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**HICKS'S VALUATION OF SOCIAL INCOME: AN APPRAISAL**

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# HICKS'S VALUATION OF SOCIAL INCOME: AN APPRAISAL <sup>†</sup>

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## Abstract

The purpose of the paper is an attempt at reconstructing and assessing the intellectual itinerary of Hicks on the Valuation of Social Income. Already in his *Value and Capital* (1939), Hicks explicitly dismissed any concept of Income. But he published, in 1958 and 1981, two papers on that topic which have been absolutely ignored by the economic literature. In both of them a making-up of *different* measures of Real Income is provided, which show to *what extent* each one of those measures can be relied upon. Our assessment points out that it is impossible to have a definite measure of the Social Income *independently* of the reasons for which that very measure is required and that any valuation cannot *ultimately* be made independently from considering society as a whole with all its political and ethical implications.

1 To the Valuation of Social Income Hicks devoted several papers published over a fairly long period of time: the first one appearing in 1940 and the last one in 1981.<sup>1</sup>

Recently, some authors<sup>2</sup> had recourse to Hicks's concepts of 'Income' as elaborated in *Value and Capital* (1939). In this work, however, the concept taken into account is the *Individual* 'Income' and all the definitions put forward are highly criticized by Hicks himself. He convincingly shows - as will be made clear in §§ 5-6 below - the impossibility of having a clear-cut definition of 'income' at individual level as well as the impossibility of aggregating individual incomes. (Hicks (1939), pp. 172-81.) From a different point of view, it can be said that any 'income' concept of

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<sup>1</sup> As essay 11 'Valuation of the Social Income III - the Cost Approach' in vol. I of his *Collected Essays on Economic Theory (CEET I)*.

<sup>2</sup> For instance, El Serafy (1989), Daly & Cobb (1989), Nordhaus (1992), Common & Perrings (1992).

*Value and Capital* fits quite improperly within the general-equilibrium framework that Hicks is considering in his 1939 book. The relevant literature has however taken the 1939 Hicksian 'income' concepts as the standard reference on the subject<sup>3</sup>, completely ignoring the several explicit 'caveats' of Hicks himself and especially his two 1958 and 1981 works on Social Income. Indeed, from the 1940 paper onwards the concept of *Social Income* is considered.

The purpose of the present paper is an attempt at reconstructing and assessing the intellectual itinerary of Hicks on the Valuation of Social Income. In particular, an attempt will be made to explain (i) the reasons why the general attitude of the economic literature towards the Hicksian works of 1958 and 1981 has been decidedly of absolute indifference, (ii) Hicks's long lasted tenacity in working on that topic. It will be shown that, apart from some analytical problems of definition and measurement, there are also far more delicate problems of methodology, centred on whether or not the notion of Social Income - as represented by an index-number of the  $\sum pq$ -type - can still be meaningful as an index of *general welfare*.

2 As a preliminary, we can conveniently divide the whole period 1939-1981 into two basic sub-periods whose dividing line is sharply marked by Samuelson's work (1950).

The first sub-period seems to be quite intriguing. On the one hand, Hicks writes, in 1939, chapter XIV for his *Value and Capital*, in which a very convincing critique is put forward against the concept of 'Income'; on the other, he publishes in the year immediately after (1940) his highly controversial work on the Valuation of Social Income, in which he tries instead to give some positive foundations.

The 1940 paper was the starting point of a huge and long controversy which arose mainly through the contributions of Kuznets (1948a), (1948b), Little (1949), Hicks himself (1948) and 'ended' with the above quoted work of Samuelson (1950).

The second sub-period, which conventionally can be seen as starting in the late '50, is characterized by two companion Hicksian papers, which, although published in two distinct years so far apart, (1958) and (1981), seem instead as two strictly connected parts of the same piece of

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<sup>3</sup> Cf. Hicks (1979), p. 189, *CEET III* and Scott (1984), p. 61.

work. These two very important papers have been passed absolutely unnoticed in the literature, as far as their constructive parts are concerned.<sup>4</sup>

If we look at these two sub-periods of time, the apparent 'schizophrenia' of Hicks between 1939 and 1940 should be explained as well as the very existence of the second sub-period. In fact, if Samuelson (1950) 'ended' the controversy referred to above, why Hicks came over again on the same subject after a so prolonged lapse of time with such a compelling attention? One possible answer could be that Samuelson did write the last word on *that* controversy but *not* on the issue in itself. In fact, the Hicksian papers of 1958 and 1981 show that there was much more to be said on the Valuation of Social Income.

3 It might be useful to emphasize the most relevant features of the *general context* within which the problem of the Valuation of Social Income is tackled by Hicks.

Although *Value and Capital* contains an entire chapter on 'Income', nevertheless the concept there developed appears completely deprived of any useful application, for his 1939 work is based on the 'catallactics' whose basic reference is the set of exchanges taking place in the economy.

The 1940 paper marks a far more change of perspective with respect to the previous 1939 work. In the former, in fact, Hicks takes up Pigou's 1932 book on welfare which is based on the 'plutology'-approach characterized by having production and distribution of the whole economy as the privileged object of its enquiry. Although Hicks explicitly rejects the Benthamite roots of Pigou in favour of the more 'neutral' Pareto-approach (one of the features of the transition from the 'Old' to the 'New' Welfare Economics taking place in the 40s), he positively emphasizes the other side of Pigou, namely his direct link with the Classical Economists. This link does have as the most evident aspect precisely the study of the Social Product.

In 1940 Hicks still belongs to that group of Economists who were actively working in favour of the transition referred to above. In that context, the 1940 paper strongly reflects the

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<sup>4</sup> In a book edited by Parker and Harcourt (1969) and entitled *Readings in the Concept and Measurement of Income*, chapter XIV of *Value and Capital* ('Income') finds a place - not so the 1958 Hicksian paper. For an accidental reference to the 1981 Hicksian paper see Chipman (1994).

'new welfarism' of that time - as, for example, the controversial definition of 'increase in real social income'.

With the appearance of Samuelson's 1950 paper the idea of having a clear-cut definition of a 'change' in Social Income was bound to be definitely abandoned. However, Samuelson had only a 'negative' explanation to offer *and*, in the spirit of the 'New' Welfare Economics, he was rigorously firm in maintaining the (Paretian) separation between 'economic' and 'ethical' judgement.

4 Later on (in the late '50s), Hicks matured a deep revision of his own attitude towards the economics of welfare, in general, and the problem of the Valuation of Social Income, in particular. The 1959 paper 'A Manifesto' can be considered a very breakthrough-paper in that direction. In it, he explicitly repudiated the artificial separation between 'economics' on the one hand, and 'non-economics' on the other. As a consequence, though in another context, *any* notion of 'economic' welfare was seen as absolutely misleading, if not altogether wrong. As he explicitly states:

"It is impossible to make 'economic' proposals that do not have 'non-economic aspects', as the Welfarist would call them; when the economist makes a recommendation, he is responsible for it in the round; all aspects of that recommendation, whether he chooses to label them economic or not, are of his concern." (Hicks (1959), p. 137.)<sup>5</sup>

After Samuelson's 1950 destructive and pessimistic paper Hicks endeavours to give a *positive* explanation of the reasons why no coherent measures of 'changes' in Social Income can *generally* be found. In so doing, Hicks *never* tried to seek refuge in a 'one-good model'.<sup>6</sup>

<sup>5</sup> In the same vein it must be considered the 1975 paper *The Scope and Status of Welfare Economics*. Hicks considered this paper "the centrepiece" (Hicks (1981), p. xviii) of Part III of his volume of collected essays entitled *Wealth and Welfare (CEET I)*, in which all his papers on the Valuation of Social Income are included.

