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THE CASE FOR REALISTIC EXCHANGE RATES

Randall Hinshaw

The present paper is concerned with the role of exchange rates in the European Recovery Program. This is a subject on which current opinion is sharply divided. At one extreme is the view that, under present conditions, the pattern of exchange rates is a question of only secondary interest, since the establishment of balance in international accounts is not the immediate objective of the program. According to this view, a premature balancing of international accounts could actually defeat the major purpose of the program, which is to attain, through the temporary injection of large amounts of foreign aid, a structure of production in Western Europe which will assure to that area reasonable standards of living on a self-supporting basis. At the other extreme is the thesis that the problem of European recovery is primarily a matter of unrealistic exchange rates, and that appropriate changes in these rates would remove the necessity for external assistance. Those who hold this view are impressed with the wastes which an inappropriate exchange-rate structure involves in the way of misdirected resources, distorted trade patterns, and planning where planning cannot be evaluated by the test of comparative cost.

Between these opposing points of view is a growing body of opinion in favor of a prompt return to realistic exchange rates, not as a substitute for the present program of American assistance, but as the logical accompaniment of a sound recovery program. Those who take this position recognize that the problem facing Europe is, in a sense, a "productivity crisis" calling for a high level of investment and for improvement in techniques; but at the same time, they insist that productivity is not merely a matter of equipment and technology but of allocation of resources, and that in an environment of inconvertibility, discrimination, and bilateralism, one can only wonder how rational, in terms of real income, the global allocation of resources may be.<sup>1/</sup> It is this third position--in which the writer concurs--to which chief attention will be directed in this paper.

In the ensuing discussion, no case will be made for reducing the level of American aid to Europe. It will be assumed that financial assistance continues at the level now contemplated, and the argument will be concerned solely with making the most effective use of the aid which is extended. By a "realistic" exchange rate is therefore meant a (unitary) rate which equates the "legitimate" demand for foreign means of payment with the supply, including, as part of the supply, the dollars of special assistance provided by the United States Government. The term "legitimate" is to be construed broadly, and is added only to make allowance for what is now generally regarded as the wholly reasonable power to prevent certain types of international transactions which are not in the public interest. Such transactions are principally in the capital category, and include capital flight as well as speculative purchases of foreign exchange. Whether the term "legitimate demand" should be defined in such a way as to permit the exclusion of so-called luxury imports will not be here debated, except to say that the exclusion of such imports would appear to make sense only as part of a broad program to restrict consumption as a whole.

Realistic exchange rates, as thus defined, are a prerequisite to the success of nondiscriminatory multilateral trade on the basis of general convertibility of currencies. From a world, as distinguished from a purely national point of view, the economic superiority of this type of international environment (at least under conditions of full employment) has never been seriously questioned. While the gain from fully multilateral trade is difficult to evaluate in purely quantitative terms, there can be no doubt that it is very great. To rest one's mind on this point, it is necessary only to contemplate what would happen to American per capita real income (both quantitatively and qualitatively) if the United States were to break up into half a dozen or more countries, each of which were to proceed to balance trade bilaterally with each of the others.

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<sup>1/</sup> In particular, they view with deep misgivings the contention that multilateral trade is a "luxury" which Europe cannot afford.

Nevertheless, while the virtues of multilateralism continue to be widely extolled, there is widespread pessimism regarding the possibility of restoring a workable multilateral pattern of trade and a tendency to assume that such a pattern can be established, if at all, only after a long period of piecemeal adjustments. Much of this pessimism stems from the belief that drastic changes in exchange rates would be required to restore a multilateral pattern of trade, and that such changes in rates would necessitate painful adjustments. Moreover, in recent years, the conviction has grown that in some cases it may be very difficult or even impossible for a country to achieve international equilibrium by a change in the external value of its currency.

This conviction is in part the outgrowth of empirical studies which have shown that for certain important countries, including the United States, the demand for imports is apparently much less sensitive to price changes than had formerly been assumed.<sup>1/</sup> In some cases, the computed average price elasticity of demand for imports has been well below unity, indicating that, for such countries, a rise in the import price level (in domestic currency) is associated with a rise, rather than a fall, in the value of imports (in domestic currency).

These empirical studies have generally been based on the assumption that variations in a country's volume of imports are largely accounted for by changes in two variables: (1) the level of import prices (often expressed as a ratio of the domestic price level) and (2) the country's level of income. To isolate the effect of changes in the import price level on the volume of imports, the level of income (usually corrected for changes in the domestic price level) is "held constant" by the method of partial correlation. When the effects of income changes are thus statistically removed, it is often found that the demand for imports appears to be surprisingly inelastic with respect to price.

The validity of this approach to the determination of import price elasticity will not here be called into question. The writer has himself engaged in extended investigations of the type just described, and is in general agreement with the conclusion that when full allowance is made for the effect of income changes, the volume of imports often clearly appears to be notably (though not completely) insensitive to changes in the import price level. But this conclusion has often been incorrectly applied to the analysis of exchange-rate adjustments, with the result that much of the pessimism relating to the effectiveness of such measures is without foundation.

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<sup>1/</sup> See, for example, J. Hans Adler, "United States Import Demand during the Interwar Period," American Economic Review, June 1945; Tse-Chung Chang, "The British Demand for Imports in the Interwar Period," Economic Journal, June 1946; and Randall Hinshaw, "American Prosperity and the British Balance-of-Payments Problem," Review of Economic Statistics, February 1945.

The main point which will be made here is that much current discussion of the role of price elasticity in exchange-rate adjustments completely ignores the changes in real income (and consequently the shifts in import demand schedules) which normally accompany such adjustments.<sup>1/</sup> These changes in income levels are of primary importance, and only when they are prevented by inappropriate monetary, fiscal, or wage policies are adjustments in exchange rates likely to be ineffective in restoring international equilibrium.

Let us consider the case of exchange depreciation. Most of the interwar literature relating to depreciation is not particularly relevant to present problems, since it was chiefly concerned with the problem of depression and unemployment. In such studies, depreciation was evaluated primarily as a method either of increasing employment (and thereby real income) in the depreciating country or of preventing a further fall in employment and real income. In the present context, however, we are interested in depreciation, not as a method of dealing with unemployment or depression, but as a means of restoring external balance for countries which, in most cases, are characterized by approximately full employment. The analysis under these conditions differs radically from the analysis applicable to conditions of depression.

Let us now examine the situation of a hypothetical European country in which the "legitimate" demand for foreign means of payment at the existing exchange rate is greater than the currently forthcoming supply (including assistance from abroad). As a first step, let us consider the case of a "free economy"—that is to say, an economy in which production, consumption, and foreign trade are guided only by price considerations. Under these conditions, the external disequilibrium takes the form of a persistent loss of reserves of gold and foreign exchange.

