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Financial Intermediaries

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FEDERAL DEPOSIT INSURANCE CORPORATION

Financial Intermediaries and Interest Paid by Business Firms to Banks

THE BASIC PROBLEM

PRESENT procedures of national income accounting result in a basically incorrect treatment of banks, financial institutions, and interest.

The Department of Commerce has adopted a working definition of final product as "a purchase that is not resold, and of intermediate product as one that is resold"; and also provides a more technical expression of the difference in the statement that "a final product is a purchase that is not charged to current cost, whereas an intermediate product is one that is so charged." This distinction is illustrated by reference to flour sold to housewives and bakeries respectively.¹ Under this criterion, interest on a bank loan to a business enterprise is clearly a receipt from sale of an intermediate product, while interest on a loan to an individual is a receipt from sale of a final product. But under the Department of Commerce procedure, all interest paid by enterprises to banks is regarded as payment for a final product.

This incorrect treatment of interest on the product side is matched with an error on the income side. The principle that some products are classified as final or intermediate according to who purchases them has a correlative principle on the income side, namely, that payments for services regarded as "income originating" in, or "factor costs" of, or "net value added" by,² an enterprise if the services are purchased from individuals are not so regarded when purchased from another business concern. For example, two firms in the same manufacturing industry decide to recondition a factory. One firm uses carpenters and plasterers already on its payroll or hires them individually for the job: the other firm accepts a bid from a building contractor. In the former case the wage cost is included in the "factor costs" or "net value added"

¹ National Income Supplement, 1954, Survey of Current Business, Department of Commerce, p. 30.

² These three terms are used synonymously by the Department of Commerce (*ibid.*, p. 176).

of the manufacturing concern; in the latter this cost is not so regarded, but appears in the "income originating" in the contracting concern. This principle—which is basic in the consolidation of the accounts of business firms for use in the national income and product accounts is as applicable to rent paid for a building or interest paid on a loan as to payments for labor.

Erroneous handling of interest paid by a business firm to a bank or some other enterprise leads the national income estimators, when dealing with the banking industry, to treat interest received, which constitutes the bulk of their sales receipts, as negative expenses. This is an anomalous and confusing accounting procedure leading to the irrational result that an industry which operates profitably has a net value of output (value added) of less than nothing. This result is recognized by the national income estimators as obviously wrong, and they consequently search for some way of finding an additional product to which they can impute a value for inclusion in their tabulation of final products. They find this in "the services rendered by banks without explicit charge to their customers," and proceed to give these services the sales value which they omitted by putting the figure on the wrong side of the accounts.³ This process is precisely as sensible as it would be to treat the receipts of General Motors Corporation from automobile sales as negative expenses and then to declare that the services provided gratis to customers or prospective customers-such as floral displays in showrooms, entertainment at auto shows, and art in magazine advertisements-have the same value as the receipts from automobile sales. As a matter of fact, the market value of the services of the banking industry, as expressed in its sales receipts, is as clear cut as in any other industry that sells part of its products to business and part to households. Banking, like automobile manufacturing, is a competitive industry; and though local situations have some monopolistic tinges, and the industry is subject to governmentally established maximum prices, these conditions are of no more relative importance than in certain other industries such as the railroads. The statistical problem of separating sales to business concerns from sales to individuals is probably no more difficult than in the case of the railroads.

The Department of Commerce process of imputing a value to certain banking services leads to double counting of a portion of the value of banking services, because the actual market value as expressed in sales receipts is also included, erroneously, in the estimated net value of output of the industries that pay interest to the banks. In principle, the amount of the duplication is the imputed value. How-

³ Ibid., pp. 46-47.

ever, the process by which the imputation is made is so complicated and the basic data used in the computations so scantily published that I cannot express an opinion on the actual size of the duplication.

It can be argued, with some logic, that when this erroneous process is rectified, it may still be appropriate to impute the reciprocal services of banks and their customers when activity service charges levied on small accounts are reduced or omitted on larger balances. The problem arises from the fact that essentially separate types of services are provided by the banks, in part to the same customers. This combination of services has reduced operating costs below what they would be if the services were separately provided. As a result of competitive and other institutional forces, the reduction in costs, or a part of it, has been passed on to some of the customers, just as in the traditional combination of the coal and ice business, either the fuel or the ice customers, especially those who purchased the largest quantities of both coal and ice from the same company, were relieved of all or a portion of the stand-by costs of seasonally idle equipment and labor. In the handling of such joint costs, which are legion, in the national income and product accounts, it is not customary to add imputations of value to the sales receipts of the companies, on the ground-which could be considered logical-that the customers receive valuable services that do not show up in the amounts charged them. The value of output of the industry is derived from its sales receipts, under the actual methods developed in making charges to customers.

To follow any other practice, it is necessary to make a hypothetical and thoroughly unrealistic dissection of the industry furnishing the combined services into its component parts; and to do this would require for most industries a manifold cut. In the particular case of banking—even "pure" commercial banking exclusive of collateral services such as handling trusts and providing safe deposit vaults—there would have to be at least a three-fold dissection to account separately for loan services, clearance or transfer of circulating medium services, and the creation and maintenance of circulating medium.

The whole erroneous process of handling the banking industry stems from an attempt to make use of the old economic concepts of agents of production and of associated factor costs in categorising the business expense and profit items that are selected for inclusion in the income side of the national accounts. The four-fold classification of agents of production used by the Department of Commerce—labor, capital, entrepreneurial ability, and natural resources—is the same (except for terminology and possibly fringe differences in lines of demarcation) as that used by Alfred Marshall in his *Principles of Eco*-

*nomics.*⁴ In Marshall's analysis interest is regarded as the factor cost or element of income corresponding with capital, but such interest is not the amount paid in the market by borrowers. "The Gross interest paid by the borrower," Marshall said, "includes some insurance against risk, both real and personal, and some earnings of management as well as true or Net interest."⁵ Under modern financial organization, the risk and managerial elements of the handling of loans are largely assumed by a special group of business enterprises, the financial intermediaries, and the corresponding portions of the interest payments by borrowers are in large part actually recorded in the form of wages paid and profits earned by the financial intermediaries. That is to say, the interest paid out by financial intermediaries is a far closer representation of true interest than the interest they receive. Consequently, the procedure of the Department must be characterized as an improper application of the Marshallian or traditional concept of interest as a factor cost.

The difficulties with the Department of Commerce usage of the concept of factor cost in its national income estimates are far deeper than this incorrect application. The practice of specifically associating types of income payments or receipts directly with a classification of agents of production arose in an effort to identify the existing classes of population with their economic status and the sources of their incomes. The early classical economists referred to three agents of production (labor, capital, and land) and three classes of people in the producing population (landowners, capitalists, and productive labourers), though they recognized that the class grouping did not precisely agree with the categories of agents of production.⁶ With later developments in economic theory a more detailed classification of factors or agents of production was developed. Marshall separated management from capital, and Pigou suggested that uncertainty bearing should be separated from both.7 With the spread of the joint-stock, or corporate, form of business organization, and with the advent of new forms of business organization (for example, in England building and loan societies and Rochdale cooperatives) the lines of demarcation between economic classes became blurred, and the parallelism between the agents or factors of production and economic classes tended to be replaced by a parallelism between the former and types of income drawn from the

⁴ Ibid., pp. 39-40; and Alfred Marshall, Principles of Economics, 8th ed., London, Macmillan, 1920, pp. 138-139.

⁵ Marshall, op. cit., p. xxix; see also pp. 588-591.

⁶ See, for example, John Stuart Mill, *Principles of Political Economy*, W. J. Ashley, editor, London, Longmans, 1909, p. 238.

⁷ Arthur C. Pigou, *Economics of Welfare*, London, Macmillan, 1920, pp. 142-147 and 915-924.

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productive processes of society. This shift in analysis was given greater emphasis in the United States, where class structure was less rigid than in England. More recent developments have made it clear that the latter parallelism, like the former, is far from satisfactory. A substantial part of what is recorded as profits is of the windfall variety and can hardly be regarded as a cost or payment for managerial decisions or for uncertainty bearing, or has a monopolistic tinge and is more akin to the old concept of rent than to remuneration for management. Taxation complexities sometimes turn profits in the Marshallian sense into salaries, or rewards for labor into capital gains. There is, too, a vast difference between income received in the form called "rent" and rent in the meaning of payments for the use of land or natural resources. All these have made the connection between income in specified forms and the agents of production as nebulous as that between the classes of the population and the agents of production. The whole concept of factor costs, as types of income payments associated with the Marshallian categories of agents of production, has become an archaic framework for the classification of income payments.8 Once this truth is recognized, even the ostensible purpose of the present confusing methodology in the handling of banks and other financial intermediaries will no longer exist.

OTHER INTEREST

From the point of view of the recipient, interest paid by government is for the same sort of service as interest on loans to business enterprises or loans to individuals. In addition, when such payments reach individuals they are as much a part of the value of current production distributed among the people of the nation as are the wages and salaries paid by government. This is true regardless of whether or not variations in the amount of interest paid by government are appropriately regarded "as representing corresponding changes in the value of current production."⁹ I can see no reason for treating interest payments by government differently from other interest payments in the accounts now called "gross national product" and "charges against gross national product." Whether interest payments by government should be given special treatment in estimates of "national income" is

⁸ See also my comment on the concept of income originating in an industry in *Studies in Income and Wealth, Volume Ten*, National Bureau of Economic Research, 1947, pp. 68-70.