<sup>6</sup> As, for example, Samuelson did - cf. Samuelson (1961), (1962). See also Weitzman (1976).

As will become apparent in the course of the present investigation, the two papers of 1958 and 1981 cannot be properly understood if they are not read and interpreted in the light of the above mentioned Hicksian revision of the late '50s. In other words, due weight must be given to the radical position taken up by Hicks from the time of 'A Manifesto' onwards - a position which seems to condemn any explicit or masked way of getting rid of social, political or ethical circumstances in the discipline of economics.<sup>7</sup>

5 Chapter XIV of *Value and Capital* aims essentially at showing the logical impossibility of having a well defined concept of 'Income'. As a consequence, he feels the need of giving some justification for this at the very beginning of that chapter:

" My decision to abstain from using these concepts in the last five chapters was, of course, quite deliberate. In spite of their familiarity, I do not believe that they are suitable tools for any analysis which aims at logical precision. There is far too much equivocation in their meaning, equivocation which cannot be removed by the most painstaking effort. At bottom, they are not logical categories at all; they are rough approximations, used by the business man to steer himself through the bewildering changes of situation which confront him." Hicks (1939), p. 171.<sup>8</sup>

<sup>7</sup> It should be also pointed out that around the same time (late '50s) a very illuminating and insightful reconstruction of Welfare Economics was produced by de V. Graaff (1957).

<sup>8</sup> Having premised what he fundamentally thinks of those concepts, he then passes to give the reason why income calculations are needed.

" The purpose of income calculations in practical affairs - Hicks says - is to give people an indication of the amount which they can consume without impoverishing themselves." *Ibidem*, p. 172.

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" the practical purpose of income is to serve as a guide for prudent conduct, [...] this is what the central meaning must be." *Ibidem*.

Hicks's *general* definition of a man's *income* is then the following:

" the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning." Hicks 1939, p. 172.

He then considers three distinct definitions of 'income'. Income No 1 is:

" the maximum amount which can be spent during a period if there is to be an expectation of maintaining intact the capital value of prospective receipts (in money terms)." *Ibidem*, p. 173.

It is worth noticing that in all the Hicksian definitions of income<sup>9</sup> attention is focused on an *individual* entity and calculation is exclusively based upon a *subjective* criterion - expressions like 'without impoverishing', 'prudent conduct', 'well off' cannot logically have an objective definition. From this it follows that any definition of 'Income' must of necessity be an *approximation* to its central meaning.

6 All the considerations surrounding the above mentioned three definitions lead to the conclusion that none of them is eligible as *the* logical and clear-cut definition. Income, as Hicks emphasizes, is *immeasurable* like *utility* (*ibidem*, p.177), and so we are bound to revert to the highly subjective and necessarily 'loose' definition given by Hicks at the beginning.

It is worth to be noted that all the definitions of 'income' are intended as *ex-ante* definitions. The obvious reason is that they should be useful for *decisions* which necessarily must be taken at the beginning of the relevant period concerned.

7 *Value and Capital* is an investigation within the static general equilibrium system with the aim at building a bridge between 'statics' and 'dynamics'. (Hicks (1983), p.360) It is a work based on the *theory of exchange* or 'catallactics'. Although the concept of Social Income explicitly

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But Income No 1 " is far from being in all circumstances a good approximation to the central concept." *Ibidem*, p.173. The reason for this is that the *expected* interest rate was supposed to be constant. If instead it is expected to vary, then income will directly vary too. In this case Income No 2 will be:

" the maximum amount the individual can spend this week, and still expect to be able to spend the same amount in each ensuing week." *Ibidem*, p.174.

If instead the prices of consumption goods are expected to change, then we have Income No 3 defined as

" the maximum amount of money which the individual can spend this week, and still expect to be able to spend the same amount *in real terms* in each ensuing week." *Ibidem*, p.174.

The impossibility of having an exact definition of the expression 'in real terms' makes Income No 3 indeterminate. (There is also another complication connected with the presence of durable consumption goods, for which *expenditure* can in general be different from *consumption*; and the absence of a second-hand market for such goods makes the necessity of a *subjective* criterion of valuation unavoidable.)

<sup>9</sup> Cf. previous footnote.

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appears in *Value and Capital* nevertheless in 1939 Hicks was not still completely aware of the primary importance of that concept in the economics of welfare. In fact, in the *Introduction* of vol. I of his *Collected Essays on Economic Theory*, published in 1981 and almost entirely devoted to emphasizing the crucial importance of the Social Income, he writes:

“ There is one topic which in a treatise on welfare economics can hardly be avoided, but which does not like being normative at all. This is the theory of the macro-economic concepts [...] of which it is sufficient to take the Real Social Income, or Social Product, as an example. [...] That, Pigou thought, and I came to believe that he was quite right in thinking, is *the first of the questions* that in ‘welfare economics’ comes up to be discussed.” Hicks (1981), p. xiv, italics added.

In the footnote appended to the word ‘believe’ of the above quotation he writes: “ Though I had not got there in 1939 (see below, p. 67 note).” Page 67 refers to his 1939 paper *The Foundations of Welfare Economics* published in December (whereas *Value and Capital* was published at the beginning of the same year)<sup>10</sup>. In a footnote on that page, though he recognizes the importance “ that the issues raised in the search for that definition [of real income] are very cognate to those in question here [welfare economics]”, (Hicks (1939), p. 67), nonetheless he maintains that the theory of economic welfare and the theory of the social income should be kept distinct. This helps very much in understanding one of the key elements in the transition between chapter XIV of *Value and Capital* and the 1940 paper on the Valuation of Social Income.

In the latter work, the main purpose is put forward the definition and measurement of Social Income with full awareness. It takes a double track: the *utility* approach and the *cost* approach.

As far as the first approach is concerned, Hicks goes back to Pigou, who in his book *The Economics of Welfare* (1932) “ have sought in the Social Income an index of economic welfare, of the wealth of nations ” Hicks (1940), p. 80. As he will make clear much later on in a couple of essays written in the middle ’70<sup>11</sup>, this point of view does have a direct linkage with the tradition of the Classical economists, in particular of Smith and Ricardo. The linkage would essentially consist in focusing attention on Production and Distribution instead of Exchange and

<sup>10</sup> Hicks (1981), p. xii.

<sup>11</sup> Cf. Hicks (1975) and (1976).

in taking the economic system *as a whole*.<sup>12</sup> But what basically differentiates Pigou from the Classics is the method of evaluating the goods composing the Social Product: the former takes as a basis 'utility', the latter the 'cost' of producing them. It is from this latter method that Hicks takes up his second approach.

8 Hicks's 1940 work marks a quite sharp change compared with his own Chapter XIV of *Value and Capital*. The transition, it might be said, is from the 'catalactics' to the 'plutology'-approach. Although in his prefatory note written for the publication in *CEET I* of the 1940 paper he recognizes as *immediate* origin of it both his then work-in-progress *The Social Framework* (which appeared in 1942) as well as his *Foundations of Welfare Economics* (published in 1939), the more deep and substantial inspiration of that paper was actually Pigou's work *The Economics of Welfare* (1932).