We shall now suppose that the country resorts to the orthodox remedy of exchange depreciation.<sup>2/</sup> Assuming full employment, the immediate effect of depreciation in the depreciating country is a fall in real income, owing to the rise in the domestic prices of internationally traded goods (both imports and exports). In the absence of a commensurate rise in the level of money income, the result to be expected is a reduction not only in the quantities of goods imported but also in the domestic purchases of exportable goods (the domestic buyers, in effect, leaving an increased portion of the domestic output to foreign buyers). That is to say, under present assumptions, depreciation

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<sup>1/</sup> Unless external balance is already attained by direct means. This situation is examined in the latter part of the paper.

<sup>2/</sup> The ensuing analysis is heavily indebted to the writings of Frank D. Graham—particularly to Professor Graham's important new treatise, The Theory of International Values (1949).

results in a fall in the physical volume of imports and a rise in the physical volume of exports.<sup>1/</sup> Unless the depreciating country accounts for a substantial part of the world demand for, and supply of, internationally traded goods, its act of depreciation is not likely to have an appreciable effect on the prices of such goods in foreign currency.<sup>2/</sup> In such circumstances, depreciation clearly also involves a fall in the external value of imports and a rise in the external value of exports. Thus if depreciation under these conditions is carried far enough, the external deficit will disappear.

How far depreciation will have to be pushed to restore external balance will depend on several factors, the most important of which are (1) the degree to which real income must be contracted--i.e., the magnitude of the external deficit in relation to the country's total income, (2) the degree to which the level of money income is permitted to rise as a consequence of depreciation, and (3) the degree to which "domestic goods" (goods which, because of transportation costs, do not enter into international trade) are substitutable for internationally traded goods. If the external deficit is small in relation to total income; if the level of money income is not permitted to rise substantially; and if domestic goods are readily substitutable for internationally traded goods, the required degree of depreciation may be very moderate.

The fall in real income which, under present assumptions, results from depreciation is a necessary part of the process of adjustment for a country

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<sup>1/</sup> It should be noted that the increase in the volume of exports is the result of a substitution of foreign for domestic demand, and thus is an immediate effect of depreciation even though the short-run supply of output throughout industry may be highly inelastic.

<sup>2/</sup> In so far as depreciation has any effect on the external prices of the depreciating country's exports and imports, it is in the same direction for both--i.e., downward. As the area in which depreciation is carried out enlarges, the effect of depreciation on the external prices of internationally traded goods becomes greater and greater, while the effect on the internal prices of the same goods becomes less and less. When the area of depreciation includes all but, say, one small country, the effect of depreciation on the internal prices of internationally traded goods is negligible, while the effect on the external prices of such goods is in almost direct proportion to the depreciation. This latter situation is analytically equivalent to the case in which exchange appreciation is resorted to by one small country which wishes to correct an external disequilibrium in the form of a balance-of-payments surplus. This is the exact reverse of the case considered in the preceding pages and, by reversing all the signs, the situation can be analyzed in exactly the same way.

which is living beyond its means.<sup>1/</sup> Consequently, for depreciation to be effective, it is necessary to prevent the level of money income from rising commensurately with the rise in the price level. Actually, if wage rates can be kept from rising, there would appear to be no clear-cut reason to assume that there will necessarily be a rise in a country's level of money income as a result of depreciation, since the increased profits in industries producing internationally traded goods would be offset by reduced profits in purely domestic industries.<sup>2/</sup> Workers released by the latter industries presumably could be absorbed by the former industries without a significant rise in the average level of wage rates.

It should be emphasized that, because of its effect on the level of real income, depreciation under present assumptions involves a shift to the left of the depreciating country's "demand curve" for imports (the curve being defined as a schedule of the volume of imports demanded at various levels of import prices, on the assumption that real income is held constant). Since depreciation involves a reduction in the level of real income (and therefore a shift in the demand curve for imports), it becomes clear that the price elasticity of demand does not have the primary significance so often assigned to it. That is to say, it is perfectly possible for a country's over-all demand for imports, at a given real income, to be inelastic with respect to price (expressed in domestic currency) and, at the same time, for depreciation to have the effect of reducing the domestic value of imports, because of its effect on the country's level of real income.<sup>3/</sup>

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<sup>1/</sup> It should be noted that the income effect is not confined to the depreciating country. The reduction in real income there is offset by a corresponding increase in real income abroad; and this increase in real income, by a process the reverse of that described above, also assists in the restoration of equilibrium. Under present assumptions, the increase in real income accruing to the rest of the world would be equal to the reduction in real income in the depreciating country.

<sup>2/</sup> Industries producing internationally traded goods would tend to make greater profits because of wider profit margins resulting from the rise in selling prices. Industries producing domestic goods would tend to make smaller profits because of narrower profit margins resulting from the rise in raw-material costs (to the extent that the raw materials were internationally traded goods).

<sup>3/</sup> Regardless of what happens to the value of imports expressed in domestic currency, depreciation under present assumptions is certain to reduce the value of imports expressed in foreign currency. By expressing propositions in terms of foreign currency, many pitfalls in the analysis of depreciation can be avoided from the outset.

It should be noted that the fall in real income with which we are here concerned is not a fall via the route of unemployment. Moreover, a deterioration in the "terms of trade" (in the conventional sense of an unfavorable change in the relationship between import and export prices) is not a necessary part of the process.<sup>1/</sup> All that is required is an altered relationship in the depreciating country between the price level of internationally traded goods and the level of money income.

In the case we have been considering, the external disequilibrium, prior to depreciation, takes the form of a persistent loss of gold and foreign exchange. This loss of reserves is a measure of the degree to which a country is living beyond its current resources--i.e., beyond the sum of its earnings from the sale of goods and services to foreign countries plus its proceeds from capital imports and gifts (including emergency assistance from abroad). Under these conditions, depreciation restores balance by inducing a contraction in real income.

At the present time, the foregoing situation is not the most typical variety of international disequilibrium. More characteristic is the situation in which external balance is achieved and maintained by direct means which conceal the disequilibrium.<sup>2/</sup> The simplest case of this type is where the currently forthcoming supply of external means of payment is rationed among the prospective buyers by means of exchange control. In this case, the excessive demand for foreign exchange at the current exchange rate is simply prevented from operating in the market. In the absence of such direct action, the result would be either (1) a persistent loss of reserves at the existing exchange rate (the situation we have just considered) or (2) a bidding up of the prices of foreign currencies--i.e., depreciation. By means of exchange rationing, neither process is permitted to occur.

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<sup>1/</sup> Indeed, there is no a priori reason to assume that such a deterioration will necessarily occur. The immediate effect of depreciation in the depreciating country is to raise the domestic prices of internationally traded goods as a group, and, in the absence of special assumptions, there is no reason to maintain that the rise in import prices will be any greater than the rise in export prices. It is true that, after depreciation, a larger volume of exports will be traded for a smaller volume of imports, and the concomitant loss of income cannot be avoided if it is desired to close the balance-of-payments gap. But, as Professor Graham has ably demonstrated, the "barter ratios" at which individual commodities exchange for one another are not likely to be significantly affected by changes in exchange rates. In other words, a "secondary burden" in the terminology of the Keynes-Ohlin discussion is not a necessary, or even probable, consequence of depreciation.