⁹ Government interest payments are not included in value added to output by government because they are subject to fluctuations which, it is believed, it would be artificial to regard as representing corresponding changes in the value of current production" (National Income Supplement, 1954, p. 54).

a matter to be handled in a manner consistent with the procedure adopted for other government items. That is to say, interest on government loans is part of the more general problem of "duplication" involved in government services and the methods of paying for them.

As these comments would indicate, I cannot agree with Everett E. Hagen and Edward C. Budd that both government and other interest payments might be dropped out of consideration; though interest on brokers loans, as they suggest, might disappear from the final tabulations. Interest on loans for purchase of consumer goods, should, in my opinion, be retained as an interest item among consumers' expenditures. In theory interest on consumers' loans could be treated as part of the purchase price of the goods, that is, as payment for more prompt delivery than would otherwise be obtained, analogous to a special delivery stamp on a letter. But I would not consider this treatment preferable on theoretical grounds, and it would appear dubious as a practical matter.

RECOMMENDATIONS

Several recommendations emerge from the foregoing comments and from collateral considerations that I have not specifically mentioned:

1. Abandon the present methodology of handling banks, financial intermediaries, and interest.

2. Measure the "gross product" of banks and financial intermediaries along the lines recommended by Speagle and Silverman,¹⁰ divide this between intermediate and final products, and measure the latter by the portion of the receipts from sales of services estimated to be paid for by individuals and government.

3. Make such adjustments in the handling of insurance and of income payments in all other industries as may be appropriate in the light of the foregoing.

4. For the industrial classification combine direct interest transactions among individuals, business enterprises, and governments with the summation of data for banks, insurance companies, and other financial intermediaries into a financial services industry group, yielding as one of its distributive shares a figure for the interest income of persons, including interest from government obligations, similar to that now computed for the rental income of persons.

10 Richard E. Speagle and Leo Silverman, "The Banking Income Dilemma," *Review of Economics and Statistics*, May 1953, pp. 128-139, Table 3. My endorsement of this type of methodology is not necessarily an endorsement of the details as worked out by Speagle and Silverman.

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5. Separate real estate from the financial services industry group, and for the industrial grouping combine it with the estimates of rental income of persons, into a real estate and rental property industry group.

6. As recommended by Kenneth Ross and previously by James W. Kuhn,¹¹ abandon the concept of factor cost in the regular annual and quarterly computations and substitute the concept of an income distribution, by type of income, of the value of the national output, with a more realistic set of categories of types of income.

7. If an improved analysis of income payments in relation to a classification of agents of production is desired, as is urged by Raymond T. Bowman and Richard A. Easterlin, let this be an occasional or periodic separate study in which various sorts of pertinent adjustments can be made.

8. As soon as possible, carry through these modifications for the entire period for which the Department of Commerce estimates have been made.

Other Aspects of National Income Estimates

My remarks on aspects of national income estimating methodology other than the treatment of interest and financial intermediaries will be confined to a few problems: the treatment of monetary gold stock, the treatment of government services, estimates in constant prices, gross and net concepts in national income accounting, and terminology and tabular arrangements. Perhaps I should add that my silence on other difficult problems and criticized procedures, such as the evaluation of inventory changes, capital consumption estimates and allowances, capital gains, and exports and imports, should not be taken as approval of present practices or as agreement with the critics of those practices.

MONETARY GOLD STOCK

Monetary gold stocks owned by the United States government are treated by the Department of Commerce as claims on the rest of the world. Consequently, settlement of a balance owed to the United States by means of a shipment of gold to this country results in an estimated increase of the same amount in this country's claims on the rest of the

¹¹ James W. Kuhn, "The Usefulness of the Factor Cost Concept in National Income Accounting," *Review of Economic Statistics*, February 1934, pp. 93-99. Bowman and Easterlin also recommend that the factor cost concept be dropped, and a market price evaluation be substituted on the income side of accounts in which the product side is in market value, but recommend that both sides also be shown in terms of factor prices.

world without any change in the estimated net foreign investment or net indebtedness of the nation abroad. And if the Treasury buys gold from a domestic mine and adds it to our gold stock, the estimated debt of foreign nations to us is increased.¹² This legerdemain seems to me not only illogical but also downright ridiculous. It is like a store manager saying, on hearing that a customer had turned in a \$100 gold coin in payment of his bill (if gold were legal tender in the United States), "Ah, that customer cleared his account, but somebody else—we don't know who—now owes us \$100." The monetary gold stock is an inventory item, and not a debt or claims item, and should be so treated.

GOVERNMENT SERVICES

The wisdom of the decision, adopted some years ago, to treat all government output as final product, is still being questioned; and in two of the papers at this Conference a separation of government services between final and intermediate, with the latter excluded from the national income accounts, is recommended (by Bowman and Easterlin and by Hagen and Budd). With this recommendation I concur, though I recognize, as do the authors of those papers, the statistical difficulties that would be met and the borderline decisions that would be required. However, I am inclined to define intermediate services more narrowly than is usually done by advocates of their segregation from final products. I would like to repeat my suggestion at a former meeting that the general expenses of government and those of war be treated as final products, but considered a third major category, separate from capital goods and consumer goods and services.13 As an aid in preparing such an analysis and in presenting a description of the methodology, I would suggest a supplemental table of government expenditures showing all three items-intermediate products, final products, and income transfers-separately for the federal government and for state and local governments.

Inclusion of an imputed item of interest on government property, which has been recommended by Hagen and Budd, does not seem to be of importance for the regular annual estimates. However, I would join those who recommend exploration of the treatment of interest on government property (Bowman and Easterlin, Morris Cohen and Martin R. Gainsbrugh), adding that this can appropriately be done in connection with special studies of the relation of income payments to a classification of agents of production.

¹² National Income Supplement, 1954, p. 57; and Balance of Payments of the United States, 1949-1951, Dept. of Commerce, 1952, p. 113.

¹³ Studies in Income and Wealth, Volume Six, NBER, 1943, pp. 36-37 and 89.

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ESTIMATES IN CONSTANT PRICES

Hagen and Budd mention the superiority of the present practice of deflating the value of each final product by its own price series over the use of an index of consumer prices as a deflator of the total current value of the national output. I would like to offer a suggestion that might provide some further improvement in the methodology in arriving at measures of change in the quantity and prices of the components of output.

If our information were complete, we would have for each item of final output each year three figures: the value of sales (or output), the number of units sold, and the average price per unit during the year. From these data and appropriate use of a combination of the Paasche and Laspeyres formulas, we could obtain both price and quantity indexes in the form recommended by Bowley and Fisher.¹⁴ Such indexes could be prepared by groups of products, or for all products combined.

In practice, information for one or two of the three items is usually more complete and reliable than for the other one or two, and in a large proportion of cases it is necessary to prepare estimates for one item from the others. My suggestion is that this process be followed as a routine procedure not only with respect to preparation of current estimates but also as a method of preparing group indexes (for as small groups of products as possible). The resulting annual tabulations would be indexes of quantity of output and of prices, with consistent weighting, rather than "gross national product in constant dollars" and "implicit price deflators."

It is also suggested that monthly indexes of both quantity and prices of final products, based on sampling, be developed for current use, including application to the quarterly estimates of the value of output.

GROSS VERSUS NET INCOME ACCOUNTING

As I read the other papers and listened to the Conference discussion, I was impressed by the fact that the long-standing problems over which there is still so much controversy are for the most part associated with the differences between the estimates known as "gross national product" and those associated with the terms "net national product" and "national income." While duplication, deflation, and institutional change present problems for both the gross and the net concepts, they are particularly important for the measurement of "national income."

14 See Clark Warburton, "Elementary Algebra and the Equation of Exchange," American Economic Review, June 1953, pp. 358-362. I have also been impressed by the difference in emphasis, among users of the estimates, on the gross and net concepts, and by the increasing awareness of the desirability of providing for each of these concepts tabulations on both the income and product, or receipts and expenditures, sides of the accounts.

The efforts of the Department of Commerce to provide current and reasonably detailed data for both the gross and the net measures have involved the staff of the National Income Division in difficult practical problems and have tended to prevent adequate consideration of the theoretical problems associated with the differences between the gross and net concepts.

These impressions give additional support to the suggestion that preparation of the two sets of estimates-the gross and the net-could best be handled as separate projects of the National Income Division, with selection of the gross estimates for preparation annually and quarterly and as promptly as possible. I agree with Lewis Bassie and the spokesmen for business users that the latter are the data needed currently. The net estimates should be prepared more leisurely, and probably for annual periods only. There are two concepts of net value of output which need consideration. The meaning of one of these, now called "net national product," is simple, namely, the value of output at market prices minus capital consumption allowances. The other, now termed "national income," involves further deductions from the market value of output, and because of the complexities of modern taxation its nature as an economic concept seems less clear than in the days before annual estimates were prepared.¹⁵ Further, it would seem desirable that a very careful review be made of all the problems that have been discussed here, perhaps with additional conferences with the persons who have devoted special attention to these problems, even though this may mean a two or three year delay in the inauguration of a revised national income or net series.