Once the goods to include in the Social Income have been correctly enumerated, the immediate problem Hicks poses is *the* basic issue of rendering homogeneous the collection of heterogeneous goods forming the Social Product - an issue (it is worth recalling) with which the Classical Economists were particularly concerned. It is in this connection that he is wondering whether the market-prices of the goods forming the Social Product are taken as *weights* for their own rights or because they are considered as approximations of something else (marginal utilities or marginal costs). At the same time, the presence of taxed commodities (having two prices) and of commodities (such as public services) not sold on the market (having no market-prices) makes it difficult to accept *one* system of weights. It is here that he envisages the possibility of having more than one system of weights, depending upon the *purpose* for which the calculation of the Social Income is made. As Hicks puts it:

<sup>12</sup> Cf. Hicks (1976), pp. 6-7, where an interesting interpretation of the title of Adam Smith's 1776 book can be found. Furthermore, Hicks says that the search for a 'standard of value' stems from the necessity of evaluating the flow of wealth made up of heterogeneous commodities. He emphasises that "the primary purpose of that theory of value [the Classical theory of value] is not to explain [...] the working of markets; its primary purpose is to identify the values which are needed for the *weighting* of the social product." Hicks (1976), *CEET III*, p. 8.

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“ It is not at all obvious without examination that the same system of weights which is appropriate for comparing real income over time is also appropriate for studying questions of distribution.” Hicks (1940) p.79.

The purposes singled out by Hicks in the 1940 paper are those connected with showing the Social Income as an index of Welfare on the one hand and as an index of Productivity on the other. These two purposes, though in different contexts, will respectively remain also in the Hicksian papers of 1958 and of 1981.

It is important to stress once more the methodological aspect of the investigation referred to now: it is very hard (if not impossible) to conceive *one single* system of weights. Each of the possible different measures of the Social Product can bring about aspects of it which another measure is unable to (and viceversa).<sup>13</sup>

Let us consider in the first place how Hicks introduces in his 1940 paper the definition of ‘Increase in Real Social Income’.

He starts confronting two actual chosen positions of a *single* consumer who is supposed to make his (or her) choice in a two-good competitive equilibrium state; as a consequence, the usual equality between the price-ratio and the consumer’s marginal utilities ratio is attained. Being in equilibrium, it is safe to maintain that market-prices do *represent* in a sense those marginal utilities, giving in this way an indication of the consumer’s ‘economic welfare’.

As is now well established, if  $p_i$  and  $q_i$  stand respectively for price and quantity referring to situation  $i$ , the inequality  $\sum p_2 q_2 > \sum p_2 q_1$  implies that the chosen position of situation 2 is preferred by the *single* consumer to the position of situation 1. Whereas, the inequality  $\sum p_1 q_1 > \sum p_1 q_2$  implies the opposite (1 is preferred to 2).

As long as a *single* consumer is concerned, the above inequalities apply without ambiguity. But once two or more consumers are taken into account, they lose all their strength as suitable tools in showing consistently *collective* preferences, because now any *given* single aggregate of goods can be distributed among the members of the collectivity in (potentially) infinite ways.

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<sup>13</sup> Cf. Hicks (1981), p. xvi.

Having started from the situations confronting the single consumer, Hicks goes on to ascertain to which extent the above inequalities can still be useful, when applied to society as a whole, to get an acceptable definition of 'Increase in Real Social Income'.

It will be useful to quote, before proceeding, the crucial passage of Hicks in which he explains *how* aggregate price-quantity data can be 'exploited' for their being useful for a collectivity too.

"What does it signify if  $\sum p_2 q_2 > \sum p_2 q_1$ ?

It should first of all be noticed that since this condition refers only to the total quantities acquired, it can tell us nothing about the distribution among the members of the group. There may be a drastic redistribution of wealth among the members and the aggregates will remain exactly the same. Thus what the condition  $\sum p_2 q_2 > \sum p_2 q_1$  tells us is that there is *some* distribution of the  $q_1$ 's which would make every member of the group less well off than he actually is in the II situation. For if the corresponding inequality were to hold for every individual separately, it would hold for the group as a whole.

As compared with this particular distribution, every other distribution of the  $q_1$ 's would make some people better off and some worse off. Consequently if there is some distribution of the  $q_1$ 's in which every member of the group is worse off than he actually is in the II situation, there can be no distribution in which everyone is better off, or even as well off. Thus if we start from any actual distribution of wealth in the I situation, what the condition  $\sum p_2 q_2 > \sum p_2 q_1$  tells us is that it is impossible to reach, by redistribution, a position in which everyone is as well off as he is in the II situation.

This would seem to be quite acceptable as a definition of increase in real social income. Let us say that the real income of society is higher in Situation II than in Situation I, if it is impossible to make everyone as well off as he is in Situation II by any redistribution of the actual quantities acquired in Situation I. If this definition is accepted, our criteria can be applied to it without change." Hicks (1940), p. 84.

9 It could be useful to restate the logical process implied in the above quotation.

One of the most important point to notice is Hicks's attempt to 'segment' the price-quantity data in such a way as to get inequalities valid for *each* and *every* consumer of the collectivity and so to argue that the same must hold for society as a whole. That 'segmentation' is provided in the following way.

The actual distribution of situation 1 is represented by the following vector:

$$q_1 = (q_1^{a(1)} + q_1^{a(2)} + \dots + q_1^{a(k)}; q_1^{b(1)} + q_1^{b(2)} + \dots + q_1^{b(k)}; \dots; q_1^{n(1)} + q_1^{n(2)} + \dots + q_1^{n(k)})$$

where  $q_1^{(j)}$  stands for the quantity of good  $i$  ( $= a, b, \dots, n$ ) relative to the consumer  $j$  ( $= 1, 2, \dots, k$ ) in situation 1.

Then, it has to be found a *redistribution* of that same aggregate<sup>14</sup>

$$q_1^* = (q_1^{*a(1)} + q_1^{*a(2)} + \dots + q_1^{*a(k)}; q_1^{*b(1)} + q_1^{*b(2)} + \dots + q_1^{*b(k)}; \dots; q_1^{*n(1)} + q_1^{*n(2)} + \dots + q_1^{*n(k)}),$$

where for each quantity of good  $i$  ( $= a, b, \dots, n$ ) it must result  $\sum_{j=1}^k q_1^{(j)} = \sum_{j=1}^k q_1^{*(j)}$ , such that for *each* and *every* consumer  $j$  ( $= 1, 2, \dots, k$ ) it must hold the following inequality:

$$\sum_{i=1}^n p_2^i q_2^{(j)} > \sum_{i=1}^n p_2^i q_1^{*(j)}.$$

Having previously shown the usefulness of this same inequality for a *single* consumer, now Hicks tries to show its usefulness for society as a whole 'passing through' *each* and *every* member of the collectivity.

Hicks's definition of 'Increase in Real Social Income' was subjected to criticism by Kuznets in 1948, but the most radical and complete critique, as has already been said, was provided by Samuelson (1950).

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<sup>14</sup> A proof that at least one equilibrium-redistribution exists is given by Samuelson (1950), p. 7-8. The symbols he uses in his formulas, however, are quite misleading.

10 Samuelson's work (1950) contains a straight attack to Hicks's definition of what an 'increase in real social income' is. Almost the entire paper is centred on contending the validity of the inequalities referred to above as their being able to reveal, in general, an 'increase in real social income'.

The 'crucial' function employed by Samuelson in all his reasoning is the well known *utility-possibility function (UPF)*,<sup>15</sup> which displays *all* the possible optimal reallocations between individuals of the consumption totals corresponding to each *position* (or *point* in Samuelson's terminology) actually chosen.<sup>16</sup>

According to Samuelson, Hicks's definition of 'increase in real social income' would amount only to saying that the inequality  $\sum p_2 q_2 > \sum p_2 q_1$  implies that the *UPF* of point 2 lies outside that of point 1 *in the neighbourhood* of the actual observed point 2. But the *UPFs* of 'points' (*i.e.* those referring to *given* aggregates of goods) obviously intersect each other and, what is worse, even the *UPFs* of 'situations' (*i.e.* the envelopes of the *UPFs* of 'points') can intersect, with the consequence that no definite conclusion can be drawn from the above inequality. (Samuelson (1950), pp. 6-8 and 12-16.)