<sup>2/</sup> Also common is the intermediate situation, perhaps best exemplified by the United Kingdom, in which direct controls have coexisted with a planned or unplanned loss of reserves at the existing exchange rate.

It is important to note that in this situation, real income is arbitrarily held down to the level which is necessary to achieve external balance. Consequently, exchange depreciation in these circumstances would not necessarily lead to a reduction in real income, but would simply substitute price movements for direct methods of attaining balance. Indeed, depreciation under these conditions would be expected to result in a qualitative improvement in real income by making possible a pattern of consumption more in accordance with consumer choice. And to the extent that a general return to realistic exchange rates were to make possible a more rational pattern of trade, the quantity of real income would also be expected gradually to increase.

It should be emphasized that the case for realistic exchange rates is not merely that such rates would result in balanced international accounts. International balance--as opposed to equilibrium--can be achieved in any number of ways, most of which would have little to recommend them. Trade can be balanced bilaterally as well as multilaterally; it can also be balanced on a basis of monopolistic exploitation and discrimination. The major argument for realistic exchange rates is not that they restore balance (which may already be achieved by direct means), but that they make possible an environment in which economic planning, whether private or public, can be subjected to the test of comparative cost. In the absence of such a test, it is virtually impossible to make an intelligent evaluation of the national economic programs of the participating European countries. This being so, it would seem clear that the time to return to a valid pattern of exchange rates is before, rather than after, the national plans have been carried through to completion. If the argument in the preceding pages is substantially correct, the economic adjustments which such a policy would entail are of a lower order of magnitude than much recent literature would suggest.

CURRENCY CONVERSION AND REPRESSED INFLATION

J. Herbert Furth

The last decade has produced two related monetary phenomena: repressed inflation and anti-inflationary currency conversion.

Inflation together with attempts at hiding its effects is at least as old as paper money. Only recently, however, has the economic power of the government become strong enough to keep, during a period of monetary overexpansion, prices, wages, and exchange rates in the neighborhood of pre-inflationary levels, at least in large sectors of the economy. For this reason repressed, as distinguished from open, inflation has appeared only since the emergence of comprehensive planning.

In the past, currency conversions frequently were used to make a new start after an open inflation had run its course. A new currency unit was substituted for the old discredited one, either at the same time at which the factors responsible for the monetary overexpansion were eliminated (e.g., Germany, 1923) or some time after actual stabilization had been achieved (e.g., Austria, 1922). This process meant merely a change in name, partly for reasons of expediency so as to avoid handling of large figures, and partly as a psychological means to inspire confidence in the new monetary system. The conversion rate usually was selected so as to make the average purchasing power of the new unit similar to that of the old one before the start of the inflation. No harm was done, however, if the similarity was not very close: the introduction of the new currency did not change the price, wage, and exchange rate situation as it existed at the moment when the inflationary process was brought to an end. While the inflation and its stoppage had very far-reaching economic effects, the change in the name of the currency unit had virtually none.

This type of currency conversion has not completely disappeared. In cases in which a hyper-inflation has destroyed completely the use of an old currency unit, it is still applied rather frequently, both by countries with individualistic economic systems (Greece, 1944), and (with relatively minor adaptations) in countries under totalitarian control (Hungary, 1946; Rumania, 1947). Hyper-inflation makes it impossible to prevent prices, wages, and exchange rates from rising, despite all attempts of the authorities at imposing controls. In these cases, "classical" open inflation is thus followed by "classical" currency conversion.

The new type of currency conversion was applied for the first time in Belgium (October 1944) under the leadership of the Minister of Finance, Mr. Camille Gutt; it has since become prevalent in Western and Central Europe (Austria, 1945 and 1947; Germany, 1948; Netherlands, 1945), and has also been used in Eastern Europe (Czechoslovakia, 1945; Russia, 1947; Yugoslavia, 1945). The distinctive feature of this "modern" currency conversion is the attempt of the monetary authorities at adjusting the supply of new money approximately to the prevailing legal level of prices, wages, and exchange rates. While holdings

of money and non-recurring monetary claims are severely reduced, prices and wages, and usually also other types of recurring monetary payments, remain untouched. This approach makes sense only if prices and wages have not changed in approximately the same proportion as the supply of money; i.e., in the case of repressed inflation.

Under "modern" as well as under "classical" inflation and currency conversion, the holders of money or non-recurring monetary claims (deposits, credits, bonds) are deprived of a large part of their prewar purchasing power; this consequence of monetary overexpansion can be remedied only by means of separate actions ("equalization of burden"), which may or may not be taken by the government in either case. The two types differ, however, in their effects: (1) upon the relative position of holders of personal or real property and of recipients of recurring money payments (salaried employees, wage earners, recipients of rents or pensions); and (2) upon the tendency toward financial equilibrium after the end of monetary overexpansion.

(1) In the case of "classical" open inflation, prices usually rise faster than wages, wages faster than salaries, and salaries faster than other types of recurring payments. At the end of the process, the price-wage relations usually are changed in such a way as to favor the holders of personal or real property (businessmen, farmers, shareholders) while wage earners at best maintain their pre-inflationary economic position, and salaried employees as well as other recipients of recurring payments suffer badly. Under a system of repressed inflation, wages and salaries are likely to be permitted to rise about as much as legal prices; moreover, "windfall profits", resulting mainly from black-market operations, can only with difficulty be converted into commodities. The earners of these profits, especially farmers, are likely to hold more money and fewer goods than in the case of open inflation, and are therefore liable to benefit less by the "modern" than by the "classical" type of monetary overexpansion.

Finally, "modern" conversion permits variations in the conversion factors for economic, social, and political reasons, like the stipulation of preferential rates for small holdings. These variations usually favor low income groups. As a net result, wage earners, salaried employees, and other recipients of recurring incomes tend to fare better, and property holders to fare worse, in the "modern" than in the "classical" case.

(2) Open as well as repressed inflation is caused by the creation of additional money income--in practice usually as the consequence of deficit spending by the government for defraying the costs of war or of post-war transition--which is not accompanied by a corresponding increase in the output of consumers' goods and services (making allowance for additional voluntary savings). Under conditions of open inflation, this rise in money incomes pushes prices up, and the increase in the price level results, with some lags and leakages, in a further rise in money incomes. When the original source of additional money dries up, the process peters out without necessarily leading to a further

significant readjustment in prices and wages. There may be more danger of the stoppage producing a deflationary reaction than of continuing inflationary pressure. Currency conversion in this case can be superimposed without difficulty upon a relatively stable economy.

