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NATIONAL INCOME ORIGINATING IN FINANCIAL INTERMEDIARIES *

Dwight B. Yntema

Among the least satisfactory concepts underlying national income methodology are those that have been constructed for dealing with financial intermediaries such as banks and life insurance carriers. Exception may well be taken to assumptions used in the theoretical approach for dealing with intermediaries as also to qualifications attaching to statistical procedures. Review and reformulation are overdue. The problem centers about suitable definition and measurement of property income flows into and from financial intermediaries. As will be seen, decisions concerning flows in this area have repercussions in nonintermediary industries.

The treatment the Department of Commerce and the National Bureau of Economic Research have accorded banks and life insurance carriers is itself a departure from procedures applied in ordinary industry areas, where property income items are taken net of property income receipts.[1] This standard pro-

* The proposed treatment of financial intermediaries is a joint product to which several members of the National Income Unit of the Department of Commerce contributed. In explaining the treatment, the writer does not imply any claim to originality but wishes to accept full responsibility for defects and faults of presentation. He takes this opportunity to express particular indebtedness to Edward F. Denison for his helpful criticism and encouragement.

[1] See, for example, *National Income in the United States, 1929-35*, (Washington, D. C., 1936), pp. 14-5, 54-5, 168-70, and 236-8; and Simon Kuznets, *National Income and Its Composition, 1919-1938* (National Bureau of Economic Research, 1941), II, 407-10.

cedure would require that interest receipts (as defined) be deducted from interest payments (again as defined) and that dividend receipts be deducted from dividend payments. Application of this procedure in certain financial and insurance areas, however, would lead to anomalous results in that net interest and dividends would typically tend to be negative. Negative or relatively small positive values for interest and dividends would depress total income originating, in more extreme cases making it negative as well. The effect may be observed in estimates for certain types of financial institution, notably holding companies, to which the standard procedure has been applied.

Results of this kind were not accepted as realistic measures of factor earnings for banks and life insurance companies and a special procedure was devised. On the assumption that financial intermediaries act as 'aggregates of individuals', interest (as defined) and dividends received by such businesses are treated as if they went directly to individuals. Then, income originating in financial intermediaries is calculated by summing compensation of employees, entrepreneurial income, if this is present, and corporate profits. There are no entries for interest paid or for interest and dividends received by intermediaries. This procedure yields more or less reasonable results for total income originating in intermediary industries.

The cure, however, introduces difficulties. All-industry totals for interest and dividends (and thereby corporate profits, since profits are the sum of net dividends and corporate savings) are unsound in that they do not provide measures of interest and dividends actually received by individuals. In addition, certain awkward statistical difficulties, particularly in the measurement of interest originating in nonintermediary industries, are resolved only by arbitrary assumptions. Interest going to individuals including 'aggregates of individuals' is measured as interest on long term debt of nonintermediary corporations, net of interest on government bonds received by such corporations, plus government bond interest and interest paid by individual mortgagors.[2] The compilation is at best little more than an in-

[2] The 'aggregates-of-individuals' assumption for financial intermediaries does not, of course, necessarily require this particular method of measurement. Still, it is because of the treatment of banks and life insurance companies as aggregates that it is at all acceptable to assume that long term interest received by business offsets short term interest received by individuals, implicit in this method of measurement.

direct estimate of the net interest flow to individuals, including that going via aggregates of individuals. Reconsideration on theoretical grounds as well as the development of a better methodology is definitely indicated. The object should be to devise a treatment that puts measurements for financial intermediaries basically on a par with measurements for other industry areas.[3]

It is proposed that financial intermediaries be recognized as businesses in which at least part of the interest and dividends received from the investment of funds made available by others is used in providing seemingly free services to those supplying funds to intermediaries. For transactions of this kind, which appear to short-cut usual business practices, imputation of income and services is sound and definitely in order. On the income side, a flow of property income over and above actual dividend and interest disbursements should be imputed in order to account for an implicit payment by financial intermediaries to those who supply them with funds. It is perhaps simplest to classify this imputed property income as imputed interest. On the product side, an imputation of services rendered by financial intermediaries is indicated, equal in value to the imputed income paid by intermediaries. In other words, it is assumed that the income imputed to depositors or investors is automatically used by them in purchasing imputed services from financial intermediaries. The imputed services are those rendered in connection with both the investment of funds and the servicing of accounts. Financial intermediaries are defined to include

[3] In 1932 Morris A. Copeland reviewed the 'banking-income dilemma' in the light of the then current work of W. I. King, comparing results obtained by a carefully considered reformulation he presented with those of Mr. King, 'Some Problems in the Theory of National Income', *Journal of Political Economy*, XL, 1 (Feb. 1932), pp. 1–51.

In brief, Mr. Copeland proposed the calculation of a 'value added in banking' equal to interest income of banks from equities in nonbanking business minus interest paid on deposits and profit on bank proprietorship equity invested in nonbanking businesses. For estimating profit on bank proprietorship equity invested in nonbanking businesses, Mr. Copeland suggested taking (1 minus national wealth in banking divided by proprietorship equity) multiplied by proprietorship income. The 'value added in banking' would in its entirety become property income receipts of nonfinancial enterprises. Mr. Copeland concluded that present information was inadequate for apportioning this charge among the several industry groups, and decided it was best to make the deduction from total property income without apportionment. In this general connection, see also his 'Concepts of National Income', *Studies in Income and Wealth*, Vol. One (National Bureau of Economic Research, 1937), pp. 23–6.

banks, life insurance carriers, and other financial enterprises, comprised chiefly of investment trusts and holding companies and credit agencies.