More importantly, however, Samuelson's critique of Hicks's definition must be evaluated for the wider implications of the analysis in which it is contained. Samuelson's analysis, in fact, leads to the more general result - as far as the Valuation of Social Income is concerned - that *nothing*, absolutely nothing can be said with certainty, even at the level of welfare and policy implications.

The powerful but nihilistic analysis of Samuelson (1950) had a strong influence at that time: for at least one thing, it contributed to put an end to the controversy on Hicks's 1940 work. Nevertheless, Hicks came back to that topic in spite of the fact that Samuelson left apparently nothing to be said on it. To this issue we have now to turn our attention.

<sup>15</sup> Cf. also Samuelson (1947), p. 244.

<sup>16</sup> It is worth stressing the important difference emphasized by Samuelson between a *point*, as already said, and a *situation*, in which the goods considered are supposed to assume different alternative quantity-levels according to their respective production possibilities.

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11 A very profound revision of his view on the Valuation of Social Income was undertaken by Hicks in a work published in 1958.

Although there he explicitly recognizes the beneficial influence of Samuelson to the point of considering much of his own "no more than the imposition of a somewhat different 'slant' upon Samuelson's argument" (Hicks (1958), p. 141, *CEET I*), nevertheless it can be fairly maintained - as will be shown in the following discussion - that the above opinion of Hicks is really an involuntary overstatement. It is true that the co-existence of multiple want-systems and alternative states of income distribution are crucial in evaluating the Social Income and therefore they cannot be ignored (as Samuelson amply showed in 1950, although he so patently forgot in his 1961 paper); nevertheless, as to *what kind* of troubles they precisely lead and within *which boundaries* they were acting nothing was said by Samuelson. What Hicks basically aims at in his 1958 contribution is to fill this gap and thus showing what the orthodox view (the 'classical' theory in the Hicksian terminology) could effectively offer, in a positive way, on the Valuation of Social Income. In so doing and by contrast to the nihilism expressed by Samuelson in 1950, all the limitations of the 'classical' theory are much more *explicitly* put forward and given a concrete economic content.

Hicks's purpose is to explore the possibility of measuring the Social Income in terms of Utility. He proposes to take for granted the distinction between the cost and the utility measures (to which he alluded as early as in the 1940 paper) and to concentrate attention only on the latter - although he recognizes the relevance of the cost measure: "it is the cost interpretation, in terms of resources applied, which is the interpretation which for most purposes we mainly want" (Hicks (1958), p. 143).

The Cost-approach and the Utility-approach differ from each other for the different *meaning* that the concept of Real Social Income assumes: the former aiming at measuring the 'Productivity' of the economy, whereas the latter the 'Welfare' of the society.

For measuring the Social Income a rule of equivalence among heterogeneous goods and services is needed. Market prices are *one* of these possible rules; but they are not always suitable; in many cases they are not even available. To overcome these difficulties there are two alternative kinds of equivalence to be used:

(a) equivalence in terms of Cost (goods are equivalent if they are substitutable in terms of producibility - alternatively producible from the same given resources);

(b) equivalence in terms of Utility (goods are equivalent if they are substitutable in terms of use - alternatively usable for the attainment of the same given ends).

12 The two basic assumptions of the 'classical' theory of Utility theory are (i) the Assumption of *Integrated Wants* and (ii) the Assumption of *Revealed Wants*. These assumptions are closely analyzed in their own foundations in order to better understand the 'classical' theory as it stands and also to evaluate the possibility of overcoming the limits of those assumptions.

The first assumption led to two extreme positions: on the one hand, that of the cardinalists, who envisaged a *unique* Utility Function for the society as a whole; on the other, the position of the ordinalists, who rightly conceived, from their own point of view, *infinite* Utility Functions, for what mattered was simply the ordering of the levels of satisfaction.

The Assumption of *Integrated Wants* is heavily criticized: after having remembered the well known trouble of additivity of utilities, Hicks denies its validity for any *actual* individual consumer. The ordering of all the alternatives "it is obvious nonsense" (Hicks (1958), p. 148) and the integrated want-structure is an assumption "not tolerable at all" (*Ibidem*, p. 149). As Hicks conclusively puts it in this respect:

"The crude identification of the 'preference machines', whose working we analyse so finely in Demand theory, with real human beings, is just wrong" (*Ibidem*).

A way of escaping from this unrealistic point of view would be to assume ideal or representative consumers; in so doing, however,

"we then neglect *both differences in wants and differences in incomes*, and suppose that the whole supply of each commodity is divided among a large number of representative consumers, each of them being [...] identical with every other" (*Ibidem*, italics added).

A less rigid assumption would be to divide the population into sub-groups or classes with a representative individual in each of them. In this way the assumption of integrated wants would be valid only for each sub-group or class but no longer for the economy as a whole.

As far as the second assumption of the 'classical' theory is concerned, that of Revealed Wants, Hicks points out carefully the evident drawbacks it brings about:

- (i) the impossibility of 'revealing' wants if the market does not exist or if it is not free;
- (ii) a failure of 'revelation' due to consumer's irrationality or lack of information;
- (iii) the distinction between consumers who choose and consumers who enjoy. In this last instance, apart from the obvious example of associations such as the family and the State, the case of the investment goods should be emphasized, for which that distinction seems particularly suitable. By their very nature, in fact, investment goods are necessarily acquired by people different from those who *ultimately* will enjoy their 'fruits'. The Assumption of Revealed Wants, in this connection, appears severely restrictive, for it excludes from the Social Income a very important class of goods.

Therefore Hicks tries to find out a *measure* of a change in Social Income within the 'classical' framework.

13 He examines two alternative positions,  $A$  and  $B$ , of the 'representative' consumer in order to estimate the gain and not merely its existence - the following Fig. 1 helps in clarifying the discussion. Positions  $A$  and  $B$  are characterized by different  $n$ -(column) vectors of prices ( $p_A$  and  $p_B$ ) and by different  $n$ -(column) vectors of quantities ( $q_A$  and  $q_B$ ) of goods consumed and thus they are not directly comparable. It is however possible to make an *indirect* comparison by selecting a 'third position'  $\alpha$ , directly comparable with  $B$ , which is *indifferent* to  $A$ .

There are two cases in which a numerical comparison between  $\alpha$  and  $B$  is possible, that is to say when a basket of goods can be dealt with *as if* it were a single commodity:

- (1) when the composition of the vector of quantities remains unchanged ( $q$ -theory, in Hicks's terminology);
- (2) when the prices are fixed or all change in the same direction and proportion ( $p$ -theory, in Hicks's terminology).

Assuming case (1) first and perfect divisibility of each commodity<sup>17</sup>, we can arbitrarily take an  $m$ th part of it and form, in each of the two situations, a composite commodity  $\frac{1}{m} \mathbf{q}$ , so that (for example)  $m \left( \frac{1}{m} \mathbf{q}_A \right)$  will be the commodity-vector consumed in the position  $A$ . With these premises, the Hicksian construction of a *physical* measure of the 'gain' can be summarized by the following logical steps:

- (i) Select the number of  $B$ -bundles, let us call it  $a$ , such that, evaluated at  $\mathbf{p}_A$  prices, has the *same value* of  $\mathbf{q}_A$ . Thus we have:

$$\mathbf{p}_A^T a \left( \frac{1}{m} \mathbf{q}_B \right) = \mathbf{p}_A^T \mathbf{q}_A.$$

- (ii) Assume a relation of want-satisfying *equivalence* between the  $m$  bundles of position  $A$  and a number of  $B$ -bundles, let us call it  $\alpha$ :

$$m \left( \frac{1}{m} \mathbf{q}_A \right) \sim \alpha \left( \frac{1}{m} \mathbf{q}_B \right).$$

- (iii) The number  $a$  of  $B$ -bundles represents the same purchasing power of the number  $m$  of  $A$ -bundles of position  $A$ , but since the latter is the position *actually* chosen,  $m$   $A$ -bundles will be strictly preferred to  $a$   $B$ -bundles.