In the case of repressed inflation, however, the additional money income does not result in equilibrating increases in prices and a secondary increase in incomes, but--apart from illegal transactions--assumes the form of increased idle balances, either in cash or government securities. After the source of the additional money income has dried up, the tendency to convert these additional balances into goods and the resulting pressure upon prices and wages continue with hardly any diminution in force. Under these conditions it is the task of currency conversion to "mop up" the idle balances (sometimes called "monetary overhang") and in this way to restore equilibrium between the supply of money and the existing price and wage level. The choice of the conversion factor, of little if any significance in the "classical" case, becomes very important under the "modern" type. If the conversion leaves idle balances larger than those which consumers want to hold voluntarily, the inflationary pressure is lessened but not removed. If the conversion factor is so high that it does not leave sufficient balances, a deflationary movement may be initiated.

It is almost impossible to forecast exactly the necessary amount of balances and therefore the correct conversion factor. In the case of the Belgian conversion of 1944, and probably in many of the later cases, a crude application of the quantity theory was intended: the prewar relation between money supply and level of production was to be restored. Such an approach can result at best in a vague approximation. There is no reason to assume that the propensities to consume, to invest, and to save (or the "velocity of circulation" in "classical" terminology) will be the same at the start and at the end of the inflation. It is possible that the experiences during inflation weaken the will to save; however, it is also possible that the loss of previous money savings strengthens the will to save again. Consumption at the end may thus form either a larger or a smaller proportion of total income than before. The restoration of prewar proportions between money supply and production would produce inflationary tendencies in the first case, and have deflationary consequences in the second.

In practice it seems that a post-inflationary period usually witnesses a propensity to save lower than normal. This may be due to the usual timing of currency conversion rather than to the procedure in itself: at the end of a war or post-war transition period, there is a large pent-up demand for consumers' goods and services that had been unavailable for many years. Moreover, the psychological shock of the loss of money savings seems to be more important than the incentive to build up depleted savings. For these reasons, the monetary authorities usually tend to underestimate the necessary cut in the supply of money so that after the conversion inflationary pressures continue.

The psychological shock at least could be softened by a preferential treatment of savings accounts in the course of the currency conversion; paradoxically, however, only the Soviet authorities seem to have understood the importance of the shock, and have granted preferential treatment to savings accounts, both in Russia and in Eastern Germany.

In those cases in which the cut in monetary circulation is so radical as to leave no room for an excess of monetary demand over the available supply of goods and services at prevailing prices, the fear of deflationary consequences usually leads to laxity in currency and credit creation so that after a short time new inflationary pressures appear. The reliance upon the anti-inflationary effect of the reduction in the volume of money may prevent the authorities from paying sufficient attention to changes in the flow of current income. Actually, the presence or absence of inflationary pressures is caused more by the relation between money incomes and the output of goods and services than by the ratio between stocks of money and goods. If money incomes are permitted to rise, the small size of the money stocks will avert inflationary consequences only if that small size induces the recipients of money incomes to increase their balances. If the recipients of money incomes decide to spend virtually their entire income upon consumption either because of the importance of pent-up demand or because of a weakened will to save, inflationary consequences will make themselves felt unless the production of consumers' goods can be stepped up as rapidly as the rise in money incomes. Such an increase in output will be impossible if inflexibilities of supply persist or if large-scale investment is needed; both these conditions necessarily obtain whenever currency conversion follows upon a period of war or post-war transition.

The continuation of inflationary tendencies after currency conversion must lead to one of two consequences: either the controls applied during the period of repressed inflation are continued, thus making impossible the necessary readjustment of the economic system and lessening confidence in the new currency; or the controls are removed and the resulting wave of readjustments--having often to make up for distortions accumulated in many years--adds to the inflationary tendencies due to monetary causes. For in those cases in which a downward readjustment is about to take place, the pressure of interested groups frequently induces the government to counteract the deflation, leaving only upward readjustments undisturbed; the total movement thus acquires an inflationary bias.

As the result of these factors, the post-conversion supply of money has shown a tendency to rise sharply in most countries, often virtually up to pre-conversion levels. In these cases the main advantage of the conversion seems to have been the translation of a repressed inflation of considerable magnitude into a milder open inflation. Such a translation in itself is of great value; however, it will lead to actual stabilization only if it is supplemented by other measures adjusting size and use of money incomes.

NEW INDEX OF INDUSTRIAL PRODUCTION IN ITALY

Arthur L. Broida

Italian industrial output since the war has recovered substantially more than generally believed,<sup>1/</sup> and in several months of 1947 and 1948 equalled or exceeded the rate of the prewar year 1938. This is indicated by the newly revised, official monthly index of industrial production, compiled by the Central Institute of Statistics of the Italian government. Although the new index has a number of shortcomings, it appears to be a more accurate measure than either the former official postwar index or another, the "Confindustria" index, published by the Italian Confederation of Industry, both of which indicate much less postwar recovery.

The announcement of the revision of the official index was made in the December 1948 issue of Notiziario Istat, a publication of the Institute. The published index numbers, which are for the period since January 1947, are expressed as percentages of the monthly average in 1947. Index numbers expressed relative to 1938 have also been calculated and made available by the Institute, and these are the ones shown on the accompanying chart, together with the unrevised index on the same basis, because the revised figures show a very different level relative to the prewar period. Also shown are two other indexes--a modified version of the new official index developed by the U. S. Economic Cooperation Administration and the Confindustria index, both of which will be discussed later.

The new "Istat" index is still provisional, and further substantial revisions are to be made early this year. In its present form it indicates that after a major setback in the winter of 1947-48 industrial output rose rather steadily throughout 1948, and in the autumn reattained the prewar levels that had been reached the summer before. Changes in the individual areas of activity were rather diverse, with production of electric power, fuels, and the products of coal and oil refining substantially above prewar, while output of most manufactured products and other mineral products was not yet at that level.

The structure of the new index<sup>2/</sup>

As briefly described in Notiziario Istat, the major purpose of the revision was to make the method of calculation of the index conform with that used in most other countries and with the recommendations of the Statistical Commission of the United Nations Economic and Social Council.<sup>3/</sup> Accordingly,

<sup>1/</sup> See this Review, December 14, 1948, pp. 4-5.

<sup>2/</sup> Information on the structure of the index has been obtained chiefly from Notiziario Istat and Bollettino Mensile di Statistica.

<sup>3/</sup> The U. N. Commission actually has not yet made recommendations for industrial production indexes but has published a summary of the recommendations made in 1939 by a League of Nations Committee, as a starting point for re-considering the subject. Evidently it is this U. N. document to which the Institute has reference.

the geometric mean, which had formerly been used for averaging the weighted quantity relatives, was abandoned in favor of the arithmetic mean, and the classification system proposed in the U. N. document was adopted to the extent possible. The weights are proportional to estimates of value-added in 1938, based on data from the last industrial census, which was taken over the period 1937-40.

The new index is designed to cover manufacturing, mining, and the production of electricity and gas. Construction, the fourth category listed in the U. N. document for inclusion in "industrial" production, is omitted. Several manufacturing industry groups are not directly represented and two of these are among the most important in the Italian economy: manufactured foods, including beverages and tobacco, and the "mechanical" industries--electrical and non-electrical machinery and transportation equipment. Measures for the apparel, hides and leather and printing groups are also not included. Data are now being collected for manufactured foods and certain of the mechanical industries, and it is planned to incorporate them soon. In the present revision, the number of groups within the three broad categories has been increased to 14 by the addition of series for rubber products and coal and oil refining products in manufacturing, and for gas products in electricity and gas. In addition, index numbers are published for some 75 component series.