Funds are supplied to financial intermediaries by individuals and businesses and this requires a division of imputed amounts between the two. The income and services imputed to individuals on funds they supply to intermediaries become components of national income and of national product, respectively. In contrast, since income and services imputed to businesses cancel in all-industry summations, they do not appear in national income and national product. The income imputed on funds supplied by businesses must be treated as a property income receipt from the standpoint of business recipients of this income. Along with dividends and actual interest received, it must be included as one of the offsets to interest and dividend payments in obtaining net property income originating. Correspondingly, imputed services rendered businesses by financial intermediaries are intermediate, not final products. As will be seen below in the detailed discussion of each of the three intermediary industries, it is assumed that businesses receive imputed income only from banking. Apportionment procedures, consequently, are deferred to Section 4. Under the proposed division of imputed income between individuals and businesses, in summary, national income will include imputed interest income to the extent of part of the income imputed in banking and the entire income imputed in life insurance carriers and other finance.

In comparison with results that would be obtained were financial intermediaries treated like ordinary industries, the proposed calculation makes national income larger by the amount of imputed income going to individuals. The proposed treatment, as developed below, also shifts to financial intermediaries some of the property income that would originate in other industry areas. Finally, it accomplishes a transformation of total property income shares for all industries directed toward putting them into the form in which they are returned to individuals.

Comparison of the treatment developed here with the method commonly used is complex because of the peculiar nature of the latter method with respect to interest originating in nonintermediary industries. The outline below should be helpful in this connection, in that it reviews underlying assumptions and the essential procedures of each.

Comparison of Common and Proposed Treatments of Inter-Business Property Income Flows in National Income Calculations

COMMON METHOD DERIVING FROM AGGREGATES-OF-INDIVIDUALS ASSUMPTION	PROPOSED METHOD
Basic Assumptions concerning:	
Financial Intermediaries	
Unlike other types of business, banks and life insurance carriers are assumed to act as aggregates of individuals with respect to receipts of property income. It is assumed that property income receipts of intermediaries on long term debt and corporate stock go to individuals via intermediaries acting as aggregates of individuals. Property income payments of intermediaries (excluding corporate profits) are not counted.	By taking account of a type of business transaction implicit in operations of financial intermediaries (banks, life insurance carriers, & other finance), these enterprises may be treated in the same manner as nonintermediary business. It is recognized that a property income payment (imputed interest) is made by financial intermediaries to those that supply intermediaries with investment funds. This imputed income is measured as interest and dividends (also net rents for life insurance) received by intermediaries less actual property income returned by intermediaries to those supplying investment funds.
Interest Flows of Nonintermediary Enterprises	
All long term interest as measured by interest on (a) government securities, (b) long term debt of corporations, net of interest received by corporations on government securities, (c) real estate mortgages outstanding against individuals is assumed to go to individuals, including aggregates of individuals, directly from the industry in which it originates. The correlative assumption is that all other interest is short term and paid to businesses only. Short term interest is not counted, either where paid or where received.	Payments of both long and short term interest are taken in each case net of receipts of both types of interest, including imputed interest income received from banks.

Computation of Property Income Originating in:

Financial Intermediaries

For banking and life insurance carriers, only profits of corporations are counted. There are no entries for interest paid or for interest and dividends received.	For banking, life insurance carriers, & other finance (investment trusts, credit agencies, etc.), property income returns, including imputed income 'paid', are taken net of property income receipts.

Nonintermediary Enterprises

Interest is computed as mortgage interest paid by noncorporate borrowers, interest paid by government, and interest paid on long term debt of corporations net of government interest received by corporations. Dividends are taken net of dividends received by corporations.	Interest is computed as all interest paid net of all interest received by corporations including imputed income (interest) received from banks, and net of imputed income (interest) received from banks by noncorporate enterprises. Dividends are taken net of dividends received by corporations.

1 Characteristics of Distributive Share and Industry Components of National Income

Perspective is needed for consideration of specialized problems relating to financial intermediaries. To this end it is desirable first to note important characteristics of distributive share and industry components of national income. Next, some attention must be given to the computation of property income originating in ordinary industry areas. This background is essential for consideration of the property income problem.

As a value measure of factor input, national income is the sum of the earnings of productive factors for their participation in current economic activity. This total is taken to comprise compensation of employees, net incomes of businesses both noncorporate and corporate, interest, and net rents and royalties accruing to individuals. Clearly, estimation of this total requires a complete yet unduplicated count of factor input values. Development of an unduplicated aggregate may then be taken as a first essential element in national income estimation.

Other basic characteristics relate to components of the unduplicated aggregate. First, consider the distributive share components of national income. The total, a measure of net returns to factors, comprises certain specified distributive shares. With respect to the share components, the viewpoint is basically one envisioning returns to individuals for input into a consolidated productive system. Because factor earnings from the system are so viewed, the distributive share analysis of national income would be expected to show share earnings in the form that these leave the system. But this is also the form in which shares go to individuals, including quasi-individuals such as nonprofit institutions, and individuals acting collectively through government. As a second requirement in national income estimation, then, it is proposed that distributive share components of national income be measured in the form and amount going to individuals.