- (iv) From steps (ii) and (iii) it follows that  $\alpha > a$ , that is the number of  $B$ -bundles equivalent in want-satisfying power to the  $m$   $A$ -bundles of position  $A$  is greater than the number of  $B$ -bundles having the same value of the  $m$   $A$ -bundles at  $\mathbf{p}_A$  prices.

An analogous procedure can of course be followed if one started from position  $B$  instead of position  $A$ .

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<sup>17</sup> A device for bypassing the embarrassing task of slicing a 'pet okapi' is provided by Hicks (1958), pp. 154 and 177, *CEET I*, by reckoning the okapi 'consumer' as forming a class by himself.

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14 With these four logical steps at the background, Hicks shows not only that the usual statistical indices (of the Laspeyres- and Paasche-type) can be provided, but also that specific utility-measures can be constructed, the latter being *numerically* expressed in terms of physical commodities.

Taking Fig. 1 as a reference, the ratio  $OB/O\alpha$  is a utility-measure of the change in *real* income for the representative consumer in passing from position  $A$  to position  $B$ ; whereas the ratio  $O\beta/OA$  is a utility-measure of the change in *real* income from position  $B$  to position  $A$  - both being in real terms.

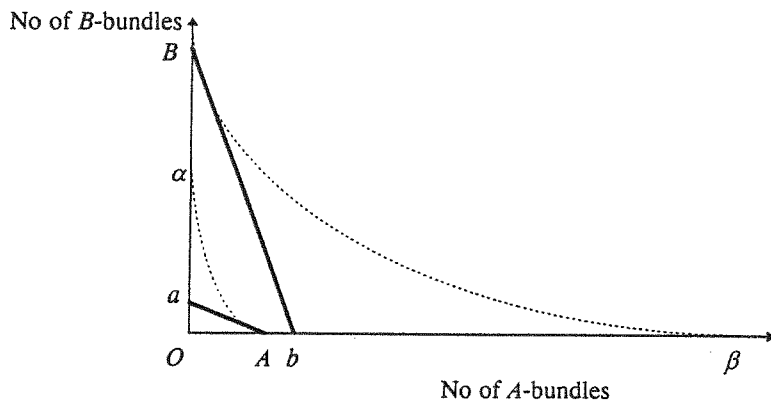


Fig. 1

What is new and specific with these commodity-ratios, relative to the traditional statistical indices, is that the former provide *cardinal* measures of the changes in real income which are expressed in terms of *physical commodities* and that they always go *together* in the same direction, *i.e.* they are saying *coherently* the same thing. Although they are *coherent* measures, nonetheless they can *numerically* be quite different from each other, *i.e.* the *numerical* change in the real income will depend upon the position one starts from. This result could follow *even if* the two corresponding Laspeyres- and Paasche-indices were identical.<sup>18</sup>

It is worth noticing that the statistical quantity-indices are made up by objective market data, whereas the Hicksian utility-measures spring directly from the consumer. It should be emphasized that the relation of *want-satisfying equivalence* is effectively a crucial assumption of the model.

Not only we have two distinct *L*- and *P*-quantity-indices, we have also *no single* utility-measures; as Hicks puts it: "Every measure is infected by relativity: every measure depends upon the point of view from which the measure is taken" (p. 158, *CEET I*), viz. according to whether one starts from position *A* or from position *B*.

Secondly, even if the *L*- and *P*- indices happened to be identical (the two price-lines of Fig. 1 - each one connecting bundles valued at  $p_A$  prices - would be parallel in this case) the utility-measures *l* and *p* could numerically be quite different from each other. This latter circumstance should be considered as the *normal* case, because "the proportions in which commodities are combined in the consumer's budget depend quite largely on the level of real income he attains; they are more sensitive to changes in the level of real income than they are (excepting among groups of close substitutes) to changes in relative prices" (p. 160, *CEET I*). As a result, the assumption of constant proportions in the consumption-vectors can be viewed as a kind of 'constraint' put on the consumer. This is one of the reasons to switch to the alternative hypothesis

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<sup>18</sup> A set of relations between the traditional indices and the new utility-measures can be put forward. Letting *L*- and *P*- be the quantity price-weighted indices referred to above and expressed as:

$$L = \frac{p_A^T q_B}{p_A^T q_A} = \frac{OB}{Oa} \quad P = \frac{p_B^T q_B}{p_B^T q_A} = \frac{Ob}{OA}$$

and the Hicksian utility-measures geometrically expressed - cf. Fig. 1 - as:

$$p = OB/Oa \quad l = Ob/OA$$

we have  $L \geq p$  and  $l \geq P$ .

Recalling that either  $l, p > 1$  or  $l, p < 1$  we can have:

- $L, P > 1 \rightarrow l, p > 1$  : real income rises,
- $L, P < 1 \rightarrow l, p < 1$  : real income falls,
- $L > 1, P < 1 \rightarrow$  either  $l, p > 1$  or  $l, p < 1$  : indeterminate real income change,
- $L < 1, P > 1 \rightarrow$  'impossible' case under the 'classical' assumptions.

(b), that of considering the commodities exchangeable at *fixed* prices (*p*-theory, in Hicks's terminology).<sup>19</sup>

The next task is to analyse the consequences of relaxing the two fundamental assumptions of the 'classical' theory, namely, integrated wants and revealed wants.

15 Hicks's suggestion is a division of society into several classes (or groups) in each of which the assumption of the Representative Consumer still continues to hold. Let us take as a reference the framework of the *q*-theory.

Once *different* incomes and *different* wants of *different* consumers are taken into account, the crucial step (ii) of § 13 (that is the relation of *equivalence* between two different bundles of commodities) has to be redefined as follows.

Define a series of consumption sets,  $q_1, q_2, \dots, q_n$ , each one having the property of "being distributed, *without waste*, in such a way as to keep *each* individual on the same level as he reached initially" (Hicks (1958), p. 169, *CEET I*, italics in the text). In other words, each of the above consumption set  $q_i$  must be such as to be *collectively indifferent* to the initial consumption set  $q_A$  - which means that the former set  $q_i$  must be capable of being distributed among the consumers of all the classes so as to leave each individual on his initial indifference level and *without leaving any opportunity for mutual advantageous exchange*. The latter qualification is absolutely required for making a consumption set *collectively indifferent* to another (and so the words "without waste" in the Hicksian sentence quoted above, mean that the quantity of each commodity composing the consumption set must be *just* sufficient as to keep each individual as better off as he was initially).

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<sup>19</sup> Cf. Hicks (1958), pp. 160-4.

The analysis provided at *micro* level in the previous sections can now be re-interpreted at *macro* level. Having the *q*-theory at the background, the economy is supposed to consume initially *OA* *A*-bundles (Fig. 1 can still be taken as a reference) and the  $A\alpha$  former relation is now the corresponding *collective* indifference curve. However, at *macro* level here under consideration, the indifference curves (specifically,  $A\alpha$  and  $B\beta$  of Fig. 1) can now *generally* intersect each other (Scitovsky (1941)), because integrated wants are not guaranteed and consequently the utility-measures loose their property of being *coherent*, namely they now could move in *opposite* directions, depending upon which initial position the economy starts from - see Fig. 2.