TERMINOLOGY AND TABULAR ARRANGEMENT

1. Though I used the phrase, "value of the gross national product," over twenty years ago to refer to the concept which the Department of Commerce later called "gross national product,"¹⁶ I am now inclined

¹⁶ Clark Warburton, "Value of the Gross National Product and Its Components, 1919-29," Journal of the American Statistical Association, December 1934, pp. 383-388.

¹⁵ See the article by J. L. Nicholson, "National Income at Factor Cost or Market Prices?" *Economic Journal*, June 1955, pp. 216-224; see also discussions of the incidence of different types of taxation in various volumes of *Studies in Income and Wealth*; and the references in other papers in this volume on the divergence of economic realities from the competitive price assumptions underlying the factor cost and national income concepts.

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to agree with Ross that the word "output" might well be substituted for "product." The Department of Commerce has already moved in the direction of this substitution by extensive use of the word "output" in its description of the data and methodology.

2. I am also inclined to agree with Ross that the word "national" might be dropped, though his argument that the word is superfluous does not always hold true. However, in the places where it is not superfluous, it is usually inadequate. In publication of banking statistics by the Federal Deposit Insurance Corporation, it has been found necessary to use two concepts which are now designated, respectively, "The United States (Continental U. S. and other areas)" and "Continental U. S."¹⁷ If the word "national" is omitted, these terms might be used in titles where a description of the area covered is needed.

3. The term, "charges against gross national product," now used by the Department of Commerce for the income side of the tabulation of the value of gross output at market prices, seems to me decidedly unsatisfactory. The phrase, "gross income flow," which I used a number of years ago for a similar concept, seems more appropriate, though also not entirely satisfactory.¹⁸ Perhaps a more descriptive, even though cumbersome, phrase would be desirable, such as "income and other elements in the distribution of the value of output."

4. The suggestion of Cohen and Gainsbrugh that we need a new social accounting companion for gross national product merits serious consideration. Their suggestion that "the gross national expenditure could be set in a framework of incomes, transfers, borrowing and lending" appears to envisage a set of tables similar in character to those pertaining to 1941 and 1942 published in my article in the *Survey of Current Business* in 1943, but enlarged to include net changes in debt and corporate stock ownership between persons and business enterprises other than banks. Such a tabulation each year would be very useful.

5. A more direct and less elaborate accounting companion for gross national product can readily be developed by a few changes in terminology and itemization in the present table of the Department of Commerce entitled "National Income and Product Accounts." I also agree with other commentators that various improvements in presentation

¹⁷ These terms are not entirely satisfactory, but they were chosen as the best of various suggestions, and their use was cleared with officials of the Bureau of the Census.

¹⁸ See Clark Warburton, "Relation of Government Financing to Gross Income Flow," Survey of Current Business, April 1943, pp. 17-22.

can be made by a rearrangement of the items. A suggestion for revision of the summary table follows:

Income and Value of Output:

Suggested Items for a Summary Table			
Income and Other Elements in the Distribution of the Value of Output	Value of Output at Market Prices or Nearest Equivalent		
Personal income items: Wages and salaries Wage and salary supplements Rental income of persons Interest income of persons ⁴ Corporate dividends paid to persons Income of unincorporated enterprises Less: personal taxes and social insur- ance contributions ^b Plus: income transfer payments Subtotal: disposable personal income	Personal consumption items: Food, beverages, and tobacco Housing and household operation Clothing, accessories, jewelry and per- sonal care Transportation Medical care, education, and religion Recreation and foreign travel Other		
 Business allowances and undistributed income: Undistributed corporate profits (after income tax liability and dividends) Capital consumption allowances Contributions and miscellaneous allowances Inventory valuation adjustment Less: income transfer payments to persons Subtotal: business and institutional income (adjusted) 	Investment items: New construction Producers' durable equipment Change in business inventorics Net foreign investment		
Government income items: Corporate profits tax liability Other taxes collected from enterprises ^b Current surplus of government enter- prises Less: subsidies to business enterprises Less: services to business enterprises ^c Plus: personal taxes and social insur- ance contributions Less: income transfer payments to per- sons Subtotal: adjusted government in- come	Covernment items: Services to persons War and defense General government		
Total Subtotals: Disposable personal income in cash Other disposable personal income Business, institutional, and govern- ment income (adjusted)	Total Subtotals: Market purchases by persons and busi- ness Imputed items Government purchases		

* Including interest on government debt.

^b Includes forced payments to government other than taxes. ^c Values, at estimated cost, of government services classified as intermediate products.

COMMENT

I am not, of course, suggesting that the precise form I have outlined in this skeleton table will be found satisfactory. In fact I am sure that if George Jaszi were to lure me away from another agency of the government to act as his deputy for this task, I would myself make some modifications after a few weeks' work. I might, for example, move the subsidies and services to business from negative items on the left to positive items on the right-hand side. If I have understood Jaszi's remarks about treatment of government services, he would do this with the services but not the subsidies. It seems to me that the argument for this treatment of services can logically be applied to subsidies also, on the ground that this much of the value of output is paid for by government from taxes on behalf of consumers.

6. The recommendation of Cohen and Gainsbrugh that a figure representing cash income should be given is a good one. However, there may be a question as to what variety of cash income is the most useful, and there is equal need for a similar separation on the output side. Cash income of persons after taxes might be best for the income side, and similarly, market purchases by business and individuals for the output side. These could be given as subtotal items at the end of the summary gross income and output table, with the details of computation in a separate table.

СОММЕNТ

GEORGE JASZI, Department of Commerce

On the Fox Paper

I shall limit my remarks to Karl A. Fox's evaluation of the relative accuracy of the National Income Division series on personal consumption expenditures for food and the Department of Agriculture index of food consumption.

This is a highly technical subject, which does not lend itself to thorough discussion here because it involves a mass of detailed comparisons. I speak with some background of personal experience. Back in 1950 when the deflated expenditure estimates of the National Income Division were first prepared, we did in fact make these comparisons, and we had occasion last summer to review our main conclusions.

Our study disclosed disturbing discrepancies between the Department of Agriculture series and ours, of the general type discussed by Fox. However, while the investigation did not establish the superiority of either series, it seemed to tilt the balance in favor of ours. Attribute this conclusion to bias if you wish, but I cannot conceive that any ob-

jective observer would have drawn the conclusion that the Department of Agriculture series is clearly superior as Fox believes it to be.

I should like to call attention to two features of his analysis. The first is his assumption that our estimates are based upon "thin samples of food stores and restaurants." As a matter of fact, retail samples (thin or otherwise) are used only for interpolation between benchmarks. For years for which the census of manufactures is available, the estimates are based on it and on Department of Agriculture data for nonmanufactured food, being derived from these comprehensive source materials by the commodity flow method familiar to the members of this Conference.

The second feature requiring examination is the set of numerical comparisons he makes between the Department of Agriculture and Department of Commerce series. I wish these comparisons had taken quantitative account of the definitional differences between the two series. For instance, the Agriculture series is confined to civilian consumption whereas the Commerce series includes military consumption. Again, the former is valued at retail store prices whereas the latter includes also the margins, tips, and taxes specific to restaurants; and the former includes food produced by nonfarm persons for their own use and institutional food purchases, both of which are omitted from the latter series. Another significant difference stems from the fact that the Commerce personal consumption expenditure series excludes food purchases charged by retail store and restaurant customers to business expense.

The adjustments called for would not reconcile the two series or in some miraculous way establish the superiority of the Commerce estimates. However, they are quantitatively more important than are the residual statistical discrepancies in three of the five years covered by Fox's comparison in terms of per capita food consumption, and of roughly equal importance in the remaining two. Clearly, these adjustments should be made before one attempts to "contrast only differences in precision of *measurement*" (note 2).

On the Lebergott Paper

The principal conclusion of Stanley Lebergott's paper appears to be that the basic data for estimating nonfarm entrepreneurial income have not been very satisfactory. With this we can readily agree, as our discussion of the subject in the National Income Supplement, 1954, made clear. But we cannot agree with Lebergott on many of the points he makes in his review of the methodology we have followed in estimating the income of noncorporate enterprises in retail trade.

COMMENT

USE OF CENSUS DATA

By way of a background for consideration of one of these points, it is to be noted that, in the preparation of benchmark estimates of nonfarm business proprietors' income, the basic data reported by the Internal Revenue Service for 1945 and 1947 required adjustments for incompleteness (to cover firms that did not file tax returns) and for differences in industrial classification from that used in the national income estimates. Both adjustments were accomplished through comparison, on an industry basis, of IRS data with either the universe number of proprietors or gross receipts, as estimated by the NID.

For retail trade, the universe "control" adopted was an estimate of noncorporate receipts in 1948 developed mainly from the census of business. Lebergott doubts the validity of this estimate and suggests that it involves "a questionable addition of roughly \$1 billion to the entrepreneurial income total. . . ." This inference is incorrect. From the standpoint of his calculation, the relevant comparison is between our estimate of noncorporate receipts and the IRS figure, rather than between our estimate and the figure reported in the census of business. Actually, our estimate of retail entrepreneurial income for 1947 (prior to audit correction for income understatement) differs little from the figure derived wholly from IRS data. This figure included an estimated portion of the IRS "trade, not allocable" group, as well as a minor amount from the similar all-industry group, and it involved a reclassification into retail trade of some firms classified by IRS in wholesale trade.¹ For retail and wholesale trade combined, our 1947 estimate of noncorporate business income-prior to audit-exceeded the IRS figure by only a little over \$200 million, or 3 per cent.

