one country is, in economic terms, very rich and another country very poor; does it matter whether the factor is thirty or fifty or what? I suggest that in default of having solved the intellectual problems, we should content ourselves with comparisons of a rather simple kind; and furthermore that we should not always expect to be able to sum up the relative position in a single figure. For I do not think that when we have made these comparisons we have really done a great deal. The figures in themselves may be useful; what I am drawing attention to is the question of comparing them and of making use of the comparisons. I feel that from the scientific point of view we should concentrate our energies on the attempt to solve the intellectual problems and in the meantime leave those in charge of affairs with no illusions about the exactness of the comparisons which can at present be made. In order to act, we don't need to know whether one country is just so much better off than another; rather we need to know a great deal about the situation of the two countries in its various aspects. The problem then is to make up our minds in terms of values, which are not matters that can be reduced to statistical facts, just what we would like and what we feel it is possible to do about the situation. Thus while I do not expect a very rapid resolution of the intellectual problems of making welfare comparisons between widely different communities, I do not think that as statesmen or as civil servants we need be unduly depressed on this score.

M. Perroux:

I. Le très intéressant exposé de Professeur J. Tinbergen et de M. Derksen est une contribution à la théorie appliquée du *Budget national*. Celui-ci à mon sens doit être considéré centralement comme une *comptabilité de gestion* à l'échelle de la nation. La comptabilité de gestion (par opposition à la comptabilité de caisse ou à la comptabilité financière) se définit: le relevé détaillé et convenablement groupé de tous les éléments propres à fonder les décisions d'une politique économique poursuivie par une unité quelconque, qui se propose de porter au maximum un résultat jugé avantageux. Une simple firme envisage, même lorsqu'elle ne les matérialise pas en plans *divers* systèmes de décisions, correspondant à des *hypothèses* diverses (chiffrées si possible).

La même méthode peut être employée à l'échelle de la nation; elle tend à assurer la *cohérence* des décisions et à réduire les divergences entre plans de l'Etat et plans des particuliers dans un monde dynamique. Cette méthode n'a pas été étrangère aux préoccupations des auteurs du Plan Monnet (cf. le *premier* rapport officiel sur le Plan).

Elle n'apparaît utilisable que si l'économie n'enregistre pas de trop sensibles variations du niveau général des prix, et des niveaux des groupes de prix relatifs. La possibilité même de dresser des tableaux alternatifs est liée à cette condition. Les quantités globales inscrites dans un budget national *ex ante* expriment l'adaptation présumée d'offres globales et de demandes globales pour un certain niveau des prix. En France, l'état actuel de nos statistiques sur le revenu ou produit global rend très problématique l'application détaillée des budgets flexibles. La stabilisation des salaires et des prix et la compression des coûts sont des tâches incomparablement plus importantes que l'alignement de quantités globales jugées souhaitables. La reprise de l'investissement *privé* serait plus décisive que les indications sur l'investissement global *en l'absence* d'une politique *cohérente* de contrôle de l'économie et de *financement*. L'utilisation pratique et fructueuse des budgets flexibles dépend présentement de circonstances dont la conjonction est rare: une excellente comptabilité sociale, un *planning* cohérent, un contrôle efficace de l'économie, une *articulation correcte* des organismes techniques qui proposent les systèmes de solutions et des organes politiques qui poursuivent la réalisation d'un de ces systèmes.

II. J'ai examiné avec intérêt et profit la communication de S. Kuznets et suis heureux de lui dire publiquement l'admiration que les spécialistes français vouent à ses travaux.

J'avouerai n'être pas tout à fait convaincu par les conclusions de sa présente étude.

a) Je marquerai d'abord qu'une extension de la comptabilité nationale dans les pays préindustriels (suivant sa définition) présente les plus grands avantages, *quand bien même* elle ne permettrait *aucune comparaison*. Fût-elle incomplète et rudimentaire, elle permet une mise en place et une mise en oeuvre de la politique économique. Elle doit donc, en tous cas, être intensifiée et étendue.