Most of the underlying statistics are collected by the Institute itself from a fixed number of the more important firms in each industry. They are, therefore, not comprehensive, but are believed to include a substantial percentage of output in each industry. Data compiled by other government agencies and trade associations also are used. Presumably most of the series are based on statistics for physical quantities of output, although this is not stated. No adjustments appear to be made for the varying number of work-days per month or for seasonal variation.

The weights in the various groups in the new index and the number of published series in each group are shown in the table below.

	<u>Group weights</u>	<u>Number of published series</u>
Minerals and quarry products	<u>6.7</u>	<u>17</u>
Solid fuels	.9	5
Metallic minerals	3.8	6
Hydrocarbon gas	.1	1
Other products	1.9	5
Manufactures	<u>78.3</u>	<u>52</u>
Textiles	30.1	14
Lumber	5.7	2
Paper and paperboard	3.6	4
Rubber	2.5	4
Chemicals	15.7	10
Products of petroleum and coal refining	2.4	5
Fabrication of non-metallic minerals	5.9	6
Metallurgy	12.4	7
Electricity and gas	<u>15.0</u>	<u>6</u>
Electricity	13.4	2
Gas products	1.6	4
Total	100.0	75

#### Evaluation of the new index

The value of using a standardized classification system is clear, and the inclusion of direct measures for additional industry groups should result in a better approximation of changes in output. The omission of the very important food and mechanical industry groups, however, is a serious deficiency which may produce substantial errors in the index as an estimate of industrial activity, both as to level and month-to-month movements. The Institute tentatively anticipates that the inclusion of manufactured food products will raise the index but that the inclusion of those mechanical industries for which data will be available will have little effect.

Output series for a number of products in the food and mechanical industry groups, which are not yet used in the index, have been carried for some time in Notiziario Istat. These include motor vehicles, tobacco products, alcoholic beverages, and several other food and metal products. Evidently they have not been used because in total they are not considered adequate to represent the omitted groups. But these data could have been used to represent at least those parts of the excluded groups to which they relate, and the resulting increase in direct coverage would probably have improved the accuracy of

the index to some extent. To insist that data be representative of whole groups before they are used at all means sacrificing possible improvement to unnecessarily formal requirements.

The extent to which other types of data are used where representative physical quantity statistics are not available is not known, but it is probable, since certain groups are omitted at present, that the Institute is not fully exploiting the available information. For instance, statistics on electric power consumption by industry group are published by the Società Edison and might be used to represent some parts of the omitted areas, where power consumption is likely to move closely with output. Data on other variables closely related to output may be available, such as consumption of important raw materials, machine-hours of activity, and so forth.

Failing devices such as these, the accuracy of the index probably would have been increased if the weights for the omitted groups had been specifically assigned to certain other groups, or combinations of them, where output is most likely to move similarly. "Omitting" one or more groups included in the area, an index is taken to represent in effect amounts to implicitly assuming that output in the omitted groups moves with the total output of other groups. Better assumptions often can be made. For instance, output of the mechanical industries, which are metal consumers, would probably move more closely with output of the metal producing industries than with total industrial production. If so, specifically assigning the weight for the mechanical industries in accordance with this assumption would result in a more accurate index. It is possible, in fact, that such an assumption would result in greater accuracy than that obtained by the inclusion of physical volume series for the mechanical industries, if they are seriously limited in coverage. The Institute might well consider this possibility in the prospective second revision, making such investigations as are feasible to determine what the best assumptions actually are.

The accuracy of the indexes for the individual groups now included might also be increased by developing direct measures, from data on variables related to output, for products now "omitted", or by assigning the weights for specific omitted products to other products in the same group whose output is likely to move similarly. Finally, the reliance on data from a fixed sample of firms is likely to lead to error, for total output changes with the entry and exit of firms as well as with changes in the rate of production of existing firms. The importance of this error would tend to grow over time as the composition of the industrial population changes, and is probably of greater importance for the 1938-1947 comparisons than for comparisons within the postwar period itself.

The apparent lack of adjustment for differences in number of working days may result in somewhat misleading short-term movements of the index. The decline from January to February 1947 and the low level of February 1948 are

probably due in part to the fewer number of days in this month. The uneven incidence of week-ends and holidays would at least partially explain a number of month-to-month changes in output that otherwise would appear to be economically significant. The same holds for seasonal variation, but adequate adjustment for this factor is obviously impossible because "normal" seasonal variation could not be discovered from data for such a limited, and abnormal, period.

The weights. The last prewar census was taken over the period 1937-40, and the data collected for the various industries do not all relate to the same year. It was, therefore, desirable to use estimates of value-added in a single period, rather than the reported data for weighting purposes, and this was done in the Istat index. The weights shown in the table on page 15 are proportional to estimated value-added in 1938.

It appears, however, that the 1938 weights properly used for calculating the index from relatives with 1938 taken as 100 are also used--improperly--in calculating the published index from relatives based on 1947 as 100. This results in a bias in the published index because weights proportional to actual value-added may be used only for an index in which the quantity base period for the various series is the same as the period to which the value-added data relate. If another period is used as the quantity base for the various series, the value-added data must be adjusted for the change in the physical quantity of output that occurred between the value-added period and the quantity base period. Otherwise, a bias results from what has been called "uncommon q's".<sup>1/</sup>

Rough calculations indicate that the bias in the published Istat index is not of any consequence as yet, but it may become important in later periods. The index in the chart, in which 1938 is the base for the relatives, is not subject to this bias.

The method of averaging. The change made in the method of calculating the Italian index, from the use of the weighted geometric to the weighted arithmetic mean, is a real improvement. The specific grounds on which the geometric mean originally was employed are not known, but presumably are similar to those on which its use has been advocated elsewhere. Indexes calculated by taking the geometric mean of quantity (or price) ratios meet the "time-reversal" test and have certain other internal consistencies, but any presumed advantage on this score over the arithmetic mean applies only to the unweighted mean, for the weighted arithmetic mean has the same consistencies. The geometric mean is occasionally advocated on the ground that it is the best measure of central tendency of a distribution skewed in such a manner that the logarithms of the observations are normally distributed. This type of distribution would sometimes be characteristic of ratios because declines are constrained to the range 0-100, but increases have no upper limit. The geometric mean might, therefore,

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<sup>1/</sup> The problem of "uncommon q's" is discussed in more detail in the appendix.

be preferred for calculating an index if a measure of central tendency was desired and the distribution was of this form. Such a measure perhaps would be useful for inter-industry analyses of rates of change in output. For most purposes, however, the most useful measure of production change is not one of the central tendency of the changes in various industries, but rather of the change in aggregate output, for comparison with other aggregates such as population, employment, and income. The weighted arithmetic mean is mathematically equivalent to and is most easily conceived of as a ratio of the aggregate output in each period to that of the base period.<sup>1/</sup>

The differences in the action of the two averages can readily be seen by considering a case in which output of one industry doubles and that of another (originally) equally important industry drops to half. In an index calculated with the geometric mean, these would offset each other, and the index would indicate no change, on the average. The weighted arithmetic mean, as a measure of the change in aggregate output, would indicate an increase, for the addition to aggregate output resulting from the doubling--say, from 100 to 200--is greater than the subtraction caused by the halving--from 100 to 50. It might be noted incidentally that the geometric mean always lies below the arithmetic except in the special case where all changes in quantity are identical.