Lebergott's discussion of our methodology on retail sales was for the purpose of appraising the estimates of proprietors' income. Having noted that our upward adjustment of the IRS net income data (before audit) was moderate, I do not consider it necessary to deal also with his sales analysis. Moreover, to do that adequately would require a paper in its own right. Necessarily, we have given a great deal of study to the definitions, characteristics, and coverage of industrial census data; and the uses (and nonuses) we have made of these data involve some of the most significant decisions in national income work that affect, in interrelated fashion, the estimates not only of entrepreneurial income but also of wages and salaries, consumer expenditures, and other components.

¹ See National Income Supplement, 1954, Survey of Current Business, Dept. of Commerce, p. 79.

Nonetheless, I do wish to note that Lebergott's use of the term "undercoverage" in reference to our upward adjustment of census sales data is loose. This adjustment—which he somewhat overstates in his informal estimates—embraces more than undercoverage in the usual sense. It allows also for the sales of firms which were in operation during 1948 but went out of business before the close of the year—such sales were outside the scope of the census enumeration—and it includes also the effects of any industrial classification differences.

ESTIMATES FOR RETAIL TRADE PRIOR TO 1939

Under the heading "annual estimates 1929 to 1939," Lebergott criticizes our procedure for estimating (adjusted²) noncorporate profit ratios in retail trade prior to 1939. This procedure consists of the extrapolation of a benchmark figure for that year by the movement of profit ratios in corporate retail trade. From an examination of the relative behavior of these two ratios for the post-1939 period, for which information on noncorporate as well as corporate ratios is available, Lebergott concludes: (1) that the relationship upon which our method is based is poor; (2) that the relationship between the two ratios is im-

	ANNUAL LEVEL			ANNUAL CHANGE		
	Lagged Extrapo- lation	Simple Extrapo- lation	NID Esti- mate	Lagged Extrapo- lation	Simple Extrapo- lation	NID Esti- mate
	(1)	(2)	(3)	(4)	(5)	(6)
1940	19.1	18.6	19.7			
1941	21.1	19.2	21.5	2.0	0.6	1.8
1942	22.6	21.2	23.6	1.5	2.0	2.1
1943	22.7	22.7	25.1	0.1	1.5	1.5
1944	23.1	22.8	24.0	0.4	0.1	-1.1
1945	23.3	23.2	23.4	0.2	.4	_0.6
1946	21.4	23.4	23.1	1.9	0.2	-0.3
1947	20.9	21.5	19.9	0.5	_1.9	-3.2
1948	19.4	21.0	19.4	1.5	0.5	0.5
1949	19.8	19.5	18.5	0.4	-1.5	_0.9
1950	19.0	19.9	18.8	0.8	_0.4	0.3
1951		19.1	19.0		0.8	0.2

TABLE 1

Estimates of Adjusted Profit Ratios in Noncorporate Retail Trade, 1940-1951 (percentage points)

Note: Numbers in italics are the closest approximations to the actual estimates.

² The profit ratios under discussion are defined as profits plus wages and salaries divided by sales.

COMMENT

proved if the noncorporate ratio is associated with the corporate ratio of the following—rather than of the same—year and our method of extrapolation could accordingly be improved by the incorporation of this lag; and (3) that since they lead corporate income, noncorporate income data might be used as a business indicator if they were available promptly.

In Table 1, I have calculated noncorporate profit ratios according to the method suggested by Lebergott, that is, by modifying our extrapolation procedure to introduce a one-year lag. The level of noncorporate profit ratios so calculated appears in column 1, and columns 2 and 3 show the results of the unlagged extrapolation method and the actual estimates, respectively. Columns 4, 5, and 6 show annual changes in the same three series. For any given year the result of the extrapolation method which gave the closest approximation to the actual estimate is shown in italics.³ The results are interesting. It appears that Lebergott's method would, for the period under consideration, yield better estimates of the level of noncorporate profit ratios than does our extrapolation method. However, it would yield inferior estimates of the annual change in noncorporate-profit ratios than does ours.⁴ Accordingly, Lebergott's statement that "allowing for a one year lead would bring a substantial improvement in the accuracy of the estimates" (page 476) must be qualified.

Moreover, I do not even think that we are confronted with a draw between two equally legitimate methods appropriate for different purposes. I believe that the fact that a better estimate of the level of noncorporate profit ratios is obtained by Lebergott's method for this period is entirely fortuitous. It stems from a relationship of the relative magnitudes and movements of noncorporate and corporate profit ratios peculiar to the period and not properly characterized in terms of the concepts of "lead" or "lag."

The broad relative pattern of the two curves may be summarized as follows (see Chart 1). In the prewar period, the noncorporate ratio is higher than the corporate ratio, and both show roughly similar annual increases. During the war years, the noncorporate ratio declines while the corporate ratio continues to advance. As a result, the levels

³ I follow Lebergott in his assumption that the estimates in columns 3 and 6 can be used as the standard from which error is measured. This is the only possible assumption even though we know that the statistical basis for making the post-1939 estimates, especially for years for which IRS benchmark data were not available, is far from complete.

* Estimates of noncorporate profit ratios based upon simple and lagged correlation of corporate and noncorporate profit ratios (as distinguished from the estimates, embodied in the table, based upon simple and lagged extrapolation of the 1939 benchmark) point to exactly the same conclusions. of the two ratios come much closer together. In the postwar period, both ratios first decline and later stabilize.

The elliptical pattern Lebergott notes in his Chart 1 reflects mainly the disparate movement of the two ratios during the war years. The introduction of a one-year lag improves the relationship in these years by eliminating one year of disparate movement. It does so without offsettingly worsening the relationship in the remainder of the period under observation essentially, I believe, because the successive annual

Chart 1—Adjusted Noncorporate and Corporate Profit Ratios in Retail Trade, 1939-1951



Source: For 1940-1951 see Stanley Lebergott's paper, Table 1; for 1939, noncorporate was 18.5, corporate, 17.6, according to Dept. of Commerce data.

slopes of the two curves happen to be very similar in the prewar period, and not sufficiently dissimilar in the postwar period to ruin the overall relationship when a lag is introduced.

Thus the lagged extrapolation method proposed by Lebergott yields improved results for 1940-1951 by virtue of the peculiar relation of the two series in these years. Had this relationship not prevailed it might equally well have produced inferior results. Moreover, a year-toyear examination of these ratios indicates that their relationship over this period cannot properly be characterized by the terms "lead" or "lag." No lead or lag is indicated either in the prewar or in the postwar period; and if the war period indicates anything at all, it is a threeyear rather than a one-year displacement.

Since there is no reason whatsoever to assume that a relationship similar to the 1940-1951 pattern characterized the two profit ratios in the pre-1939 period, there is no reason to believe that Lebergott's method would have produced a superior estimate even of the level of noncorporate ratios for the pre-1939 period, let alone of their annual movement. Had the relationship been different, it might equally well have produced a worse result.

In contrast, our unlagged extrapolation method is based on the common sense assumption that such covariation as exists between corporate and noncorporate profit ratios will manifest itself simultaneously rather than with leads or lags. This assumption is, I submit, corroborated by an examination of the post-1939 data which show a high degree of annual covariation except for the abnormal war period (see my Chart 1).

Two additional points may also be noted. First, a comparison of columns 5 and 6 of my table suggests to me a considerably more favorable diagnosis of the validity of the simple extrapolation method than might be conveyed by Lebergott's comments on the lack of satisfactory relationships and by the scatter diagram he introduces as *corpus delicti*.

Secondly, unless I am mistaken, his notion that noncorporate profits lead corporate profits must go overboard in the light of the preceding analysis. Even though Lebergott refers to the marginal position of noncorporate firms as a possible explanation of this lead, his arguments on the similarity of corporate and noncorporate profits are so much more convincing that perhaps he will accept the demise of this premature business indicator without shock or surprise.

ESTIMATES FOR RETAIL TRADE SINCE 1939

Lebergott regards as improbable the 1950-1954 movement of our provisional proprietors' income estimates in retail trade (see his section

on "annual estimates—change since 1939"). He may turn out to be right, but I find his arguments unconvincing.

Although not yet formally adjusted to various IRS data (covering sole proprietorships and small corporations) that became available subsequent to their preparation, our estimates have been checked against these data, and the 1949-1952 movement does not appear to be appreciably out of line. Moreover, the 1950-1954 changes we show for total nonfarm proprietors' income—of which retail trade is a large segment—are corroborated by two sets of data: (1) IRS compilations of net business income reported by individuals on the first page of their federal income tax returns (1950-1953) and (2) data on the income of the self-employed covered by old-age and survivors insurance (1953-1954).

One reason Lebergott doubts our 1950-1954 changes in retail proprietors' income is that they do not conform to those in retail corporate profits. But this disparity is not necessarily significant. The relationship between the two which he notes for 1940 to 1946 fails to hold not only for 1950 to 1954, the period for which he questions our estimates, but also for 1947 to 1951, a period for which the entrepreneurial income data are reasonably good.