In contrast to the distributive share analysis of national income, the industrial components of national income show earnings from factor use in each industry. These provide measures that are fundamental to an appraisal of the relative importance of different industries, as judged by factor earnings. Since distributive share earnings in a particular industry may in the case of property income go either to individuals or to other industries, the net share figures for an industry cannot be measures of net returns going directly to individuals from the industry. They represent merely the industry's net contribution to all industry totals that in leaving the economic system must go to individuals. In brief, the third requirement in national income estimation is that factor input by industries be measured in the industries where factors are used, not in the industries where individuals make their contributions of factors.[4]

[4] Passing attention should be given to the alternative industrial allocation which would show factor earnings going directly to individuals from each industry. The two calculations can be contrasted by a simple illustration. Assume that two companies constitute an economic system and that factor earnings are in the form of profits and bond interest only, as shown below for companies A and B. Individuals, apparently, must own directly all the securities of Company B but not all of Company A since, judged by factor earnings, Company B holds one-fourth of the bonds and one-fifth of the stock of Company A.

	COMPANY A	COMPANY B
Interest paid	100	30
Dividends paid	50	75
Corporate savings	20	0
Property income received		
Interest	0	25
Dividends	0	10

National income in this simple illustration is the sum of net interest and dividends paid and corporate savings.

		INCOME ORIGINATING IN	
	NATIONAL INCOME	COMPANY A	COMPANY B
Total	240	170	70
Interest	105	100	5
Dividends	115	50	65
Corporate savings	20	20	0

2 Distributive Shares and Income Originating in Industries other than Finance and Insurance

In reviewing the treatment of property income flows in nonfinance industries, particular interest attaches to elements that assure that the income calculations have the basic characteristics noted above; namely, that national income be an unduplicated yet complete measure of factor input values, that the distributive share components of national income measure factor earnings in the form and amount going to individuals, and that industrial components indicate the value of net factor use in each industry. In practice, of course, such ends as these are realized only approximately since in statistical calculations minor atypical elements must be neglected. A case in point is that of firms in industries other than finance so far as these may engage in financial operations that account for only minor parts of total activity. When this happens, it is common practice to net out the income flows from minor activities without introducing the specialized procedures that would be used were financial operations dominant in company activities.

Results of the alternative industrial allocation are somewhat different. We know that all the property income receipts of Company B came from Company A. Deduction of these receipts from total factor earnings in Company A leaves net earnings going to individuals from that company and there is no netting out of Company B returns. The income total for the two companies, however, is the same as before and the distributive share components of this total for the two companies combined are unchanged.

		Income returned to individuals	
	National income	Company A	Company B
Total	240	135	105
Interest	105	75	30
Dividends	115	40	75
Corporate savings	20	20	0

It is clear that industry by industry the alternative calculation of national income components cannot measure net earnings from factor use. In the extremely simplified illustration, the economic system was assumed to comprise only two companies. This assumption greatly facilitated the alternative computation since it could be inferred that property income receipts of Company B must have come from Company A. If even a third company, Company C, had existed and had factor earnings like those of Company A and no property income receipts, the solution would have required additional data. To make the alternative computation in such a case, it would be necessary to know either the amounts of property income receipts of B from A and from C or the division of the factor earnings of the companies between amounts returned to other companies and amounts returned to individuals. Such data, however, are unavailable, so that the alternative calculation is not statistically possible. It is doubtful, furthermore, that results from the alternative calculation, if they could be obtained, would be as useful as those derived by the ordinary procedure.

The following comments touching in succession upon each distributive share are confined to procedural aspects of income calculations relating to inter-business flows of factor earnings in nonintermediary industries.

Compensation of employees. Wages and salaries and other compensation of employees are calculated on the assumption that labor input of hired workers is used in the industry that employs them. This rules out inter-industry flows of wages and salaries and their supplements. There can be no duplication on account of inter-business flows of wages. If services of laborers on the payroll of Firm A are made available to another firm or to consumers, it is assumed that Firm A is supplying business services. Payments to Firm A are for services rendered and are not in the form of compensation of employees.[5]

Entrepreneurial income. Net income of unincorporated businesses — sole proprietorships and partnerships — is estimated on the assumption that property income receipts in the form of interest and dividends of persons who are proprietors in addition to being individuals are in effect received by these persons as individuals, not as proprietors. If basic data on unincorporated businesses show interest and dividend receipts, these property income items are deducted from reported net income in estimating entrepreneurial income for national income purposes. Correspondingly, interest and dividends received are not deducted as receipt items from property income paid. This treatment forestalls possible duplications as between property and entrepreneurial income; also the industrial source of property income flows, that in basic data may be channeled through noncorporate firms, is properly that of originating industries.