#### The ECA modifications of the index

In its Country Study on Italy<sup>2/</sup> the ECA uses a modified version of the Istat index which is limited to mining and those manufacturing areas "for which there are sector indexes as well as raw data compiled by the Central Institute of Statistics". Electricity and gas are eliminated and so also are the components for rubber products and petroleum and coal products. The ECA version of the index is lower relative to prewar than the revised Istat throughout the period covered, and for the most part is also slightly below the unrevised Istat.

According to the Country Study, the component for electricity and gas is excluded because "with its present limited coverage the general index is heavily weighted by electric power, which, with a weight of 13.4, ranks as the third major single industry covered by the index, following textiles and chemicals. It is questionable whether in Italy electric power should be considered a component of the industrial index because the output of electric power is growing rapidly in relation to other industrial sectors. Moreover, in the Italian prewar index its weight was only 3.5 per cent of the total. The inclusion of electric power as one of the major components with a weight of 13.4 would therefore appear to give the over-all index a significant upward bias."

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<sup>1/</sup> See Appendix, first paragraph.

<sup>2/</sup> Scheduled for publication this month. The quotations given here were taken from galley proofs.

Surely, an economic activity should not be excluded simply on the grounds that it has been growing at a pace more rapid than the average. On the other hand, too high a weight for the rapidly growing power industry would undoubtedly give the Istat index an upward bias. Is the weight too high? The weights of the prewar index, which was compiled by the Ministry of Corporations, were based on both value-added and employment. How they were calculated from these data is not known at the present writing, but weights based on value-added alone, as in the Istat index, would probably be preferred in any case. As a highly mechanical activity, the production of electric power would probably rank lower in terms of employment than in terms of value added, and to the extent that relative employment determined the weight for power in the prewar index, that weight would not be a good standard for assessing the weight for power in the Istat index.

Moreover, the weights in the prewar index were drawn from the year 1927, whereas the Istat weights are from the year 1938. The value-added in the various industries would differ in these two years both because of changes in value-added per unit of output and in the physical quantities of output. Information on unit valuations is not readily available; but the output of electricity was 65 per cent higher in 1938 than in 1928, while total industrial output was only 8 per cent higher, according to the prewar index. This factor alone would indicate a 1938 weight for power one-half greater than that of 1928, and, presumably, 1927 also.

Finally, as noted in the ECA study, the prewar index had broader coverage. It included construction, and had as one component the mechanical industries, with part of the total weight specifically assigned to it. All of the components of the Istat index, including power, would tend to have higher weights (other things being equal) than do the same components in the prewar index, both because the economic area to which the Istat index relates is smaller (construction is not covered), and because within the area covered the included components, taken together, are implicitly assumed to represent the mechanical industries as well as other omitted groups, and therefore have additional weight assigned to them. This probably accounts for a substantial part of the difference between the weights for electric power in the two indexes which is not explained by the other factors listed. It may well be that output in the omitted areas would be better represented by output in certain included areas other than power, rather than by the total index, and that no part of their weight should be given to power. One possible modification, then, would be a reassignment of the weights for the omitted areas to those components which appear to represent them best, and if these did not include electric power, its weight would be accordingly reduced. This would be preferable to omitting power entirely, assuming that power is included in the field of interest. Ordinarily the problems caused by the lack of some data cannot be met adequately by discarding other data.

It may be that for ECA's purposes an index limited to manufacturing and mining is wanted. If this is so, then the inclusion of power, no matter what its weight, will give index numbers different from those desired.

The Confindustria index

This index, compiled by the Italian Confederation of Industry, was the first on the postwar scene and for some time provided the only information available on the course of Italian production. It has appeared in the Confederation's publication Notiziario since November 1946. The index covers minerals, electric power, textiles, metallurgy, construction materials, and chemicals, and is expressed relative to the year 1939. For purposes of comparison in the chart, it has been converted to a 1938 base on the basis of the change in output between 1938 and 1939 shown by the prewar index.<sup>1/</sup>

The data used for the Confindustria index are not specified, but evidently are obtained directly from the more important producers by regional offices of the Confederation. The group indexes are arithmetic averages of relatives for the basic series, weighted by value of product. The combined index, however, is a geometric mean of the weighted group indexes, and weights for the latter are "proportional to employment and installed horsepower" as shown in the last industrial census before the war.

In a note accompanying the original publication of the index, the group indexes for power, minerals, textiles, and metallurgy were characterized as adequate, but those for chemicals and construction materials as less so. The greatest deficiency was said to be the lack of representation for the mechanical, processed foods, and construction industries. The usefulness of the Confindustria index is further reduced by the mixed type of averaging used, and by the weighting standard adopted. The group weights cannot at once be proportional to both employment and installed horsepower, and presumably some sort of average of the two sets of data is used. In any case, there is little merit in such weights for a production index, except in so far as they might be considered estimates of relative value-added, or some other measure of output, net or gross. In a sense, the weights of an index can be said to define the variable measured, and their sum is the measure of the variable, set equal to 100, for the base period. An index with employment weights may be considered to be a measure of employment, if the series reflect reasonably well the current changes in employment--as series based on physical quantities of output would do, within the limits of changes in output per employee. Similarly an index with weights based on installed horsepower might be used to reflect changes in horsepower, perhaps with less accuracy. (Under most circumstances, better estimates of the changes in both variables could be made by other means.) But neither of these measures could accurately be

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<sup>1/</sup> A somewhat different Confindustria index on a 1938 base covering the first ten months of 1948 was substituted for the index described here in the January 1949 issue of Notiziario. This may also be discontinued after the index numbers for December 1948 are published.

called a measure of production because the weights are not production weights. A measure with weights based on both employment and horsepower is a conceptual anomaly.

#### Comparative movements of the four indexes

The revision of the Istat index raised its level substantially for the whole period since January 1947, and by a generally increasing amount over the period. The difference is primarily due to the change in method of averaging, but the inclusion of measures for oil and coal refining, rubber, and gas products has also contributed to the increase. Of the four indexes only the revised Istat indicates that production since the war has occasionally equaled or exceeded 1938 levels. Later revisions evidently will raise it further.

The ECA version of the index lies considerably below the revised index. It follows the unrevised Istat rather closely, as the effects of their two differences in compilation, relating to coverage and method of averaging, almost offset each other.