Over the whole span from 1940 to 1954, the relative movements of the corporate and noncorporate retail series were roughly similar, but corporate profits were more volatile within the period. Their greater volatility was perhaps to be expected, since retail entrepreneurial income includes a large, comparatively stable, labor income element. It is for this reason, as well as because of the differences in type-of-store composition, that I do not believe that a crude comparison with corporate profits provides a useful yardstick for evaluating the movement of retail entrepreneurial income.

Lebergott also tests our 1950-1954 movement in retail entrepreneurial income in light of the relationship between total income originating in retail trade and that in wholesale trade. Whatever relevance this relationship might have, I fail to observe the "fairly marked deviation" in it that Lebergott reports for the years 1950-1954. Nor do I understand his analysis in this regard. For the "deviation" would be still greater if the noncorporate profit ratios in retail trade declined, instead of increased, from 1950 to 1951—which he had indicated earlier he thinks was really the case.

Lebergott's Charts 2 and 3 present the data necessary to evaluate the above conclusions. In examining these charts one should scrutinize the points of the scatter diagram rather than rely on the lines which Lebergott has drawn through them as visual guides. These lines remind me of some I have drawn myself on rainy afternoons to divert my children: Which line is the longer one?



ANOTHER VIEW OF THE DATA

Under this heading Lebergott attempts to appraise the post-1939 movements in retail entrepreneurial income by comparing distributive margins derived from income-originating and consumer expenditure data. He is modest in his claims for this approach, but I would go further than he—to me, the statistical crudities are such as to prevent any valid inference about year-to-year changes in entrepreneurial income.

For instance, Lebergott's method appears to be based on the assumption that the commodities included in the retail and wholesale price indexes are closely comparable except as to the market in which their price quotation is obtained. Detailed work on the deflation of gross national product leads me to doubt whether this assumption holds sufficiently to bear the weight of the conclusions Lebergott bases on it.

Also the method assumes that the activities reflected in the trade margin derived from the income side are identical to those reflected in the margin derived from the product side. This is not the case; and the extent to which reality departs from assumption may be sufficiently marked to invalidate the method. Perhaps it even explains some features shown by Lebergott's Chart 4, which he seems to regard as evidence of error in the entrepreneurial income estimates.

For example, automotive, filling station, building materials, lumber, and hardware margins are reflected in their entirety in the estimates derived from the income side. But only roughly half of automotive and filling station margins, practically none of building materials and lumber margins, and only part of the hardware margins are reflected in the estimate derived from the product side. This noncomparability would tend to explain the peculiar nature of the scatter in the 1942-1947 period. As to the 1950-1954 period, the bias suggested to Lebergott by Chart 4 appears to be exactly opposite to that suggested to him by Chart 2. If the results of the two "tests" are averaged, our estimates for this period may perhaps receive a satisfactory mark, after all.

As a minor point, it is doubtful that the application of differential audit adjustments by size of firm would have affected appreciably the war-postwar change in retail entrepreneurial income. Income distribu-

tions for sole proprietorships calculated from IRS data for 1945 and 1949 give little support to Lebergott's argument. Although similar data are lacking for partnerships, allowance should be made for the fact that the shift in legal form of organization over this period, which involved mainly the largest-sized partnerships, would have had a contrary effect in this regard.

QUARTERLY ESTIMATES

In commenting on our quarterly estimates, Lebergott reports briefly on his use of IRS monthly collection data for estimating quarterly changes in entrepreneurial income. It is gratifying that he found "a pattern of movement that is surprisingly similar to that estimated by the NID." Having enjoyed only limited success with this type of analysis even on an annual basis, despite successive refinements in the method, we can only underscore the word "surprisingly" in his statement. We must express complete skepticism regarding the value of these IRS data for short-run estimation, but hope that this skepticism might be dispelled by further study of his method.

On the Lerner Paper

I cannot hope to emulate Joseph Lerner in his impressive mastery of the technical and legal factors relevant to the mining industry. My comments relate to certain economic and statistical conclusions which he draws from his investigations.

DEPLETION AND DISCOVERY VALUES

Lerner states that the National Income Division measures profits before deduction of depletion charges because "discovery values are not added to capital formation and so depletion should not be deducted from profits." He adds (in note 2) that "Their statement tends to suggest a relationship between depletion for tax purposes and discovery values which does not really prevail."

In the passage to which he refers⁵ we do not use the term "discovery value" in the precise, technical manner in which he interprets it. The relevant passage begins: "The value of new discoveries of natural resources is not counted as part of capital formation..." To convey the broad notion we intended, we might equally well have written: "New discoveries of natural resources are not counted as part of capital formation..." It escapes me how a reading of this passage could give rise to the misconception that depletion charges reported to the Internal

⁵ National Income Supplement, 1954, p. 41.

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Revenue Service are based upon "discovery values," or indeed on any specific technical or legal formula.

SCOPE OF DEPLETION ALLOWANCE

I believe Lerner is correct in his contention that we add back a somewhat higher depletion figure than is consistent with our conceptual framework. However, I cannot agree with him that payments for mineral rights (as distinguished from development and exploration expenditures) are in this category of items that we would want to depreciate and count as capital consumption even if depletion broadly defined is not so counted. In connection with his calculation of the probable magnitude of our error, I should like to note, in addition to this point, his assumption that all IRS figures relating to depletion methods other than percentage depletion relate to categories of expenditures that should be reflected in capital formation and consumption even within our conceptual framework. This assumption does not seem to me to be warranted. With regard to the possibility of actually making a statistical correction in our present estimates, there is a third point-the extreme dearth of relevant statistical information. This dearth is evident from Lerner's own survey of the sources and from the fact that, as a last step, he arbitrarily doubles the estimate of our error which he derives from the data at his disposal.

Attention might be drawn to the fact that on an all-industry basis the error in capital consumption allowances with which he charges us on this score is less than 1 per cent for 1949, the most recent year for which he provides an estimate. Needless to say, this figure is not cited as a justification of our commissions or omissions—on an industry basis the error which he calculates would be much larger—but it does put the problem into some sort of general perspective.

ACCOUNTING FOR EXHAUSTIBLE RESOURCES

On the broader issues relating to the treatment of exhaustible resources in the national accounts, Lerner's main conclusion would appear to be that "proper accounting for discovery and its depletion is preferable to accounting for neither ..." (page 499). Few would object to this provided we may interpret the word "proper" as "useful in economic analysis" and may question whether "accounting" necessarily implies inclusion in capital formation and consumption and output or whether it would be served by a systematic recording not channeled through the current income and product flows.

Unfortunately, Lerner does not make any significant contribution towards resolution of the question as to what the "proper accounting"

would be. His analysis brings out some of the obstacles clearly. In contrast, his only hint at a practical solution, namely that "Schedules of values for five or ten-year accounting periods may be more appropriate than annual figures for mineral values" is singularly unpromising.

INDUSTRY INCOME MEASUREMENT

Turning to industry income measurement, Lerner points out that in our national income series the corporate profits estimates are based on company statistics whereas the employee compensation estimates refer to establishments. As he quite fairly notes, we have drawn attention to this deficiency ourselves, in the National Income Supplement, 1954; accordingly, his contribution lies presumably in the quantification of the problem in the table on page 502.

Lerner multiplies our estimates of corporate profits in mining by the ratio of depletion charges reported by all corporations to depletion charges reported by corporations engaged in mining. He infers from this calculation that our estimate of corporate profit originating in mining, in 1937, for instance, should be \$828 million instead of \$436 million, and that our measure of national income originating in mining is understated by about 20 per cent in the same year. This procedure implies that profits from nonmining activities classified under mining in the present estimates are negligible.⁶

We feel that these figures grossly overstate the possible error in our

⁶ The following tabulation is of some interest in this connection. It shows for corporations which reported on a consolidated basis in 1933 the depletion charges, compiled net profits, and number of corporations reported under mining and quarrying on the basis of the (consolidated) 1933 industry classification and the (unconsolidated) 1934 industry classification.

	1933 Classi- fication	1934 Classi- fication	
	(millions of dollars)		
Depletion charges	61	108	
Compiled net profit	60	37	
Number	1,301	1,169	

Source: Compiled from Statistics of Income for 1934, Internal Revenue Service, Part II.

The table shows that depletion charges reported in mining were higher on an unconsolidated than on a consolidated basis, in the manner posited by Lerner. But it shows also that the number of corporations reporting was actually significantly lower. This can be due only to the fact that a considerable amount of nonmining activity is reflected in the statistics for the mining industry. The behavior of the compiled net profit item points in the same direction, although it might be explained on different grounds also. (These would, however, conflict with the other of Lerner's assumptions, viz. that profits from mining activity are proportional to depletion.)

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estimates. Multiplying our profit estimates by the ratio of sales of mining companies as reported by the IRS to the value of product of corporate mining establishments as reported in the 1939 census of mines, we obtain an estimate of corporate profits that is only about 11 per cent higher than our present figure and an estimate of total national income originating in mining that is only about 2 per cent higher. For the same year Lerner's type of calculation would indicate a 109 per cent understatement in corporate profits and a 20 per cent understatement in national income originating in mining. Our technique, unlike Lerner's, adjusts not only for profits from mining activity at present classified in nonmining industries but also for profits from nonmining activity at present classified in mining.