It must be admitted that this assignment does not precisely measure the property share components of national income in

[5] It will be noted in the review of the corporate profit and interest shares immediately following that an analogous assumption is not made in the treatment of property income flows. If it were, it would call for treating interest and dividend income of business as receipts for services rendered (use or investment of funds). Only property income flows to individuals would then be in the form of interest and dividends (profits) and the computation of income would take the form suggested in the preceding footnote. But the assumption underlying such treatment is out of harmony with the manner in which business accounts are kept and, even if the treatment were desirable, statistical sources do not admit of the computation.

the form and amount actually going to individuals. Difficulties develop in the case of partnerships. Treating interest and dividend receipts of partnerships as if they go directly to individuals is clearly unrealistic since partners can consider such income as accruing to them only as partnership net income. Yet the assumption is necessary because of lack of much detailed data underlying entrepreneurial income and because it is simplest to combine the estimates for the two types of noncorporate business.

Corporate profits. Net income of incorporated businesses is taken net of receipts of corporate dividends. As the netting out of dividends received is entirely against dividends paid, corporate savings are unaffected by the adjustment. The fact that corporate profits in national income accounts are measured exclusive of capital gains and losses substantially prevents the corporate savings (positive or negative) of one company from being reflected in the profits of another. This treatment satisfactorily meets criteria relating to duplication in the total, distribution share composition, and industrial source.

Because, in the past, reports on dividend receipts covered only dividends received from domestic corporations, the practice has been to net out only dividends received from domestic corporations. This left dividends from abroad implicit in the profits of industries receiving such dividends. In consequence, it was necessary that the dividend component of the balance of payments entry in the miscellaneous industry be computed as dividends from abroad received by individuals minus all dividend payments abroad. Since information on total dividends receipts by corporations is now available as far back as 1937 it is possible to eliminate this incongruity. Netting out total dividend receipts against dividends paid gives a better measure of net factor earnings by industries. The meaningfulness of the adjustment for international flows of property income is improved by taking all dividends received from abroad minus all dividends paid abroad.

Interest. The interest component of national income has in the past been estimated as the sum of interest payments on long term debt outstanding against nonintermediary corporations, governmental bodies, and real property owned by individuals.

Corporate receipts of government interest payments have been netted out against long term interest payments of corporations. Short term interest then is an inter-business flow. The assumption introduces arbitrary elements not only in the national income total but in its industrial and distributive share components as well.

The procedure proposed makes it possible to recognize both long and short term interest flows. Interest for an industry is computed as total interest paid by all enterprises minus total interest (explicit and imputed) received by corporations and minus imputed interest received by noncorporate enterprises. The imputed interest that is allocated to the industry from banking is discussed below. The resulting estimate is theoretically sound in that it is a direct measure of net earnings for factor use in each industry.

Incidental attention must be given at this point to the need for proper coverage of interest payments made by individuals under the proposed procedure. As was done in connection with the earlier method, all long term interest paid on mortgages outstanding against real estate owned by individuals must be counted; this appears as a component of the interest originating in real estate. Second, interest payments by individuals on indebtedness other than mortgages must be included, at least to the extent that it is paid to business. From the standpoint of estimation, it may be necessary to omit inter-individual payments of nonmortgage interest, placing this outside the scope of economic activity encompassed in national income estimates. Nonmortgage interest payments of individuals to businesses are entered in some suitable industry group, presumably the 'private households' industry of the service division along with wages of domestic service workers.

Net rents. Like entrepreneurial income and corporate profits, this return is computed net of costs. It is basically a special type of entrepreneurial net income realized by individuals from real estate they own and either rent or use for housing as owner-occupants. In the latter case, the return is an imputed net rent; the Department of Commerce is increasing its national income coverage to include this item. Returns netted by businesses from the lease of their real estate holdings do not, of course, appear as net rent in national income complications; they are implicit in business profits. Realizations from real estate used by owning businesses are similarly in business net income. The remaining area of real estate ownership, government, can be divided between properties leased to tenants and other properties. Net rents realized on the former will be taken into account in calculations for government. Imputed realizations on other government properties are not covered in Department of Commerce estimates, essentially because of difficulties in making trustworthy estimates.

Net rents realized by individuals on their real estate holdings are grouped together and classified under real estate in the broad finance, insurance, and real estate group. It may be noted first that in national income tabulations this return is 'net' in the sense of being net of various expenses and charges. This is quite different from the meaning of net as used in connection with interest and dividend payments. Also, the classification of net rents as a type of income originating in real estate is quite independent of any industry implications concerning property use. On theoretical grounds, such as the smallness of residual net rents in comparison with gross rents and because of numerous statistical difficulties besetting a calculation of net rent by property-using industry, it is best to view gross rents paid by tenants simply as payments for property-use services. Net rents then become a specialized business profit.

3 Finance and Insurance Industries

In turning from general procedures applicable in most industry areas to the development of modified methods suited to segments of the finance and insurance industries, it is worth while first to note explicitly the distinguishing characteristics of the groups that are to have special treatment. The financial intermediaries comprised in the special groups differ from firms in other areas in that a major if not substantially complete share of total receipts is in the form of interest and dividend income. This is not to imply that businesses in other industrial areas do not typically have some property income; it is intended only to point out that the dividing line involves little more than a difference in degree. In practice, however, this dividing line is important since whenever interest and dividend income is sizable in comparison with income from sales of commodities or services, ordinary statistical methods used in calculating property income originating in an industry give thoroughly untenable measures of returns for factor use.