In most months all three of these indexes show the same direction of change, as might be expected.

With the other indexes the Confindustria indicates a substantial rise in output in the first half of 1947, and a decline in the winter of 1947-48. It shows less recovery in the spring of 1948, however, and a renewed decline in the summer, when the other indexes indicate a gradual rise in output.

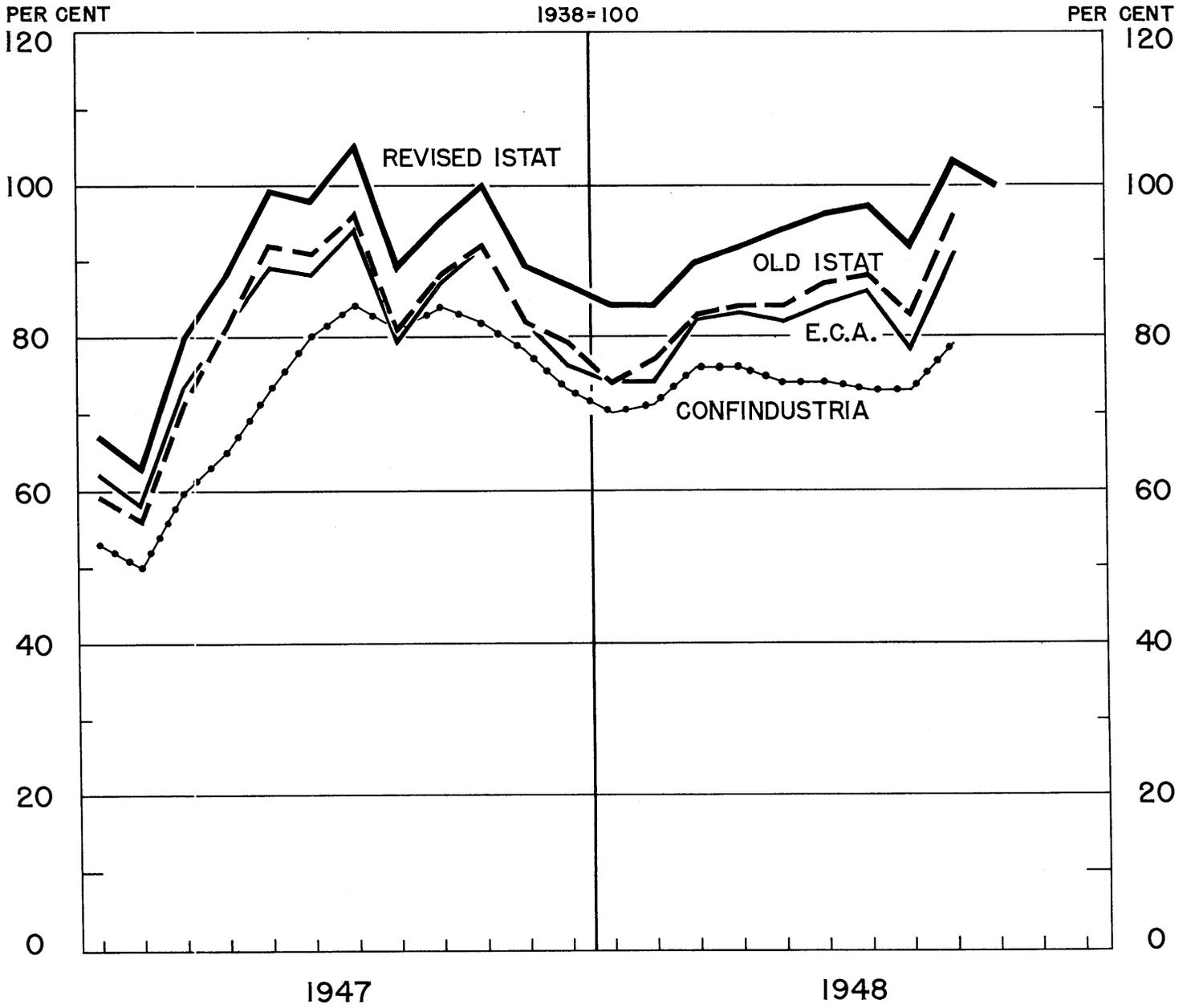
#### Conclusions

The present official version of the Istat index represents the best measure available now of Italian industrial activity, if "industrial" is defined to include electricity and gas. The accuracy of the index has been improved by the addition of certain series in the recent revision, and its usefulness has been increased by the change in the method of averaging. The prospective second revision will improve the index further.

The Istat index still has a number of shortcomings which limit its reliability both as to level and month-to-month changes. Full use apparently is not being made of the information available for estimating output, and some bias, as yet unimportant, is present in the published index because of an error in the method of calculating the weights for that index. Error is also introduced by the use of data for a fixed sample of firms, and this error would tend to grow over time. The significance of some short-term movements might be made clearer by adjusting for differences in the number of working days per month, and, when feasible, for seasonal variation.

The desirability of eliminating the components for electricity and gas, as done by the ECA, depends primarily on what the index is to be taken to represent and what comparisons are to be made with indexes of industrial production for other countries and of other economic measures for Italy and other countries. For some purposes such a modification appears proper, for others not.

# INDEXES OF INDUSTRIAL PRODUCTION IN ITALY



Appendix

THE BIAS RESULTING FROM UNCOMMON Q'S

The formula for the Istat index, or any production index calculated as a weighted arithmetic average of quantity relatives, using 1938 as a base for the relatives and weights proportional to value-added in 1938, is:

$$I = \sum \left( \frac{q_x}{q_{38}} \cdot \frac{q_{38}p_{38}}{\sum q_{38}p_{38}} \right)$$

where the q's are the quantities of output, the p's are "values added per unit" and the subscripts denote the time period, with x being any period for which the index is calculated. (If x is a month rather than a year, the other entries would be monthly averages.) The first term in the parenthesis is the relative for any product (or industry) and the second is the corresponding weight. The q's in the denominator of the relative and in the numerator of the weight both relate to the year 1938, and therefore cancel; the formula reduces to a ratio of aggregate output in year x to that in 1938 with each product evaluated in both periods at the value added per unit in 1938:

$$I = \frac{\sum q_x p_{38}}{\sum q_{38} p_{38}}$$

The formula for the published Istat index, which is calculated from relatives on a 1947 base, using 1938 values added for weights, is:

$$I = \sum \left( \frac{q_x}{q_{47}} \cdot \frac{q_{38}p_{38}}{\sum q_{38}p_{38}} \right)$$

Here the two q terms do not cancel, since they relate to different periods (and are therefore "uncommon"). This is equivalent to the following aggregative formula:

$$I = \frac{\sum q_x p_{38} \cdot \frac{q_{38}}{q_{47}}}{\sum q_{47} p_{38} \cdot \frac{q_{38}}{q_{47}}}$$

It can be seen that this is not simply a ratio of aggregate output in two periods. For each product a term,  $\frac{q_{38}}{q_{47}}$ , is introduced in both the numerator and denominator, which might be considered as a multiplier of the value added per unit for each product,  $p_{38}$ . For all products whose 1938 output exceeded that of 1947, this term is greater than unity and for these products, therefore, the valuations are raised. Products whose output was less in 1938 than in 1947 have decreased valuations. In this new set of valuations some products will be overvalued relative to others, resulting in bias. If the overvalued products increased more in quantity than the average (or decreased less) from 1947 to the period x, the bias would be upward; if they increased less (or decreased more), the bias would be downward.