b) Pour le surplus les *comparaisons* entre le revenu national des moins évolués des pays préindustriels et le revenu national des pays industriels, me paraissent *sans résultats utilisables*. Il n'en est pas ainsi seulement pour des raisons opérationnelles (manque de statistiques) mais pour une raison théorique et fondamentale: les comparaisons n'ont de sens qu'entre populations et économies de structures au moins grossièrement comparables. Bien entendu, l'ingéniosité statistique peut toujours produire des chiffres et la méthode préconisée par S. Kuznets est la

plus ingénieuse que je connaisse. Elle consiste à ajouter le produit hors marché au revenu des pays préindustriels, à retrancher du revenu des pays industriels divers coûts imposés par la structure économique et sociale, à évaluer les quantités ainsi obtenues en termes de prix des pays industriels et de prix des pays préindustriels: l'évaluation en prix, —la seule dont nous disposions—, ouvre des difficultés classiques (non homogénéité des prix et des régimes de prix), même quand il s'agit d'un même pays industriel ou de la comparaison entre deux pays industriels de structures très analogues. Mais que signifie, économiquement, l'appréciation que les habitants de l'Afrique Equatoriale Française, par exemple "*feraient*" de tous les biens et services nets obtenus pendant une période "*Si*" ces biens et services "*venaient sur un marché*" ? Que signifie l'appréciation que les citoyens des Etats-Unis "*feraient*" des biens et services consommés ou investis, pendant une période, par les noirs de l'Afrique Equatoriale Française, si ces citoyens américains avaient à apprécier ces biens ? Ce sont des extrapolations de cette envergnure qui sont implicites dans la méthode préconisée.

On est sur d'avance, en l'employant, d'arriver à *réduire* l'in vraisemblance constatée au début de la communication (§4). On est moins sûr, me semble-t-il, d'atteindre à des résultats *économiquement significatifs*. Entre l'*abstraction statistique* et la traduction de la *réalité par la statistique*, la différence est le plus souvent difficile à repérer. Il y a lieu de craindre, dans notre cas, que nous donnions de bons exemples de la première. Pour apprécier le bien être d'un pays préindustriel peu développé, pour le comparer à celui d'un pays industriel, pour apprécier les potentiels de production ou d'effort collectif, dans les deux cas, la comptabilité nationale, même perfectionnée paraît encore d'un bien faible secours.

c) Elle a, je le répète, un immense intérêt, *indépendamment* des comparaisons et c'est pourquoi à l'Institut de Science Economique Appliquée à Paris, nous nous efforçons d'attirer l'attention des pouvoirs publics sur l'opportunité d'améliorer (ou de créer) la comptabilité nationale de la France d'Outre-Mer.

III. Je regrette de ne pouvoir analyser de façon détaillée l'intéressante communication de notre collègue et ami, G. F i n d l a y S h i r r a s. Je voudrais seulement mentionner un point. La distinction de la *richesse nationale* et du *capital national* (capital de production à l'échelle de la nation), bien qu'elle soulève des difficultés statistiques et théoriques très connues, est fondamentale. En France (et dans plusieurs autres nations du monde) elle *n'a pas* fait l'objet d'une discussion théorique *modernisée* et approfondie et *n'a pas suscité de regroupements statistiques souhaitables*.

IV. Quant à la comparaison de la contribution des gouvernements au revenu national, que soulève M. S m i t h i e s, je me limiterai à deux

remarques: 1) Contrairement à une pratique fréquente une distinction même sommaire de la participation de l'Etat d'une part au produit final, d'autre part, aux produits intermédiaires me paraît indispensable; même quand elle n'est pas adoptée à titre principal, elle devrait être présentée sous forme d'alternative account. 2) Une théorie de l'Etat comme monopoleur de la *contrainte publique organisée* (cette dernière étant analysée comme un *bien économique*, substituable et complémentaire par rapport à d'autres biens) semble capable de rajeunir la discussion sur le produit net de l'Etat. Je me réserve, en cette matière, de développer ailleurs, sous forme d'article, le contenu de cette suggestion.