The 11 per cent figure does not allow for differential profit ratios for mining and nonmining activities. No adequate information exists on this subject. The only pertinent evidence we are aware of is contained in the special tabulations in *Statistics of Income for 1934* which analyze the effects of the deconsolidation of corporate returns. These tabulations show that deconsolidation raised the profit ratio (before deduction of depletion) in mining from about 9 to about 10 and $\frac{1}{2}$ per cent. So in other words, a somewhat higher profit ratio on mining than on nonmining activity is indicated. These data are not sufficient to establish the size of the differential, but it seems unlikely that it could be large enough to raise the adjustment factor calculated on the basis of sales to anything like the vicinity of the adjustment factor Lerner calculated on the basis of depletion charges.⁷

While we disagree with Lerner on the magnitude of the error involved, we shall of course continue to be on the lookout for data and techniques that will permit a systematic annual adjustment of our series. But the difficulties in the way of even an order-of-magnitude adjustment are apparent. The Census Bureau is now preparing a cross classification of company and establishment data for 1954 which may permit some progress in this difficult area.

⁷ In his note 20 Lerner refers to an attempt by P. W. McGann to adjust the national income estimates for the noncomparability stemming from our present use of establishment and company data. McGann obtains an alternative estimate of corporate profits in mining by deducting from value added as reported in the 1939 census of mines a list of components of value added other than corporate profits. We believe that the list is not comprehensive enough, essentially because it does not include items—such as purchased power and services—which are part of value added as defined in the census. With a rough allowance for these items, on the basis of data derived from the 1947 interindustry study of the Bureau of Labor Statistics, McGann's method yields estimates of 48 per cent and 9 per cent for the understatement of corporate profits and national income originating in mining, respectively. The large margin of error to which residual calculations of this type are subject should be noted.

CAPITAL OUTLAYS

In connection with Lerner's comment on our treatment of capital outlays charged to current expense, the only point I wish to make is that we do warn our public of the effect of the short-cut we have taken (National Income Supplement, 1954, page 42). I have no quarrel with the quantification which Lerner provides; it seems to be approximately the correct order of magnitude.

On the Warburton Paper

Clark Warburton's paper on financial intermediaries and interest confirms my sense of dissatisfaction with everything so far put forward in this area, including the existing procedures of the National Income Division and the further modifications in it which I propose. In my paper, as well as in commenting on other conference papers, I have summarized the theoretical presuppositions upon which my treatment of banking interest rests, and my major objections against the presuppositions underlying alternative procedures. I do not think that I could throw further light on the matter or promote the discovery of a truly satisfactory solution by taking explicit issue with the introductory portion of Warburton's paper, which deals with the same range of subjects.

As to his specific recommendations, (1) is covered in the section of my paper that deals with the banking imputation. I covered (2), (3), and, implicitly, (4) by my Appendix, Note 8, on the Speagle-Silverman article to which Warburton refers; and (6) and, I believe, (7) by my discussion of the factor income concept in my paper (including Appendix Note 6 on the Kuhn article) and by my comments on the Ross paper. With respect to (5), Warburton is laboring under a misconception if he believes that the rental income of persons is not now classified as originating in the real estate industry; for the rest, his recommendation seems to reduce itself to the proposal that we designate real estate an "industry division" instead of an "industry."

Apart from the topic of financial intermediaries and interest, Warburton suggests that "preparation of the two sets of estimates—the gross and the net—could best be handled as separate projects of the National Income Division, with selection of the gross estimates for preparation annually and quarterly as promptly as possible. . . . The net estimates should be prepared more leisurely, and probably for annual periods only."

I have set forth in my paper and in comments on the other conference papers the reasons that have kept us from preparing what Warburton calls "net" estimates—net, that is, of selected government services and of capital consumption. I leave it to the reader to judge whether lack of adequate consideration of the theoretical problems associated with the "net" concepts was an element in that decision, as Warburton asserts. As to the suggestion that the "net" measures should be regarded as a separate project, to be pursued at a more leisurely pace, I may note that if a decision were made to publish "net" estimates these could be prepared as expeditiously as the gross measures.

I shall not comment on Warburton's other recommendations, but, if I may be permitted to borrow his language, my silence should not be taken as a sign of approval.

REPLY BY MR. LEBERGOTT

"Then, while he was making some original observations on the east wind, and to confess the truth, feeling anything but at his ease, the folding doors of a further chamber, brilliantly lighted, were thrown open."

Disraeli, Endymion

Let us look into George Jaszi's room. A case is being made—with such brilliance, vigor, and so staggering a grasp of detail that it is convincing even where it is wrong. Jaszi is by turns tolerant,¹ indifferent,² and alertly critical.³ As he is tolerant, I am grateful. As he is indifferent I am regretful. As he is opposed to criticism of the estimating structure that the NID had to erect with unseasoned wood I am sympathetic, but unconvinced. Reference to my four charts on the retail trade estimates can readily focus our differences of opinion.

MAJOR POINTS AT ISSUE

Chart 1 helped to evaluate the estimates for 1929 to 1939, showing that they were developed by a procedure which fails to reproduce the figures for the 1940's (when we have reliable check data) with any great fidelity.

Jaszi does not contend that the relationship shown in this chart is a close one, or that the NID method does well, or that the test I used is not a relevant (if crude) one. What then is his objection? Ninety per cent of it is an attack on a method of estimating entrepreneurial income that he attributes to me, and 10 per cent is a penetrating review of a point that I had labeled "incidental and irrelevant to the present

³ To almost every specific comment in my detailed discussion of the adequacy of the retail trade estimates.

¹ Yes, he says, of course the NID could benefit from better source material.

² To my suggestion that analysts need estimates of business income by size of business as much as they require the corporate-noncorporate figures now provided.

purpose." I should like to join him in spurning the method of estimating entrepreneurial income he discusses but remain unregenerate in seeing in Chart 1 an elliptical pattern that typically indicates lagged relationship in time series data. Let me hasten to add, however, that the lag flows simply from the use of the NID procedure; it does not reflect anything that I (any more than Jaszi) wish to commend as an analytic device.⁴

Chart 2 focussed on the data for 1950 to 1954, leading me to wonder how activity in retail trade could be so partitioned by legal form that a marked decline in the earnings of most major lines of corporate trade⁵ could take place from 1950 to 1954 (and especially from 1950 to 1951) while earnings of noncorporate trade were estimated to rise.

Jaszi clearly has the best of the argument—not because of his contention that corporate and noncorporate profit rates could quite reasonably take different paths (they kept step together through the dizzy changes of 1940 to 1946); not because he sees a divergence appearing as recently as 1947 to 1951 (1949, the central IRS benchmark year in that period, is quite in line with the 1940-1946 relationship) but because he has checked that data against roughly relevant OASI and IRS data and finds them to fit. The ingenuity of the tax accountant and the complexity of the real world have disposed of my essentially a priori question.

In Chart 3 I contrasted the close relationship between retail and wholesale income originating trends up to 1950 with the divergence in later years—noting that subsequent to 1950 the NID had to shift to weaker source data. I commend the reader once again to the chart itself, and join with Jaszi in warning him against the Muller-Lyer illusion—or indeed any other.

Chart 4, I regret to state, continues to suggest to me that a sharp and unreasonable lack of consistency appears for the war years between the trends of income originating in retail trade as estimated by the NID (adjusted) and my estimates of retail margins. This inconsistency continues to raise a question as to the adequacy of the entrepreneurial income component of the margin—since the other components are

⁴ Anyone interested in the minutiae of this issue should note that the lag in Chart 1 reflects a relationship between corporate and noncorporate ratios—the ratios being those between (payrolls plus profits) and (sales) for the respective legal forms. The useful business indicator that I thought might develop related solely to the profit rate for unincorporated business—that rate being only one component of the combination payrolls plus profit factor that is discussed by Jaszi and appears in his chart under the heading "profit rate."

⁵ Food, general merchandise, apparel, furniture, automotive, building materials, and hardware.

sufficiently reliable, stable, or small that we cannot attribute such striking deviations to errors in estimating them.

Jaszi's comments are devastating, and destroy beyond hope of human recall two assumptions—neither of which I made or needed to make. My estimate of retail margin trends rests essentially on a comparison between the price trend of consumer commodities at retail and at wholesale. To compare such trends I did not have to assume that the commodities composing each index "are closely comparable except as to the market in which their price quotation is obtained" since no direct price comparisons are being made, but rather that the commodities included in the price index are an adequate sample for indicating price trends of consumer goods at wholesale.⁶

Jaszi attributes to me a second assumption—tending to produce the "peculiar nature of the scatter in the 1942-1947 period." It would be too bold a contradiction to say not only that I did not make such an assumption but that such an assumption would have been correct.⁷ Let me therefore note only that I need not have assumed that activities reflected in the trade margin estimate "are identical with" those in the income originating estimate because I did not seek—*absit omen*—to compete with the NID in making estimates of dollar margins. My concern related only to regression relationships of *trends* in margins.⁸ The only problem that does arise, and it is not discussed by him, comes about when the composition of expenditures changes so that the margin percentage implicit in the deflated retail data changes. Consideration of the virtual lack of change in margin from 1939 to 1947 as esti-

⁶ I find it hard to believe that the immense selection of consumer commodities in the BLS wholesale price index do not constitute a representative group whose price movement may be compared with the implicit NID deflator at retail. Jaszi does not, as he might have, raise the problem of careful weighting. Experimentation with weighting will show, however, that no reasonable amount of manipulation could wipe out the gross deviation apparent in Chart 4.