The proper weights for an index with 1938 valuations, using 1947 as the quantity base for the relatives, have q's relating to 1947, as in the following formula:

$$I = \sum \left( \frac{q_x}{q_{47}} \cdot \frac{q_{47} p_{38}}{\sum q_{47} p_{38}} \right)$$

which reduces to:

$$I = \frac{\sum q_x p_{38}}{\sum q_{47} p_{38}}$$

which is a ratio of aggregate output in period x to that in 1947, at 1938 valuations. The necessary weights can be calculated by dividing the 1938 value-added for each product (the number of units produced times the value-added per unit) by the corresponding 1938 relative on a 1947 base:

$$q_{38} p_{38} \div \frac{q_{38}}{q_{47}} = q_{47} p_{38}$$

and expressing the quotients as proportions of their total:

$$\frac{q_{47} p_{38}}{\sum q_{47} p_{38}}$$

In the first column of the table below are shown the group weights presently used for the Istat indexes on both 1938 and 1947 bases, and in the second column group weights adjusted for the change in output from 1938 to 1947.

The present weights are proper for the index in which 1938 is used as the base for the relatives from which the index is computed, and the adjusted weights would be proper for the published index, in which 1947 is used as the base for the relatives, assuming that it is desired to use 1938 valuations in both cases and setting aside all issues as to coverage and to representation of omitted groups.

	<u>Present group weights</u>	<u>Adjusted group weights</u>
Minerals and quarry products	<u>6.7</u>	<u>6.3</u>
Solid fuels	.9	2.2
Metallic minerals	3.8	2.3
Hydrocarbon gas	.1	.6
Other products	1.9	1.2
Manufactures	<u>78.3</u>	<u>70.8</u>
Textiles	30.1	28.4
Lumber	5.7	4.3
Paper and paperboard	3.6	2.7
Rubber	2.5	2.6
Chemicals	15.7	15.1
Products of petroleum and coal refining	2.4	2.3
Fabrication of non-metallic minerals	5.9	5.4
Metallurgy	12.4	10.0
Electricity and gas	<u>15.0</u>	<u>22.9</u>
Electricity	13.4	20.6
Gas products	1.6	2.3
Total	100.0	100.0

NOTE ON FRENCH EXPORTS

Robert Solomon

A recent article in The Economist <sup>1/</sup> concerning French exports during the first half of 1948 states that, whereas the dollar value of exports diminished by about 15 per cent when compared with the year 1947, the export tonnage increased by 36 per cent. <sup>1/</sup> This is taken as an indication that the real volume of exports, as reflected by tonnage figures, increased considerably; but because of underinvoicing by French exporters, the declared value of exports declined, permitting a flight of capital which "unofficial estimates put at \$500 million". Even aside from the questionable accuracy of the specific figures quoted in the article <sup>2/</sup> several comments may be made about this statement.

1. Tonnage figures as an index of "real" changes in exports are completely misleading in the case of France, as well as many other countries. During 1947, well over half of French exports by weight consisted of iron ore. The value per ton of these exports is, of course, considerably lower than for the rest of French exports. As a result, relatively large changes in the tonnage of exports may be associated with relatively small changes in value. Thus, for example, if iron ore exports during 1947 had been 10 per cent higher than they actually were, the tonnage of total exports would have been almost 6 per cent greater while the franc value of total exports would have been increased by only .2 per cent.

2. The principal reason for the increase in tonnage of French exports from 1947 to 1948 is that, beginning April 1, 1948, exports from the Saar were included in French export statistics, whereas they were not included before that date. In accordance with the three power agreement providing for incorporation of the Saar into France, Saar coal continued to be shipped to Germany, but after April 1 these shipments appeared in French trade statistics together with other French exports. <sup>3/</sup> Mostly as a result of this change in coverage, exports of coal from France increased by almost 2 million tons, at an annual rate, from 1947 to the first half of 1948, and, in fact, this increase was greater than the tonnage increase in total French exports. In other words, if French coal exports

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<sup>1/</sup> "Leaks in the French Economy", December 25, 1948.

<sup>2/</sup> The data used in the article were taken from the Troisieme Rapport Semestriel sur la realisation du plan de modernization et d'equiement (Monnet Plan), p. 115. Unfortunately, The Economist misinterpreted the figures given there: according to the Monnet Plan report the dollar value of exports in constant prices diminished by 15 per cent. The figures in current prices are given in the table. Moreover, the figures given in the Monnet Plan report on the increase in tonnage of exports also seem to be in error according to published trade statistics, which are shown in the table.

<sup>3/</sup> France receives coal from the Ruhr in exchange for a portion of these deliveries of Saar coal to the French Zone of Germany. The agreement provided that deliveries from the Saar to Germany would gradually decline and would cease entirely by April 1, 1949.

during the first half of 1948 had continued at the 1947 rate, total exports by weight would have declined.

3. A somewhat better indication of the comparative changes in volume and value of French exports can be derived by considering all exports excluding iron ore and coal, which during 1947 together accounted for 61 per cent of the tonnage but only 3 per cent of the franc value of total exports. (During the first six months of 1948, they accounted for 65 per cent of the tonnage and 7 per cent of the franc value.) On the basis of French trade statistics, an estimate may be made of the dollar value of coal and iron ore exports. If these are subtracted from total exports (in millions of dollars) and the tonnage of iron ore and coal exports are subtracted from the total weight of exports for the two periods, the results are as follows: no change in tonnage of exports and a decline in dollar value of exports by 12 per cent. In view of the fact that the franc was devalued in January 1948 by over 44 per cent, this relationship is not unreasonable and contrasts markedly with the statement in The Economist.

French Exports to Foreign Countries

	<u>1947</u>	<u>Jan.-June</u> <u>1948 <sup>1/</sup></u>	<u>Jan.-Nov.</u> <u>1948 <sup>1/</sup></u>
Dollar value of exports (\$ million)	1044	954	1066
Tonnage of exports (millions of metric tons)	11.6	13.0	15.1
Dollar value of exports excluding coal and iron ore	1009	886	974
Tonnage of exports excluding coal and iron ore	4.5	4.5	5.2

4. There is little doubt that a sizeable flight of capital has been occurring. The facts cited by The Economist, however, have little bearing on the question. It may be pointed out that the opportunities for transferring capital to the United States by means of underinvoicing are meager, in view of the low level of French exports to this country. Besides, the black market for dollars offers an easily accessible means to Frenchmen who wish to convert their assets into dollars.

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<sup>1/</sup> Annual rate.