Mr. Lieu:

I do not pretend to be an expert on the measurement of national income. What I want to say concerns China's national-income statistics, which question has been raised by more than one speaker today. There are altogether twelve estimates of China's national income, most of which are perhaps not available to foreign readers, because they are written in the Chinese language. The range of these estimates is between 12 billion Chinese dollars and 68 billion. That is a very large difference which cannot be accounted for by price variations, because the estimates refer to periods during which price variations were not so great. Of these twelve estimates, four give detailed figures. Dr T. C. Liu has one on national income, and another one on gross national product; both of which are published in English in this country. Mr. P. S. Ou has an estimate of national income in Chinese, but I understand an extract of it has been published in English. The last of the four is made by myself. The range between these four detailed estimates is from 18 billion to 35 billion. That shows that when details are given, the differences become smaller. However, even then, there is some possibility of underestimating.

The largest portion of China's national income consists of income of the agricultural sector. For that sector, all three of us utilized the sample studies of Dr. J. L. Buck; and Dr. Buck's sample studies were made in parts of China where his university, the University of Nanking, had better contacts, and where they could get more details. There might be some bias due to the choice of regions. For instance, I made a statistical study of the agricultural economy in the county of Wuhsin in Chekiang, which is not in the regions covered by Dr. Buck, and income of the farmers there is much higher. There are also other sample studies of this nature that show different results.

A second difficulty is this: For the manufacturing industries Mr. Ou and I both used my 1933 census of manufactures, because that census

was comparatively complete. Even so, that census did not cover Manchuria, which had already been occupied by Japan. There were also no statistics of foreign factories, because they refused to supply figures. We tried to make up for this incompleteness by estimates, which might be considerably below the actual figures. The incomes of handicraft and other workers can only be guessed at.

Another important item for which we cannot get good data in China is the income of wholesale and retail trade. I believe that it produces a fair proportion of China's national income, because there are wide margins between the prices of goods received by the producers and those paid by the consumers. Of course, a part of such differences represents transportation costs. We do not have adequate data to estimate these two kinds of figures.

Mr. Evelpides:

Gentlemen, we frequently have a tendency to measure social welfare on the basis of the degree of national income, due account being taken, naturally, of the distribution of national income. But national income may be noticeably increased following certain factors such as inflation, increase in taxes, and customs duties. These factors lead to an increase in the cost of living and lead consequently to social misery. The method of dividing the net income by the index of the cost of living very often increases this basic error. It seems to me we can have a much better idea of the increase—or the lack, of increase—of social welfare if we compare national income not with indices, but either with the relative increase or decrease of such indices or with their trend. If national income increases more rapidly than index numbers, then social welfare increases, provided the distribution of national income, naturally, remains constant. But if index numbers of the cost of living increase more rapidly than national income, then there is a decrease in the social welfare prevalent in that country. The comparison must be made from year to year, and we must take into consideration the increase or decrease of all these factors, always calculated on the basis of 100. A double curve of increase of national income and of the index of cost of living may facilitate an easy understanding of the expounded method of the measurement of social welfare. We have applied this method over a period of years, roughly twenty years, in Greece, where fluctuations of the national income as well as of the index number of the cost of living were extremely pronounced; and we reached very satisfying practical results. I must say that an eminent economist arrived in Greece, studied the question of national income there, saw that there was an increase in the cost of living but a decrease

of production, and he concluded that everything was fine since the national income remained constant, or was even slightly increased; whereas, in fact, in the situation there was a decrease in the social welfare of the community. We must, therefore, be extremely cautious in this type of calculation and measurement; and that is why I gave you this example.

M. Divisia:

Je veux apporter mon accord d'ensemble, et mes compliments, aux très remarquables exposés que nous venons d'entendre, auxquels j'associe celui de M. D e r k s e n. J'y ajouterai quelques observations générales.

J'ai été frappé par la grande importance de cette notion de revenu flexible, que M. T i n b e r g e n a conçue dans des circonstances particulières, mais qui a une portée universelle. Je crois, moi aussi, qu'il n'y a pas une notion unique de revenu national: tout calcul de revenu national n'est qu'un moyen, et doit donc être pensé en fonction du but poursuivi; or les buts peuvent être divers. J'en dirai autant de la notion de richesse nationale, rejoignant ici M. S h i r r a s, et, au surplus, estimant qu'on ne doit pas séparer les notions de revenu national et de richesse nationale, pour cette raison que, dans un ensemble renouvelé, on ne doit jamais séparer le flux du stock.