⁷ The assumption that "activities reflected in the trade margin estimated from the income side are identical with those refleced in the margin derived from the product side" is correct because "automotive, filling station" and so forth margins are reflected in both estimates. Jaszi mistakes my use of a margin ratio of 29.5 per cent (which the NID derives from data covering most consumer purchases, but not all, and relates to most retail sales, but not all) for a direct dollar estimate of margins. In fact I applied the ratio to the NID total for consumer expenditures, as my text indicated.

⁸ Since Jaszi mistakes an interest in trends for one in absolute measures he is led to assume that I have ignored margins for automotive, filling stations, etc. In fact I attributed a 29.5 per cent margin to that group. But suppose that group (which accounts for no more than say 15 per cent of expenditures) had a margin as high as 50 per cent. The over-all margin I should have used would then have been 32.5 per cent and the data shown in my table and chart would have been quite unchanged for this percentage is a constant margin deduction from deflated data, identical for every year in the period.

mated by NID and of the general stability of the Kuznets, Shaw, and Barger margin figures suggests that composition changes do little to produce errors for the present purpose. In any event it would require margin *changes* completely out of reach with past experience to explain, for example, the striking 1945-1946-1947 changes shown in Chart 4.

LEVEL OF RETAIL TRADE ESTIMATES

In a brief and not particularly fascinating comment on the level of the estimate for retail trade, I seem to have hit on a topic close to the NID's corporate heart. I suggested that the NID implied a 16 per cent undercoverage of sales by the 1948 census of business, questioned so large an adjustment by the NID, and doubted the consequent "addition of \$1 billion to the entrepreneurial income total in 1948—affecting the level of the estimates since 1929." Since the NID claimed the census of business as its "universe 'control'" for retail trade, the steps from the heavy receipts adjustment via profits-receipts ratios to the profits adjustment seemed reasonably clear.

Jaszi does not question my 16 per cent estimate: in the lexicon of controversy, I take his phrase "somewhat overstated" to mean "oh, accurate enough for present purposes." He finds the relevant comparison, however, is not between the census before and after NID adjustment but "between our estimate of noncorporate receipts and the IRS figure." Since "our estimate" is the census total plus an NID adjustment and "the IRS figure" is the IRS total plus an NID adjustment, we would expect these to hang together.⁹ We are, therefore, presumably being directed to a look at these two NID adjustments. However, the first adjustment (to the census data) is the 16 per cent figure that started this round of questions. If the validity of that adjustment has not been demonstrated, the fact that the equation balances proves little.

Jaszi's concern seems to arise because an adequate discussion of these adjustments reaches into the full complexity of the procedures used by the NID. Let me add here only this: there can be no question of the NID's wisdom of seeking some comprehensive and consistent

⁹ The derivation of the NID receipts total from the census figure is discussed in my paper. "The IRS figure" is derived by NID's adding to IRS retail trade total, among other things, a portion of the IRS "trade not allocable" industry total—a total that IRS itself was unable to allocate between retail and wholesale trade. How much the IRS figure should be adjusted (for differences in industrial classification, reporting unit variation, and so forth) is a difficult decision for NID—one whose validity can be evaluated not by whether there was much or little adjustment but by some set of data of greater independent validity. Such data are the census and social security figures used by the NID.

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control on its estimates each year, such as are provided by the social security wage reports, and then letting the chips fall as they may. But the wisdom of such a procedure, and the adequacy of the NID estimates in general, do not necessarily carry over to commend every particular series in the accounts. Even the happiest marriage between estimating techniques and data can have at least one unfortunate consequence. There is no need to wrap the classic scholarly mantle of NID estimating procedures around one of the weakest series, for which NID has been given little raw material and in which there has been so little analytic interest.

REPLY BY MR. LERNER

My paper dealt with two questions. First, are the National Income Division's concepts about mineral discoveries and their depletion satisfactory? And second, how great an error is there in the national income accounting for mining?

In discussing the first question I took up some of the difficulties involved and considered various solutions. George Jaszi does not think that my suggestion would be fruitful, that perhaps five-year or tenyear entries, rather than annual ones, should be made for discovery values and their depletion. However, I note that exception was not taken to my description of the problem of discovery-depletion concepts in national income accounting. In view of Jaszi's diligence on behalf of NID concepts and procedures, silence indicates agreement.

Jaszi and I may differ theoretically on how much depletion should be excluded from mining income, but the numerical difference at issue on this score is small for recent years though it might be large if the income series were to be revised to 1919 or even 1929. Furthermore, Jaszi would place the understatement of income due to the charging against current income of certain capital expenditures in the oil and gas industry at the magnitude I derived.

However, he takes vigorous exception to what I found to be the effect of the Internal Revenue Service industrial classification on the NID measurement of corporate mining income. In 1939 corporations classified as belonging to the IRS extractive industries ("mining and quarring") accounted for 47.9 per cent of all depletion allowed. Therefore I multiplied the \$296 million of NID corporate income ascribed to mining¹ by the reciprocal of 0.479 and described the resulting \$618 million as a rough approximation to the correct value for 1939 mining

¹ Table 18 of National Income Supplement, 1954, Survey of Current Business, Dept. of Commerce, pp. 184-185.

corporate income. This indicates an increase in national income originating in mining² of the same amount, from \$1,582 million to \$1,904 million or 20.4 per cent.

Jaszi, using an entirely different approach, thinks that my method "grossly overstates the possible error in our estimates" and that the NID error is about 11 per cent rather than 109 per cent. In terms of total income generated in the extractive industries he finds an understatement of about 2 per cent.

His method is based on an assumed relationship between sales and profits. For the total value of mineral production he takes a 1939 census figure of \$3,404 million. The \$2,731 million of total sales for corporations classified in mining and quarrying (*Statistics of Income*, Part II) plus an approximation of the sales by unincorporated mining enterprises of \$346 million makes total sales of \$3,077 million. He then divides the census total value by the \$3,077 million, which makes total sales equal to 110.6 per cent of sales included in the IRS mining corporation and unincorporated mining enterprises.³

As I understand Jaszi's analysis, he recognizes that mining is carried on by nonmining corporations, nonmining activities by mining corporations, and considers that the two sources of misclassification can be held to cancel each other, the nonmining corporate income included in the IRS mining and quarrying classification being about equal to the mining income realized in the nonmining IRS industries, corporate mining income being understated by only about 11 per cent. Furthermore, Jaszi concedes that the NID profit figure may be off by more than this percentage because of the difference between the income-tosales relationships in mining and in nonmining activities. However, he is confident that this would not have an impact anywhere near the level I suggest.

I will not attempt to demonstrate why Jaszi's operations do not lead

² Ibid., Table 13.

³ There appears to be a slight error in the computations as applied by Jaszi. Since the number which I reassess is corporate profits, rather than corporate profits and the income of unincorporated mining enterprise, the more appropriate measure in Jaszi's approach would be to subtract the \$346 million of sales by unincorporated enterprises from the \$3,404 million total value, leaving \$3,058 million in sales to be accounted for by corporations. Since IRS mining corporation sales come to \$2,731 million for 1939, it would follow that corporate profits would have to be increased by 12 per cent instead of 11 per cent to allow for the corporate sales not accounted for by IRS mining corporations.

There is one context in which I inadvertently use corporate income before taxes as though it included unincorporated mining profits—that occurs when for illustrative purposes a comparison is made between wages and salaries and corporate income before taxes. Some of the wages and salary payments are for unincorporated enterprises. to correct results. Instead, I will try to cast additional light on the magnitude of the NID error another way.

In the NID concept, corporate mining income equals IRS corporate net income before taxes (with certain adjustments)⁴ plus the depletion allowed. In 1939 the depletion allowed all corporations came to \$438 million while the NID corporate profit for mining activities (including depletion added back for corporations classified in mining and quarrying) came to \$296 million. This would mean a 48 per cent NID understatement of corporate income even if there were not a single dollar of IRS definition income to be added to depletion in determining NID corporate income.

However, this approximation to the NID error can be improved. In 1939 there was \$86 million of IRS net income which met the NID definition of corporate mining profits in addition to depletion (\$296 million total corporate NID income minus \$210 million of depletion allowed in the IRS mining classification). Some of this profit may have been attributable to nonmining activities of corporations listed as mining in the IRS classification. On the other hand, the nonmining activities of IRS mining firms may have been carried out at a loss and their mining income may have been even higher. Suppose that 20 per cent of the 1939 (IRS definition) income of mining corporations (as determined by NID) were attributable to nonmining activities. Then \$68.8 million of net IRS corporate income should be added to the \$438 million of depletion, making corporate profit in the NID sense equal to \$506.8 million. This would mean an understatement of corporate profit (NID) by 70 per cent if there were not net income (IRS, after the NID adjustments) for all of the mining activities carried on by the IRS nonmining corporations.