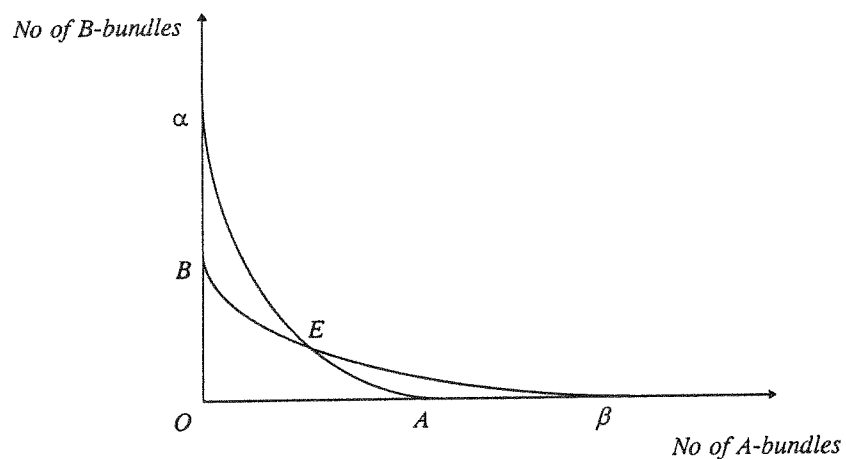


Fig. 2

Nevertheless, the generalization of the 'classical' theory contains the *non-intersection* case as a special one. Hicks attempts to provide an interpretation of the *economic* meaning of such a special case and then, by contrast, of the *intersection* case in general.

Taking the *intersection* case as a starting point (Fig. 2), the actual position *E* *simultaneously* belongs to both collective indifference curves  $A\alpha$  and  $B\beta$  and so it is collectively indifferent to both positions *A* and *B*. This is logically possible only if the *E*-goods are differently distributed, which means: only if *E* incomes are distributed into two different ways. And since we

can distribute a given income into *many* different ways, for any actual position *E* we can have a fan of indifference curves 'pivoting' (geometrically speaking) on point *E*. It can then be supposed that distribution (in the sense specified above) is the same along any collective indifference curve and that their intersection is the result of changing distribution in a *significant* way.

16 It should honestly be said that this second part of his investigation is not so crystal clear as generally are Hicksian expositions.<sup>20</sup> Being however a very important part of his positive contribution, it deserves a careful reconstruction.

Situation *A* is taken as a starting point to be compared with situation *B*. It is also supposed that in the transition from *A* to *B* there is a change in income distribution (with losers and gainers) associated with a change in commodity-composition. Under these circumstances it is logical to suppose the losers having a stronger propensity to consume *A*-goods whereas the gainers, on the contrary, a stronger propensity to consume *B*-goods.

We can hypothetically divide the whole transition into two steps (which, by analogy, remind us the Hicksian distinction between the income and the substitution effects).

*Step 1:* It is supposed that a change in income distribution takes place with *unchanged* quantities of commodities. The change in income distribution (which - it is worth recalling - simply consists in a redistribution of income among *different* classes (or groups) of the society) necessarily implies a change in the composition of the *demand* for goods. At the present *Step 1*, since the quantities of commodities are unchanged but the demand-composition is changed, it can be supposed that there *would be* a fall in the price of the *A*-bundles in terms of *B*-bundles.

*Step 2:* It is supposed that a change in commodity-composition takes place under an income distribution which is supposed to remain *unchanged*. The change in commodity-composition has naturally occurred to meet the demand for goods expressed by the 'new' income distribution. It is at this point that the behaviour of the losers towards the *B*-goods is crucially important. In fact, if they consider the *B*-goods as acceptable substitutes for the *A*-goods, then the relation of *equivalence* between the *A*-bundles and the *B*-bundles will be such *as if* no change in distribution occurred and thus there *will be* a fall in the price of the *A*-bundle in terms of the *B*-bundles. But if

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<sup>20</sup> Partly, Hicks himself (1981), pp. 183-4, explicitly recognizes this in the *Addendum* to his 1958 work.

the losers *still* maintained, in situation *B*, a strong propensity to consume *A*-goods (which would mean that they do *not* consider the *B*-goods as acceptable substitutes for the *A*-goods) then the relation of *equivalence* will show the necessity of having greater amounts of the *B*-goods in order to leave each consumer as indifferent as he was in situation *A* - and this would imply a *rise* in the price of the *A*-bundle in terms of the *B*-bundle.

17 It should however be noticed that Hicks is too confident in maintaining the *stringency* of the conditions for the occurrence of the 'perverse' case. It is true that a change in commodity-composition can have different causes than changes in income distribution; but if the latter change does take place, it seems very hard to share with the Hicksian view that the losers *will* be so ready to accept the *B*-goods as substitutes for the *A*-goods. The degree of their willingness to accept that substitution (expressed by the price-elasticities of demand) is a very delicate question which cannot be resolved *a priori* and in an abstract way. The particular circumstances in which a redistribution of income takes place must be studied meticulously: the kind of classification of the classes or groups in which the society has been divided; the initial incomes of these classes from which a redistribution starts; the direction of that redistribution; the habits, the actual social and political conditions characterizing the society at the time at which the redistribution of income is supposed to take place.

Therefore, although it is true that the 'perverse' case can only arise under specific circumstances, it seems at the same time undeniable that *a priori* probability of those specific circumstances to occur is not smaller than the other circumstances. Indeed, they are heavily based upon a subjective element such as the willingness of the losers to accept substitutes. If this is accepted, Hicks's view that "the Utility measure of real social income does not need the Integration assumption for its validity" is a bit hard to accept without qualifications.

At the same time, it is worth to emphasize the positive advance of Hicks's contribution with respect to Samuelson's (1950), for it has the merit of rendering explicit the conditions at which coherent measures are possible to achieve.<sup>21</sup>

<sup>21</sup> In an insightful survey, Sen (1979) put forward two essential methods for investigating the comparisons of real income (personal and national) both in alternative situations as well as in actual situations: the 'real income theory' and the 'economic quantity (or price) indices method'. To these two methods Sen adds a third one, which could be called the 'named goods method' for short.

18 The Cost approach to the Valuation of Social Income is analysed by Hicks in a paper (1981) published more than twenty years later than that on the Utility approach (1958). The 1981 work concludes the three 'triads' on the subject here concerned.<sup>22</sup>

The Cost approach to the Valuation of Social Income is essentially based on the equivalence of the 'quantity of resources' needed to produce a set of goods. As is obvious, the problem of reducing the elements of the vector of the resources arises once again, *i.e.* The problem of finding the appropriate weights for adding up heterogeneous inputs.

From an historical perspective, the 'labour theory of value' can be considered the most 'popular' device intentionally envisaged to measure a collection of different commodities; and it is from here that Hicks starts his own investigation.

He takes up first the labour theory of value by considering quantities of 'homogeneous' labour required to produce any given commodity. If  $q_i$  and  $c_i$  are respectively the quantity of the commodity  $i$  and the quantity of labour required to produce a unit of that commodity, indices of output and productivity can *formally* be constructed. (Hicks (1981), pp. 244-245, *CEET I*.) But what is their ultimate meaning? Is there any hope to find acceptable measures in some other direction?

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By the 'real income theory', to which the two approaches just mentioned above belong, it is not possible to rank any two bundles, for although the set of bundles definitely inferior to a given one can be separated out, no possible ranking is possible for the rest of the other bundles.

The second method (the 'economic quantity (or price) indices method') provides ratios of either the minimum expenditures needed to reach given levels of welfare or minimum costs for reaching a welfare level expressed by a given bundle of commodities.