La méthode des revenus flexibles me paraît essentielle, aussi, en raison de son caractère inductif. Et je voudrais, en passant, appeler votre attention sur la portée très générale de cet aspect, qui vise les diverses estimations d'une donnée statistique quelconque: Toute évaluation statistique est toujours le résultat d'une inférence, laquelle, à mon avis, ne peut jamais découler uniquement et objectivement d'aucune méthode purement logique; elle implique donc toujours une responsabilité d'homme d'action, qui oblige à se rendre compte de la gravité des conclusions qui sortiront des calculs. Ainsi, j'estime essentiel de connecter toujours les évaluations statistiques avec les problèmes qu'elles aideront à résoudre.

Notamment, M. Derksen nous a parlé de la comparaison et de l'unification des méthodes sur le plan international. Un des intérêts de cette très importante question me paraît être de nous pousser à considérer les problèmes pratiques en jeu, et à préciser leurs buts, et même les buts de ces buts: Pourquoi unifier les méthodes? Apparemment, pour pouvoir comparer les résultats des divers pays. Mais pour quels problèmes précis veut-on faire cette comparaison? Les évaluations à faire sont-elles bien les mêmes pour chaque problème, et aussi, le degré d'exactitude requis?

La structure des calculs de revenu national, ou de richesse nationale, a donné lieu à des discussions interminables, que je crois sans issue sur

un plan purement conceptuel; au contraire, je pense qu'il doit être facile de s'accorder sur le caractère adéquat de telle structure pour tel problème posé.

Dès lors, je suggérerais volontiers, comme méthode de travail, de dresser une liste aussi complète que possible des problèmes pratiques impliquant le calcul du revenu national ou de la richesse nationale, et je pense qu'il pourrait y avoir là l'objet d'une action internationale particulièrement intéressante.

J'aimerais voir dresser aussi une liste des problèmes théoriques conçue dans le même esprit, car, tout en écoutant les exposés de ce matin, j'ai senti une fois de plus, combien ces questions mettent en jeu des conceptions théorique qui ont besoin d'être encore approfondies, touchant notamment à la mesure de l'utilité et au revenu psychique introduit dans la science par Irving F i s h e r. Et, puisque je suis amené à prononcer le nom de ce grand Maître, qu'il me soit permis, en terminant, amené à d'adresser un hommage à sa mémoire.

Mr. Tinbergen:

In view of the short time available, I think that I will only try to answer a few of the most important remarks that have been made.

I have been asked by Professor S h i r a s how the figures on savings in the national account have been found.

Savings are composed chiefly, at least in my country, of three items, namely:

- (i) business savings which we are able to estimate more or less satisfactorily,
- (ii) savings by social security agencies and similar institutions which we know accurately, and
- (iii) savings by families, particularly in the higher income brackets. These are very difficult to estimate, but for the moment they are almost zero. We are planning to organize some extensive sort of budget statistics for those income brackets, indicating only consumption as a whole, taxes as a whole, and savings in a few components.

I am in full sympathy with Professor D i v i s i a, if he asks for the aims with which all these statistics and systems are being made; and in full agreement that we need a list of the problems and a list of the theoretical questions.

I do think that some contributions have already been made this morning to such a list of questions; particularly Mr. S t o n e, I think, has very clearly and frankly described, at least for my own work, what the purposes are. I need not go into that matter therefore now. Indeed, it is quite true that much could be done still to clarify it.

I may add one more remark, perhaps, as to the usefulness of national-wealth statistics. I think we have to attempt to establish production functions, and there are some of the components in the estimate, namely the active capital components, that are of importance to that type of work. We discussed that the other day after Mr. Clark's contribution.

Mr. Stone as well as Mr. Perroux asked some questions about the flexible budget.

Mr. Stone was quite right in suggesting that they are something halfway between common-sense guesses and a treatment with the help of complete models. Indeed I think the use of flexible budgets is some sort of a safeguard against introducing contradictory figures. We are at least prevented from sinning against the balance equation, although we have no guarantee that we are not sinning against the other relations of a complete model. Sometimes we do not know these other relations very exactly; and until we know, we have to proceed in this more practical way.

I may add one example of the use we made of flexible budgets; they were useful, in my country, to the discussions on the measures to be taken in view of the dollar scarcity.