Again, my own first approximation would place 1939 corporate extractive income at about \$618 million instead of the \$296 million listed by the NID. (I already reached \$506.8 million without allowing for any IRS profits for mining activities carried on by nonmining corporations.) The nonmining corporations received \$228 million in depletion allowances in 1939. How much IRS mining income accom-

⁴ Among these adjustments are capital gains, corporate dividend received, state income taxes, estimated revisions to be made following IRS audit, and foreign activities. Foreign mining income includes foreign mining income of corporations irrespective of the IRS classification of the corporation. In the course of this adjustment procedure, which is carried out on an industry-wide basis, this foreign mining income is subtracted from IRS corporate income in the mining category. At the same time NID assumes that the foreign mining income for which it adjusts by subtracting from mining and adding to the "rest of the world" account does not get any IRS depletion. I have no convenient way of testing this assumption. However, I have a strong impression that this is not correct. panied this depletion is not easy to ascertain. However, the amount could easily bring total income close to the level which the depletion ratio suggests.

I have concerned myself with 1939 because it was the year selected by Jaszi. The following tabulation gives the "minimum" percentage errors in the NID measurement of mining income of corporations for some recent years, the minimum NID corporate mining income in these years being the total depletion allowance:

	NID Corporate Mining Income	Total Corporate Depletion Allowed	Minimum Percentage Error in NID Corporate Profits ^a
	(1)	(4)	(3)
	(mi	llions)	
1943	\$ 500	\$ 644	29
1947	953	1,210	27
1949	925	1,476	60
1950	1,374	1,709	24
1951	1,418	2,085	47
1952	1,249	2,113	70
1953	1,226	2,302	88

* 100 (col. $2 \div$ col. 1)-100.

Source: NID corporate mining income: 1943-1951, National Income Supplement, 1954, Survey of Current Business, Dept. of Commerce; 1952-1953, Survey of Current Business, July 1956, Table 38, p. 17. Total corporate depletion allowed: various editions of Statistics of Income, Internal Revenue Service, Part II, except for 1953, which is from the preliminary edition of Part II.

For the years 1946 through 1949 there are important special Treasury Department tabulations which were made for only the extractive activities of the corporations sampled. Among the items shown are depletion allowed, net income subject to depletion, and gross income subject to depletion. The net income subject to depletion corresponds to the NID corporate profit.

I will illustrate my computations for these years by using the 1949 data made available in the special Treasury Department study as recorded in the report of the President's Materials Policy Commission.⁵ Although this report does not list the total income subject to depletion, it comes to slightly more than \$2,700 million.⁶ For 1949 the NID

⁵ Resources for Freedom, Report of the President's Materials Policy Commission, June 1952, Vol. v, Tables III and IV, pp. 14-15.

⁶ According to Table IV, the 1949 difference between adjusted basis depletion and allowable depletion equals 40.1 per cent of net income (after adjusted basis depletion). The 1949 depletion difference (col. 3 of Table III) is \$1,059.4 million. Therefore

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lists \$925 million of corporate mining income. This means that the Treasury Department sample originated nearly three times as much corporate profit as that listed by the NID for the entire mining industry. But this is not all.

In 1949 depletion allowed all corporations was 1,476 million. Of this amount the Treasury sample received 1,120 million. Therefore, the corporations not in the sample received 356 million of depletion. If all of the mineral activities carried on outside of the sample resulted in no NID income beyond depletion, total corporate NID profits from extractive industries would be 3,056 million (2,700 million in the Treasury sample plus 356 million for other corporations), slightly more than 3.3 times the NID 925 million for the year compared with the 3.1 relationship I derive as a first approximation.⁷

The following table contains the preceding results together with those for the years 1946 through 1948 for which special Treasury tabulations are available.⁸ Except for possible amounts of foreign income which the NID would exclude, the entries in line 1 correspond very closely to the NID measure of corporate income. The NID would increase the amounts shown by state income taxes and an estimated increase in corporate IRS profit which the NID anticipates will be revealed by audit.⁹ The amounts shown in the second line are found by subtracting the depletion allowed the companies in the Treasury studies from the total depletion allowed all corporations.¹⁰ Line 3 is the sum of the first two lines—the corporate income before taxes, including depletion for all of mining if the operations not in the Treas-

⁸ Surveys of more recent years would be of great interest. The 1946 and 1947 Treasury Department surveys are found on pages 195 and 196 of *Revenue Revision* of 1950, Hearings before Committee on Ways and Means, 81st Cong., 2d sess., Vol. 1.

⁹ For mining activities, the expected audit correction should be made with special care because one of the sources of increased IRS income revealed by audit is overstatement of depletion. This part of the increase of NID income due to revised IRS profit should be offset by an equal reduction in the amount of depletion which NID income includes in mining income.

¹⁰ I have not attempted to ascertain or take account of the amount of depletion permitted on timber operations.

net income after adjusted basis depletion was \$2,641.9 million. To this is added the \$77 million of adjusted basis depletion which makes an NID corporate income from mining activities of \$2,718.9 million for the Treasury sample.

It is not possible to ascertain how much foreign income is included in the Treasury group. Such amounts should, of course, be excluded in this computation. Therefore, the results here obtained are somewhat higher than the precise NID approach would make them.

⁷ To avoid complexity, the calculations in this rejoiner are not adjusted for the portion of the depletion allowance which NID inappropriately includes in profits. Taking this into account would reduce the NID profit figure and my estimate in the same proportion.

ury studies had no NID mining income in excess of the depletion allowance.

	(millions of dollars)			
	1946	1947	1948	1949
1. Net income before depletion in Treasury study	1,244	2,167	3,400	2,700
2. Depletion not included in Treasury study	244	372	421	356
3. Line 1 plus line 2	1,488	2,539	3,821	3,056
4. Estimated income by the depletion ratio method	1,475	3,030	4,413	2,806
5. NID income	438	953	1,430	925

I now turn to the second statistical illustration used by Jaszi. In Statistics of Income for 1934, Part II, are tabulated the 1934 data for corporations which had reported on a consolidated basis in 1933 according to two methods of industrial classification. These were their 1933 consolidated industrial classification and the 1934 method which classified each individual corporation separately. This two-way listing could not take account of the proper distribution of multiple industry activities of industrial corporations as to whether or not they had filed consolidated returns in 1933. Jaszi refers to this data to demonstrate that there must have been a substantial amount of nonmining income realized in corporations in the IRS mining sector, and to judge the reliability of the proportionality method.

He points to the reduction in the number of mining and quarrying corporations when all consolidated returns are separated and assigned as individual corporations to their appropriate industry. It is evident that a considerable number of corporations consolidated into mining could not be so classified on an individual return basis. Jaszi provides no information on the income of the corporations removed from the mining classification when the privilege of consolidation of returns was limited to "common carrier by railroad." In the 1930's the nonmining activities may have yielded no net income, or they may have brought losses. An assured evaluation of this part of the picture would require a great deal of data collection as well as analysis.

The 1934 material also demonstrates that although total NID income may move in the same direction as depletion, an instance has been found in which the results are far from proportional. According to Jaszi, corporations with \$108 million of depletion had \$37 million of compiled IRS net profit (1934 classification) while on the consolidated basis \$61 million of depletion was accompanied by \$60 million (actually \$59.3 million) of compiled net profit.

While these numbers are correct, as numbers, they are not directly applicable to national income accounting because the NID makes various adjustments in compiled net receipts before reaching the sum

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to which it adds depletion to find corporate income originated. Of these various adjustments, capital gains and dividends received can be eliminated from the data available in *Statistics of Income for 1934*, Part II. When these adjustments are made, the group with \$108 million of depletion loses \$34 million while the group with \$61 million of depletion loses \$9.2 million. Consequently, under either method of classification, these sets of corporations totaled IRS losses for NID purposes. The losses move in the same direction, although not in perfect proportion to the depletion allowed. Finally, it is generally possible to find two groups of corporations for which the depletion-IRS income relationships move in opposite directions. In each year a considerable amount of depletion goes to corporations with IRS losses while other corporations with depletion realize IRS income.

My elaborate testing of the reliability of the rule of proportionality may give a wrong impression of my confidence in its effectiveness for any specific year. The depletion proportionality approach is at best only an extremely crude approximation. Actually, my purpose in carrying through the various tests of the results of the application of the proportionality procedure has been more to indicate the probable order of error in the NID corporate profit estimate than to verify my own approach.

It can hardly be expected that so simple a rule would be accurate for many years. Any attempt to re-evaluate the income originating in the mining sector over a period of years would involve a great deal of work; work devoted to the special characteristics of the tax system, the mining industries, and the distribution of their activities, in each of the years.

So far as I can see, the size of the error in the NID method of determining income originating in mining is increasing. The time is long overdue for a systematic effort to determine accurately the income from the mining industries. It can be done, because almost all the information necessary for determining net income originating in the mining industries is computed by taxpayers in the course of preparing their tax returns even though the taxpayer is also engaged in nonmining activities.

Taxpayers must compute net income subject to depletion on a property-by-property basis. In this figure, net income subject to depletion for the individual property is the basic component from which it is possible to ascertain the amount of net income originating in the corporate and noncorporate sectors of the mining industry. All that would be necessary would be for the taxpayer, in completing the return, to total the net incomes which he has before depletion. And this

number, arrived at directly, would be the very one of concern to the NID. This net income subject to depletion could be subtracted from other income in the tax return to yield income from nonmining activities. Furthermore, it would be possible in such an arrangement to make certain that both the depletion and the net income from foreign operations are separated for this purpose. Some detail on the specific mineral output could well be considered desirable also.

PART IX

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