The fact that imputation is undertaken in connection with financial intermediaries when these differ from other industries only in degree suggests that some adjustment of procedures might be desirable also in other industrial areas. On a theoretical level, this would necessarily follow. Quantitatively, however, the adjustment would not be very important; moreover, it would be necessary to rely upon rather doubtful solutions to difficulties confronting statistical measurement.

The procedure proposed is simple in basic outline. It requires the imputation of an interest payment, equal to the value of services rendered without explicit charge, to supplement actual disbursements of interest plus certain dividends. However, at least a minimum amount of detail concerning procedure and methodology must be added before the outline takes on much meaning. Chief problems center about the definition of the interest to impute and its allocation between businesses and individuals and among businesses. This detail will tend to differ among the several types of financial intermediary. Consequently, different types of intermediary — banks, other finance (mainly long and short term credit companies, investment trusts and holding companies), and life insurance carriers — are discussed. Each area is sufficiently homogeneous to admit of reasonable similarity in the treatment of property income flows.

4 Banking

If usual procedures for dealing with inter-enterprise property income are applied in banking, the large interest and dividend receipts of banks result in negative net property returns. The sum of net property income and compensation of employees is also negative and clearly does not measure the cost of factor use in banking. The difficulty is overcome and at the same time the calculation for banks can be put on a sound basis consistent with the treatment accorded other industries by recognizing a type of business transaction that is implicit in bank operations

— the supplying of seemingly 'free' services to depositors in return for 'free' use by banks of depositors' funds. The amount of imputed property income originating in banking is taken as interest and dividend receipts minus interest payments. It is allocated to depositors including individuals, government, and industries. From the standpoint of receiving industries, the imputed income allocated to business is essentially similar to other property income received. Along with interest and dividend receipts, it must be deducted from property income payments in arriving at net income originating.

The nature of the property income computations can best be shown by numerical illustration. Part A provides illustrative receipt, expenditure, and profit figures for all other industries combined and for commercial banking. Part B shows the computation of income originating in each industry group and national income. For convenience, receipts and expenditures relating to intermediate products are consolidated for enterprises within each group, but not interest and dividends. Further, entries for imputed income and imputed services are included. The numerical magnitudes are arbitrary.

Part A

Receipts, Expenditures, and Profits for Banking and for Other Industries

	Other Industries		Banking	
Receipts				
Sales of final products	170		55 (50 imputed)	
Sales of intermediate products	30		40 (all imputed)	
Total sales		200		95
Interest received	10		70	
Dividends received	5		30	
Receipts of interest imputed on deposits	40			
Total other income		55		100
Total receipts		255		195
Expenditures and Profits				
Expenses to other industries	40 (imputed)		30	
Wages	95		60	
Interest paid	75		10 (on deposits)	
Dividends paid	35		3	
Undivided profits	10		2	
Payment of interest imputed on deposits			90	
Total		255		195

PART B

Income Originating in Banking and in Other Industries and National Income

	INCOME ORIGINATING Other Industries	Banking	GROSS TOTALS	NATIONAL INCOME
Total	160	65		225
Wages	95	60	155	155
Interest	75	10	85	5
Dividends	35	3	38	3
Undivided profits	10	2	12	12
Payment of interest imputed on deposits		90	90	50
Deductions for property income received				
Interest	−10	−70	−80	
Dividends	− 5	−30	−35	
Receipt of interest imputed on deposits	−40		−40	

In the illustration it will be seen (Part A) that banks receive 100 in interest and dividends and 5 in service charges to individuals (sales of final products). Of the 100 interest and dividend receipts, 10 is paid out as interest on time deposits, leaving 90 retained by banks. This 90, together with the 5 received from charges to individuals, is used by banks for expenses to other industries, wages, and profits. In retaining the 90, banks may be said to short-cut ordinary business procedures which would call for (1) payment of 90 to depositors, this being the major share of the interest and other income received by banks from the investment of deposit funds, and (2) a counterbalancing service charge of 90 to depositors for services rendered in carrying depositors' accounts and investing their funds. Recognition of these two balancing transactions results in entries of 90 for receipts from sales of final and intermediate products by banking and payment of 90 income imputed on deposits. Since 40 of the imputed income goes to other industries (intermediate products), the 'other industry' column carries entries of 40 in receipts of income imputed on deposits and 40 in expenses to other industries, i.e., banking.

Compilations of national income and its components (Part B) are derived directly from entries in Part A, including imputed items. Deductions for property income received by other industries include the receipt of 40 in income imputed on deposits. Banking has an imputed income payment of 90. Algebraic addition yields 160 for income originating in other industries and 65 in banking. National income totals 225, equal to total sales of final products (170 plus 55). The distributive share components of national income are obtained by adding entries for the two industries and netting out the property income deductions. For the sake of clarity, interest imputed on deposits was not consolidated with other interest in showing distributive share components of national income.[6]

The income computations in Part B of the illustration meet the tests suggested in Section 1. First, the total is an unduplicated yet complete value measure of net factor input. Second, the distributive share components of the total are in the form and amount actually going to individuals — one share is necessarily interest imputed on deposits. Finally, income originating in each industry measures factor earnings for net input; in banking, for example, this is simply the sum of wages and profits.

Other procedures would give somewhat different results. If banking is treated like an ordinary industry, the imputed entries are dropped. Then income originating is −25 for banking and 200 for other industries, and national income, 175.