Mr. Kuznets:

This reply deals, necessarily briefly, with only some of the points raised by Messrs. Stone, Rao, and Clark.

1) I have no quarrel with the social-accounting approach as an instructive description of the working of selected economic institutions. I do have a quarrel with the approach if: (a) its conventions, borrowed from business accounting, become criteria governing evaluation of national income or national product (I use the terms as synonyms) as approximations to real flows; (b) practices of social accounting, as they have been followed, are not recognized for what they are—compromises geared to the analysis of short-term economic problems in Western countries; (c) followers of social accounting don't recognize that the selection of accounts often reflects an unconscious mixture of welfare with institutional considerations. Thus, illegal activities are not included, presumably because they do not satisfy any recognized ultimate wants; but other activities, of problematical relevance to such ultimate wants (*e.g.*, war expenditures) are fully included.

2) The paper has been criticized as pursuing the mirage of fundamental content, and as thus departing from canons ordinarily followed in empirical science. To my mind, it is just this pursuit of fundamental content that is the driving force in all scientific investigation, and empirical science has rarely progressed by keeping to the observable surface

of phenomena and forbearing from inquiries that lead to more searching analysis.

3) Questions of the type raised in the paper are of use beyond help in sharpening the tools of statistical analysis; directly or indirectly they can be of use also in problems of public policy. For example, in considering policies relating to industrialization, it is never safe to lose sight of the contributions made by the nonmarket elements in pre-industrial economy, an oversight altogether too likely with the conventional methods of measuring national income. The consequence may easily be policies involving needless and premature destruction of the domestic economy, the latter viewed as a producing institution—before the benefits of the “industrial” sectors that are being nurtured become available.

4) I fully agree with the suggestions of Dr. Rao and Dr. Clark of the need of further exploration in this field and that care must be exercised in classifying various economic activities viewed as contributions to some end-purposes. The aim of the paper was to raise questions that might stimulate such further exploration, rather than provide definitive answers. It is important to press such questions upon the attention of students in the field, even if no fully defensible answers are available. The overemphasis, if it be such, is distinctly preferable to underemphasis, since, with the latter, these questions are answered implicitly rather than explicitly—and not necessarily more satisfactorily because implicitly. The paper suggests a few modifications of the customary approach which are feasible with already available data and which should permit more significant comparisons between pre-industrial and industrial countries. What is even more important, they open avenues of further work that may yield results contributory to analysis and policy consideration of long-term, as distinct from short-term, economic problems.

Mr. Smithies:

I would just like to make one comment on the question of a single figure. It seems to me that at this stage of the proceedings to say that you should not have a single figure is very definitely locking the stable door after the horse has got out. It seems to me that one of the major problems of the present time is to steer the horse in the right direction. These figures have been produced and people use them. They will continue to be produced, and people will continue to use them. If we were starting afresh, I would have a great deal of sympathy with what has been said about not using a single figure, and not even producing one. But the way the thing stands now is that

in every governmental problem where a multiplicity of regions or countries is involved, national-income figures are used. Anyone who has had anything to do with the Federal system of government will know that real national-income figures enter into a multitude of discussions. And every international organization that has been formed has used national-income statistics in one way or another. Therefore, I think the statistician cannot bury his head in the sand in this matter. He should know the practical politicians will use his results and probably will misuse them. And therefore I do believe that it is imperative to make the best single figure that is possible and to use a few very simple rules for its application. I have no optimism that it will not be misused, but I think the statisticians still have a responsibility to assist in this rather important aspect of international negotiation.

Mr. Shirras:

I should like to say in the first place how grateful I am that the paper was received without too many comments on definitions, which rather pleased me. I am at one with everything said by Mr. Milton Gilbert, of whom I am very envious with his huge staff that gets out all sorts of detailed figures, and Professor Divisia and Mr. Colin Clark and others. What I assume now is that we should get down to a common definition of both national income and national wealth. Each country should collect data for each of the components of this definition so that whether any particular country accepts the definition or not it will always be possible to make comparisons between countries by using the same components. That in my view would be a great advance. The measurement of national wealth has again come into fashion and I am anxious that countries should undertake this measurement with the least possible delay. It would be exceedingly useful if all four methods were used for comparative purposes. Moreover, I agree with Mr. Milton Gilbert and I should like to see in national-wealth measurements careful estimates of gross and net capital formation. One of the most urgent matters for the International Association for Research in Income and Wealth is, in my view, the laying down of principles of measurement of national wealth for the guidance of countries. Some countries use the income method, others the estate-duty method, and others the inventory method. No attempt has yet been made to evaluate these methods and to set out the connecting principles. Mr. Smithies is perhaps rather optimistic when he says he is a great believer in army clothing because it fits everybody but nobody in particular. But especially in the field in which I have been most concerned, on the measurement of the burden of taxation, I think we ought to be

very careful when we use such terms as "national income" and "national wealth" to state exactly what we mean.

Mr. MacGregor (sent in after the meeting):

From the days of Sir William Petty estimates of national wealth have been complementary to those of national income, but scholars have emphasized now one and now the other. Since the end of the nineteenth century the emphasis has been swinging from wealth to income, probably because valuations of wealth made at rather long intervals become less representative of physical volume in a period of widely fluctuating prices and interest rates. Meanwhile the sources of information relating to income have been improving steadily. In common with many others I have favoured this change of emphasis and in a review written some years ago I criticized the Dominion Bureau of Statistics for continuing to publish estimates of the wealth of Canada. Since that time I have altered my opinion in some respects, and the purpose of these remarks is to support but at the same time to modify Professor Shirras' argument by stressing the usefulness of special-purpose estimates of certain branches of wealth.

It now seems clear that the valuation of wealth deserves careful attention for at least three reasons in addition to the study of production functions already mentioned by Professor Tinbergen. These are for: (i) estimates of capital formation, capital values being necessary for estimates of depreciation, maintenance, and repair, and for estimating changes in investment in circulating capital; (ii) independent estimates of capital formation by the inventory method where that is appropriate; and (iii) studies of depletion of natural resources.

The difficulty of securing meaningful valuations, which is the perennial objection to estimates of capital value, is not as serious for the first two of these as for other branches of national wealth. Thus, in the case of depreciation in manufacturing, accountants' estimates are available and may be used at least as a starting point despite the presence of bias. In the case of dwellings and farms, however, the statistician will probably have to depend on less technical estimates of capital values and apply his own rates of depreciation.

As to measuring capital formation by comparing inventories of capital values, this method must still be used where production figures are inadequate. It may be added that gaps or weak spots in statistics will doubtless remain as long as the interests of men prevail over the interests of book-keeping and tax-gathering, and it may always be necessary to have recourse to simpler and perhaps less accurate methods for some sectors of an economy, or for some countries.

The point which I want to emphasize is that the uses of capital values mentioned above do not call for a complete enumeration of national wealth nor do they involve trouble with the difficult borderline cases of immaterial capital and the "heritage of improvement" described by Edwin Cannan, or those encountered in British controversies over the capital levy twenty-five years ago.

Now as to depletion. It is almost always neglected. Indeed, I do not know of any country where it is treated seriously in social accounts, though Bowley, Pigou, and Lindahl show an interest in it, and Stanley Jevons and Sir Leo Chiozza Money stressed it in Britain many years ago. Since that time depletion has become more evident in areas where extractive industries are carried on, and is probably the largest factor in depressing certain incomes over the long term as many parts of North America have learned to their cost.

As to estimates of depletion, they lie in the fields where forestry, geology, and agronomy overlap economics. Many studies have been attempted and the first task of the economist-statistician is to appraise from his own standpoint the methods employed and indicate how they can be improved. I do not believe that it will ever be wise to offer full and detailed estimates, the pitfalls are so many that such a thing would be wholly meretricious unless as a stage in "estimating by parts." What I envisage is rather the gathering of information in terms of units for a few industries where exhaustion of resources is most serious. Valuations could then be applied from time to time if advisable.

Accretion must also be recognized, as in the case of growing forests or resources rendered economical by changes in prices or techniques or transport facilities. From an historical standpoint accretion may be important enough to warrant neglect of depletion in some cases, but not in all.

For these reasons I feel that Professor Shirras' argument would have been more convincing if he had stressed the importance of partial estimates of wealth for particular purposes.