Strangely enough, however, Sen's otherwise illuminating survey does not 'allocate' Hicks's contribution in any of the first two methods mentioned above, to which at least a comparison could be made. The point is that Hicks's method does not *fit* to any of them. In fact, as has been shown, the Hicksian measures are *cardinal* measures of Real Social Income. (They are 'cardinal', because they are expressed in *physical* units.) Moreover, they need (i) *no* revealed preferences (ii) *no* convexity (iii) *no* indifference surfaces. In this sense, they require *less* information whereas they deliver, at the same time, *more* information. It is worth to cp. also Sen (1987).

<sup>22</sup> At the very beginning of his inquiry Hicks explicitly anticipates that "any results which emerge from a study of the cost approach must be largely negative" (p. 243, *CEET I*), nevertheless his methodological attitude of showing how far the analysis can be stretched to give positive results is still alive and very much worth of being considered.

19 In order to treat a composite commodity as if it were a homogeneous one, Hicks made reference to two alternative methods: either the ratios of the different goods of the composite commodity or the ratios of their prices must be constant. The recourse to the labour theory of value on the side of the Cost approach (whose results are quite negative) can be considered as the analogue of taking commodity-prices as fixed on the side of the Utility approach. Further investigation still remains to be done by considering the case of constant ratios of the various commodities.

To this end, Hicks takes two situations each one characterized by having the same number of bundles of commodities. Each bundle is made up in the same fashion as it was done in the Utility approach, namely by dividing each single commodity, pertaining to each situation considered, in  $m$  arbitrary units. The number of bundles corresponding to the two situations considered can be respectively represented along the axes of the diagram as in Fig. 3.

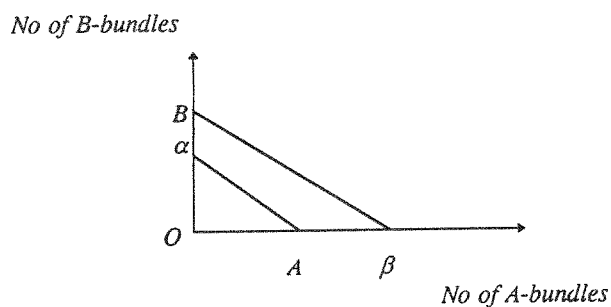


Fig. 3

As in the Utility approach, Hicks endeavours to establish a relation of equivalence between two different bundles *in terms of the resources needed* for their production. The relation of equivalence is of the utmost importance, for it allows to establish a 'third position' by means of which it is possible to cardinally compare two different sets of commodities.

Let us start, in the first place, by examining that relation of equivalence simply in terms of homogeneous labour, namely, by assuming the 'pure' labour theory of value. Under such an assumption the following problem can be formulated: given the (column) vector of the constant

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labour coefficients  $c_A$  for the production of  $m$  bundles of  $A$ -type, how many bundles of  $B$ -type could possibly be produced *with these same coefficients and with the same amount of labour employed in the production of the  $A$ -bundles?* Let us assume (i) that it is *always possible to know* these 'alternative' hypothetical processes of production; (ii) that they are *feasible*. (It is also assumed that the reversed hypothetical operation is possible too, viz., given the (column) vector of the constant labour coefficients  $c_B$  for the production of  $m$  bundles of  $B$ -type, we can imagine - *with these same coefficients and with the same amount of labour employed in the production of the  $B$ -bundles* - a different production in terms of bundles of  $A$ -type.)

Let  $\alpha$  standing for the number of  $B$ -bundles producible by *the same quantity of labour and the same techniques* of the  $A$ -situation (and, conversely,  $\beta$  for the number of  $A$ -bundles producible by *the same quantity of labour and the same techniques* of the  $B$ -situation).

It is also hypothetically possible to produce a 'product-mix' of  $A$ - and  $B$ -type which will be represented as a point on the *straight* line (since the 'pure' labour theory of value is here assumed)<sup>23</sup> joining the actual position  $A$  to the hypothetical position  $\alpha$  (using coefficients  $c_A$ ) or on the *straight* line joining the actual position  $B$  to the hypothetical position  $\beta$  (using coefficients  $c_B$ ).

Calling  $q_A$  and  $q_B$  respectively the composite-commodity vectors corresponding to the two actual positions  $A$  and  $B$ , we then have the equation:

$$c_A^T \left( x \left( \frac{1}{m} q_A \right) + y \left( \frac{1}{m} q_B \right) \right) = c_A^T q_A$$

where, putting  $x=0$ , we get  $y = \frac{m c_A^T q_A}{c_A^T q_B}$  which is geometrically equivalent to  $O\alpha$  - see Fig. 3.

The ratio  $\frac{c_A^T q_B}{c_A^T q_A}$  is the Laspeyres quantity-index which (since  $m$  is equal to  $OB$ ) is geometrically equivalent to  $\frac{OB}{O\alpha}$ . Similarly,  $\frac{c_B^T q_B}{c_B^T q_A}$  is the Paasche quantity-index, geometrically

<sup>23</sup> With heterogeneous labour or different kinds of resources the 'level curves' - as Hicks names the lines joining the two points  $A$  and  $B$  - will have in general a non-linear shape.

equivalent to  $\frac{O\beta}{OA}$ . What these indices respectively express is not only the relative change in the quantity of (homogeneous) labour which would be required, with  $A$ -labour coefficients ( $B$ -coefficients), to produce  $B$ -bundles ( $A$ -bundles); they respectively express also the relative increase in the actual production of  $B$ -bundles ( $A$ -bundles), in the  $B$ -situation ( $A$ -situation), over the number of  $B$ -bundles ( $A$ -bundles) which *could have been produced* with  $A$ -techniques ( $B$ -techniques) from the  $A$ -quantity ( $B$ -quantity) of labour.

The crucial point to notice here is, once more, the *relation of equivalence* put forward, which makes it possible the *cardinal* comparison of two otherwise different situations. Situation  $B$ , for instance, is *cardinally* comparable with situation  $A$  via the 'third position'  $\alpha$ ; in other words, the two positions  $A$  and  $B$  are *cardinally* comparable through the relation of equivalence referred to above. (The same for situation  $A$ , which becomes *cardinally* comparable with situation  $B$  via the 'third position'  $\beta$ .)

The relation of equivalence here under discussion can still be assumed in a more general context, if homogeneous labour coefficients are replaced with heterogeneous ones, or even with heterogeneous inputs *tout court*. What is required is the *knowledge* of the alternative production process, which means the possibility of *substitution* between sets of goods producible from a given set of resources. Once this is granted, we can alternatively interpret both  $\alpha$  and  $\beta$  as the Opportunity Cost of situations  $A$  and  $B$  respectively, *i.e.* the number of bundles which might alternatively be produced with the actual given techniques and from the actual given resources in each of the two situations considered.<sup>24</sup>

20 The above Opportunity Cost measures - which have been formulated in term of 'bundles' of commodities - do have, however, a serious drawback. By contrast to the analogous

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<sup>24</sup> Hicks says that the essential point behind the relation of equivalence is substantially of the same tenet of that implicitly behind many of the comparative-statics problems, as for instance: 'How would the system, as we have it, react to changes in demand?' (Hicks (1981), p.257 *CEET I.*)

cardinal measures formulated in the Utility approach, the former do *not* possess, in general, the property of being *coherent*. It is then worth to investigate this matter a bit closer. This can be done with the help of a diagram - see Fig.4.