If banking is to be treated as an aggregate of individuals, property income flows to banking that are creditable to individuals would be treated as if they go directly to individuals. On the assumption that all interest and dividend receipts of banking accrue to individuals, imputed entries would be dropped as well as interest paid by banks. Then income origi-

[6] The illustration raises usual problems in connection with the netting out of positive and negative entries for interest and for dividends in national income tables. Total property income originating in an industry (interest plus dividends plus corporate profits) is properly measured in net form. All-industry totals for each share must also be in net form in order to show amounts returned to individuals. Within an industry, deductions of interest received from interest paid or of dividends received from dividends paid gives a specialized figure that must be carefully interpreted. It shows the return for the net use of the particular factor in an industry or the industry's contribution to the all-industry total for the factor.

The difficulty with such figures arises from the fact that dividend receipts may be transformed into interest payments, or vice versa, and, in extreme cases, the figures for either item may be negative. In the illustration above, for example, net dividends originating in banking are —27 (not especially descriptive of actual banking data), indicating a net transformation of dividends received into interest returned (paid and imputed). The combined figure for net interest and dividends (or profits), however, is meaningful as a measure of net property income originating in the industry. In contrast, gross interest and dividends paid by an industry are realistically descriptive of actual business disbursements, as based upon tax returns to the Bureau of Internal Revenue, and have analytical value in this connection. Consequently, it may be expected that gross dividends and interest paid as well as net figures will be made available to users of national income data.

nating in banking (65) would be calculated as wages (60) plus profits (5). For other industries the total originating would be 200, comprised of wages (95), net interest (65), and profits net of dividends received (40). National income would be 265.

The calculation commonly made under the aggregates-of-individuals assumption gives still different results. It is based upon a distinction between long and short term interest paid by nonintermediary enterprises; interest on long term debt is assumed to go to individuals. In keeping with this assumption, let it be agreed in connection with the example that long term interest accounts for 60 of the 75 interest total paid by other industries. Assume also that interest received by other industries is from government bonds. For the customary computation under the aggregates-of-individuals assumption imputed entries are dropped, as are interest paid on bank deposits and banking receipts of interest and dividends. Then, income originating in banking is 65, comprised of wages (60) and profits (5). Income originating in other industries totals 185, the sum of wages (95), interest (figured as 60 minus 10, or 50), and profits net of dividends received (40). The 250 national income total includes 155 in wages, 45 in profits, and 50 in interest.

It seems evident that the ordinary industry treatment of banking gives an anomalous negative income originating in banking that is thoroughly unacceptable in measuring factor earnings in banking in terms of factors in use in the industry. Also, the relatively low totals for national income and for interest and dividends reflect an unsound canceling of part of this kind of property income. The aggregates treatment based upon the assumption that all property income receipts of banks accrue to individuals gives satisfactory results for banking. It overstates national income, however, through failure to recognize that some of the property income must accrue to business. Furthermore, the property income components of national income simply are not in the form going to individuals, save by assumption.

The treatment of banking currently in vogue as applied to this illustration, including the assumptions concerning long term interest, gives a national income total that reflects the fact that short term interest (15) is only fortuitously related to income imputed on business deposits (40). Also important in connection with this method is the deficiency apparent in the share components of national income since interest and dividends going to banks (banks in effect are assumed to act as aggregates of individuals) are included as such in the interest and dividend components of national income as if these actually went to individuals. Of course, by this method neither interest paid on deposits nor income imputed on deposits is counted in the share compilations.

In a brief statement of the general rationale underlying the proposed treatment of property income flows of banking, note should first be taken of the two basic types of banking activity with which we are concerned: provision of demand (checking) and savings account services, and activities related to the investment of funds. In the first connection, banks provide facilities for accepting deposits and for servicing accounts. In the second, banks may be viewed as depositors' agents, investing deposit funds in order to obtain interest (plus a small amount of dividend) income. Some of this income is passed on to depositors, mainly in the form of interest on savings deposits, but the major portion is retained by banks in order to finance their investment and deposit services. The treatment proposed assumes that all interest and dividend income of banks (but not net rent realizations) accrue to the account of depositors, either in the form of interest on deposits or in the form of income imputed on deposits. This implies that bank profits come from banking operations proper, as distinct from the investment of funds yielding interest and dividend income from other industries.

In using the foregoing formulation, it will be recognized, first, that the distributive shares comprised in the national income total for all industries will include only the income imputed on deposits of individuals. The income imputed on private business deposits will cancel in the all-industry summation. Second, final products will include imputed investment and account services rendered by banks to individuals. Again, imputed services provided by banks in connection with deposits of private business are intermediate products. Finally, all interest and dividend income of banks must be counted in calculating the property income received by banks. The total must include the short term interest which is purposely omitted when banks are treated as aggregates of individuals. Short term interest received by banks comes from noncorporate as well as corporate businesses and also from individuals as such. Interest paid by businesses appears in the income originating tabulations of the many industry groups that borrow from banks. Interest paid by individuals to banks also must appear as part of interest paid in some proper industry, such as the 'private households' component of service.

Since the preceding discussion deals specifically with commercial banking, a word should be added concerning the treatment of mutual savings banks. As depositors and stockholders are identical it is necessary to define imputed income as total interest and dividend receipts minus interest and dividends paid depositors and minus interest paid on capital notes and debentures. The imputed interest, consequently, includes one component that is paralleled on the product side by an imputed service flow and a second component that represents a conversion of retained net earnings of mutual banks to imputed interest. The imputed interest paralleled by services is defined as interest and dividend receipts minus net income before income and excess profits taxes. Net income is, of course, divided among taxes on net income (insignificant), 'interest and dividends' paid, and a remainder representing net undistributed earnings. The component series for imputed interest representing retained net earnings is defined as the remainder of net income after 'interest and dividends' paid but including taxes on net income. By this treatment, income originating in mutual savings banks is equal to compensation of employees, since cash interest and dividends paid and imputed interest are exactly offset by interest and dividend income, and retained net earnings are eliminated.

A brief note should be added concerning the allocation of imputed income originating in banking among individuals, government, and business, and within business among the many industries. Following the basic approach used in measuring imputed income in banking, it is assumed that the apportionment is determined by the distribution of deposits. Obviously, the statistical allocation of imputed income among depositors must involve various assumptions and approximations. It is believed that these do not significantly violate facts. First, mutual savings banks are isolated by assuming that individuals alone supply them with funds. Income imputed in mutual savings banks, then, is allocated entirely to individuals.

Regularly reported data for commercial banks provide a distribution of demand and time deposits between government — federal and state and local — and individuals, partnerships, and corporations. It is assumed that this deposit information based on bank records effectively shows the composition of funds supplied to banks by the two classes of depositors. Allocation of imputed income between the two follows this distribution. In using this deposit pattern as the basis for allocation, the following procedure may be adopted: (1) combine imputed income and interest paid on demand and time deposits; (2) allocate this total according to the distribution of demand and time deposits of the different types of depositor; and (3) from components obtained under (2), deduct interest paid on demand and on time deposits, each distributed according to deposits ownership.

For the further apportionment of income imputed to individuals, partnerships, and corporations, it is necessary to turn to special studies in the field.[7] Without going into details, these studies may be said to supply essential information by which it is possible to allocate the ownership of deposits between individuals and businesses, and within businesses among major corporate and noncorporate types. This information provides the basis for making the primary allocation of imputed income going to individuals, partnerships, and corporations. Again, the total of imputed income and interest paid on deposits for the group would first be allocated among the several depositor types with subsequent deductions of interest paid and service charges, each properly distributed against depositor types. For the finer industrial distributions within major industry divisions, it is necessary to turn to balance sheet and other data, such as are reported by the Bureau of Internal Revenue. Through the use of cash data for industries it is possible to distribute approximately imputed income among corporate industry components

[7] Solomon Shapiro, 'The Distribution of Deposits and Currency in the United States, 1929–1939', *Journal of the American Statistical Association*, Vol. 38, No. 224 (Dec. 1943), pp. 438–44.

Articles on the ownership of deposits in the *Federal Reserve Bulletin*, Aug. 1943, Oct. 1943, May 1944, Nov. 1944, and June 1945.

of the major divisions. It is probably necessary also to carry through an allocation of imputed income to noncorporate business despite difficulties in distinguishing satisfactorily between deposit funds a business man may use for business and for purely personal purposes. Failure to carry out this step would tend to inflate national income by an amount that rightly should be charged to business. This treatment of imputed property income received by noncorporate business differs, of course, from procedures adopted for non-imputed interest and dividends received.

5 Finance, Not Elsewhere Classified

For national income study, the finance industry proper may be divided into (1) banking, (2) security, commodity-exchange, and over-the-counter brokers and dealers, and (3) other finance. The third comprises enterprises such as investment and holding companies of various kinds, long and short term credit agencies, and other miscellaneous financial businesses of relatively minor importance. Investment and holding companies dominate other finance as illustrated by the fact that their interest and dividend receipts accounted in recent years for well over three-quarters of the group's receipts of interest and dividends; most of the remainder is for the credit firms. Nearly 90 percent of total receipts of investment and holding companies is in the form of interest and dividends as against about one-third for the other categories combined. It is this rather heterogeneous financial division that must now be considered with respect to the measurement of property income flows.

Estimation of property income for finance, n.e.c., raises problems essentially similar to those met in banking and, as might be expected, a treatment may be formulated to parallel the computation for banking. Interest and dividend receipts of credit and investment firms may be assumed to reappear as interest paid and profits realized from investment operations plus an element of income imputed on invested funds. Imputed income is calculated as interest and dividend receipts minus interest paid and profits. This imputation presumes a comparable imputation on the product side of the account as if the imputed income, which, by assumption, is paid out, is forthwith used by recipients in purchasing investment and related services from companies making the imputed payments. The treatment is a distinct departure from procedures commonly applied. In the past, the financial activities of the kind under consideration were part of the miscellaneous industry in which the aggregates-of-individuals assumption was not used.

The procedure for dealing with the other finance group may be illustrated by the use of six assumed items. Income imputed

1	Interest received	50
2	Dividends received	80
3	Total property income	130
4	Interest paid	20
5	Net profits, before income & excess profits taxes of 10 & without deduction for dividends received	85
6	Total interest paid & profits	105

on investment company funds is calculated as line 3 minus line 6, or 25. This is also the value of imputed services. If, in addition, compensation of employees is taken to be 15 (the remaining 10 is used for expenses to other industries), income originating equals 15.