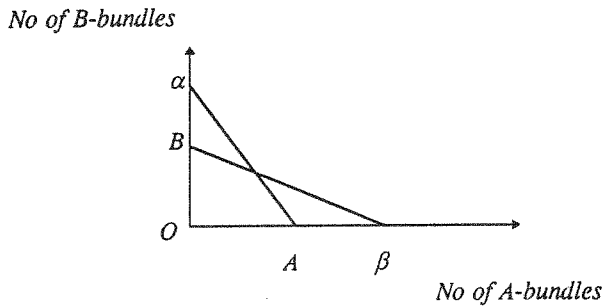


Fig.4

In it, the two straight lines  $A\alpha$  and  $B\beta$  are drawn, but here - by contrast to those of Fig.3 - they intersect. In the case as represented in Fig.4 the two quantity-indices go in the opposite directions, and so no coherent measure can be found. The economic explanation of this incoherence lies in the specific relations of equivalence discussed earlier. In other words, the existence of incoherent measures basically depends upon the *extent* of 'substitutability' between the two sets of products,  $q_A$  and  $q_B$ , as being alternatively producible from given resources. Under the assumption of the 'pure' labour theory of value, it is perhaps permissible to imagine the *non*-intersection case (and so coherent measures can be envisaged). This can be granted if one concedes the implicit assumption of comparing technological situations not so much different from each other - as it is also the case, for instance, in comparing at successive dates the National Product of a country coming out from an (almost) unaltered technological structure. (Hicks (1981), p.260, *CEET I*.) But it must be admitted that in general that cannot be granted.

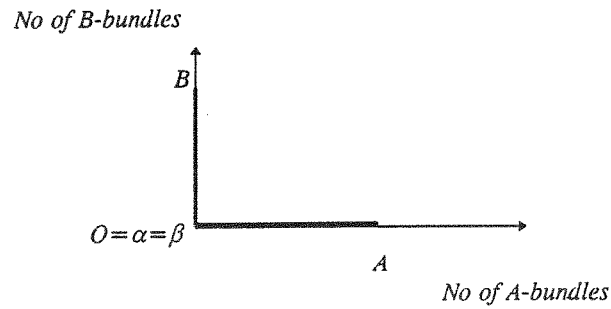


Fig.5

Fig.5 above shows the extreme case of what Hicks calls *perfect incoherence*: the extent of substitution between the two sets of products is null, as it can happen in the case of two countries having resources qualitatively so far apart from each other and such that not even a single product of a country can be produced from the resources of the other.<sup>25</sup> Fig.6 shows instead the other extreme case of what might be called *perfect coherence*, in which the two sets of products turn out to be *perfectly* substitutable from the given resources.

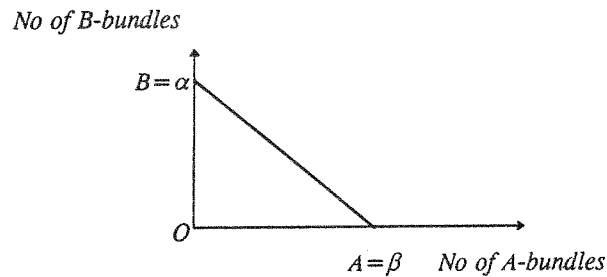


Fig.6

<sup>25</sup> Hicks suggests that this case occurs in comparing two quite different countries like, for instance, Saudi Arabia and Japan.

It should be noted the big difference existing, in this connection, between the Utility approach and the Cost approach as far as the possibility of incoherence is concerned. In the former, once the assumption of integrated wants is admitted, it is logically impossible for the utility measures to result incoherent. Unfortunately, this sort of escape, in the Cost approach, does not exist - even by assuming the 'simplest' theory of real cost as the 'pure' theory of value.

There is also another important difference between the Utility approach and the Cost approach. The relation of equivalence assumed in the former approach is made on a purely *subjective* ground; whereas in the latter that relation is based on *objective* elements pertaining to the existing technology of the system(s) considered.

21 Although in his first phase Hicks was a disbeliever in welfare economics, along all his career as an economic thinker from 1939 onwards he has been very concerned with this same subject of the economic discipline; indeed it is the work on welfare economics (along with that on general equilibrium theory) that figures in the motivation of the Nobel Prize conferred to him in 1972. What we have been mainly interested in, however, is not the whole Hicksian work on welfare economics, but one particular topic: the theory of Real Social Income and the problem of its measurement.<sup>26</sup>

In the present paper we tried to find the path Hicks walked through on the Valuation of Social Income. The early Hicksian concepts of Income, which can be found in *Value and Capital* (1939) and which have become so fashionable nowadays in so many works on environmental economics, have been already explicitly dismissed by Hicks himself in his own 1939 work, for their unavoidable incoherence at the aggregate level. In fact, they will not appear any more in any of the subsequent Hicksian papers on the subject. Although in the '50s, particularly after Samuelson's 1950 article, it seemed that nothing else could be added to the issue of the Valuation of changes in Real Social Income, Hicks - in his 1958 and 1981 papers devoted to this topic - was able to fill in new wine in the old barrel apparently and definitely emptied by Samuelson. This happened at a time

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<sup>26</sup> It is a topic chosen as a transition from the demand theory in its econometric reformulation (the 1934 paper written jointly with Allen) and the normative welfare economics, as it "does not look as being normative at all" (Hicks (1981), p. xiv).

when he had come to a rejection of 'Economic Welfarism' as originated from Pigou's Economics of Welfare. The characteristic feature of economic welfarism was the belief that the ends of economic life are to be found *within* economics - as Hicks explicitly stated in 'A Manifesto' (1959).

What Hicks - successfully in our view - does in the two above mentioned papers is a reconstruction of *different* measures of Real Income, showing to *what extent* each of them can be relied upon - Scitovsky's exception and Samuelson's critique notwithstanding. His research ultimately came to the conclusion that we cannot possibly have *the* measure of a 'change' in Social Income, but at most *a* measure of it, according to the alternative *goals* we envisage to achieve in measuring Social Income. It seems to be argued, in other words, that Social Income cannot be meaningfully measured independently of some specific end. In this reconstruction, the role played by alternative income distributions, which causes so many troubles in any problem of valuation, is analyzed in a new perspective, for the most relevant social aspects of the *consequences* of taking into account alternative income distributions are explicitly considered and evaluated. If there are many reasons for the Social Product not to be taken as a measure of welfare - Hicks says - there are some of them very peculiar when we come to the methods of measurement. Starting from a selected method of measurement, if a change in Real Social Income from *A* to *B* resulted as an improvement and *simultaneously* passing from *B* to *A* it resulted as an improvement as well, then there would be a patent contradiction and so the measure would appear incoherent. As Hicks shows, this is what actually can happen in the Utility Approach as well as in the Cost Approach. The only measure which might be relied upon as coherent is that based in the least realistic of the assumptions - namely, when the Social Product is equally divided among identical consumers (the Representative Consumer hypothesis). By having recourse to an analytical device which allows to make comparisons in a 'cardinal' way, Hicks is able to produce different index type measures that enable him to say not only whether an increase in Real Income has taken place, but also to estimate the magnitude of this same increase. As we have shown in the present paper, these indices have been employed in the Utility Approach and in the Cost Approach and in the former these indices allow us to spell out the conditions in which the 'perverse' case (when the curves intersect and the Scitovsky exception arises) may take place.

As a conclusion, looking in retrospect, aspects of *continuity* seem to be present over the whole work on Social Income from *Value and Capital* till the last 1981 paper. Our assessment of Hicks's

work on Real Social Income points out that it is impossible to have a definite measure of the Social Income *independently* of the reasons for which that very measure is required. To *measure* an aggregate of a heterogeneous collection of commodities means to *value* those commodities - and valuation cannot *ultimately* be made independently from considering society as a whole with all its political and ethical implications.

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