Income originating	15
Compensation of employees	15
Interest paid	20
Net profits before taxes	85
Income imputed on investment funds	25
Deductions for property income received	
Interest received	–50
Dividends received	–80

Total income originating is inevitably equal to compensation of employees since property income receipts offset interest paid, net profits, and imputed income. The computation provides a mechanism whereby property income receipts in the form received by financial intermediaries of the other finance group are converted into property income as this accrues to individuals, including the element of imputed income. This is important to the all-industry summation by shares in that the several property income entries — positive and negative — contribute toward putting the net share totals for all industries in the form received by individuals. Furthermore, total income originating is consonant with earnings of factors used in the industry group.

Application of the foregoing formulation is best restricted to the corporate form of organization and to certain mutual companies, such as savings and loan associations, which need not be discussed. In most of the lines of financial activity coming within the other finance group (except security, etc. dealers and brokers), nearly all the business is done by corporations. Only in the small miscellaneous segment of other finance are partnerships and sole proprietorships of even minor importance, accounting for perhaps 10 percent of total receipts and a considerably smaller percentage of interest and dividend receipts. Consequently, it may be assumed for statistical computations that dividend and interest receipts of noncorporate firms in the other finance group accrue as such to individuals. There are no entries for noncorporate business receipts of interest and dividends and, if included in reported figures, the effect of such property income receipts is removed in measuring entrepreneurial income. The imputed income in the case of corporations may be viewed as comprising both imputed dividends and imputed interest. It is probably best, however, to call it all imputed interest; this will keep all the imputed income in the interest category.

Proper allocation of income imputed in other finance is difficult because of lack of information concerning the distribution of ownership among individuals and the numerous industry groups. Amounts going to industry should be treated as property income received (deductions from property earnings wherever received) and only amounts allocated to individuals would enter all-industry totals. But, as very little information regarding ownership is available, it is perhaps best to assume that all imputed income of the other finance group goes to individuals. Overstatement from this assumption would be minor.

Because of its influence on the resulting imputations, it is desirable to review generally the statistical procedures that may be used in estimating imputed income. Were income accounts of other finance enterprises in such form as to isolate accounts for loan and investment activities from accounts for other operations, the several types of corporation included in this division of finance could be treated directly in the indicated manner. But profits, as reported, are for all operations of each company; i.e., returns on loans and investments are combined with realizations from other activities. If the latter are appreciable, the treatment suggested above becomes untenable. This is illustrated by the rather extreme case in which interest and dividends received are smaller than interest paid plus profits, resulting in a negative imputed income figure. It becomes necessary, consequently, to effect some statistical isolation of loan and investment activities so that the special treatment is applied to property income flows alone.

Perhaps the most promising approach is to use information for a specific type of financial company in which operations are substantially confined to loan or investment activities. If data are available, it is possible to calculate a relation between imputed income (interest and dividends received minus interest paid and profits) and interest and dividend receipts that can be applied to interest and dividend receipts of the 'other finance' group generally. This, of course, assumes that loan and investment activities proper of all companies are similar to the operations of the particular subgroup, at least with respect to property income calculation.

Investment trust companies of the management type probably offer the most acceptable approximation to the requirements noted above. Not only is the necessary minimum of data available, so that it is possible to carry out the computations, but operations of these companies also are substantially confined to investment activities. Further, these companies form a subgroup of the broad investment trust and holding company group that accounts for a major share of the property income received in other finance.

6 Security and Commodity Exchange Brokers and Dealers

This group may be treated like ordinary industries as far as property income receipts are concerned, since enterprises in it do not act in appreciable degree as financial intermediaries with respect to property income flows.

It may be noted in passing that current revisions of data by the Department of Commerce will treat brokers and dealers like ordinary industries in respect of capital gains and losses. The change will remove from profits of this industry, as computed in the past, elements that are due to brokers' gains or losses in trading on their own account. Profits of this kind have so far been included in national income on the grounds that 'trading on own account' was an integral part of the brokerage business, the trading profits being considered part of factor income from 'productive' services.

7 Insurance Carriers

In dealing with property income flows of insurance carriers, it is desirable from the outset to distinguish life insurance companies from carriers of other types of insurance. The former are required to set aside and accumulate substantial legal reserves against the fulfilment of their contracts which normally span several years and typically call for payment of sizable sums. In contrast, other types of insurance carrier (fire, casualty, marine, etc.) ordinarily issue term insurance against possible loss during a relatively short period, such as a year or a very few years. Accumulation of reserves is not an inherent feature of nonlife insurance. This distinction underlies the different treatment of the two groups of insurance carriers as developed below.

Life insurance carriers. A much simplified statement of the operations of life insurance carriers would show that income is derived from two main sources: premiums paid by policyholders and property income in the form of interest, dividends, and rents. This neglects, purposely, the relatively small premium income from nonlife policies. Largest expenditures are for death losses, matured endowments, annuities, dividends, and surrendered policies. Other expenditures account for about one-third of the total. The excess of premium and property income over payments to policyholders and other expenditures goes very largely into increased reserves, becoming in effect savings of individuals. The fact that most life insurance carriers are mutuals provides support for viewing increases in reserves as savings of policyholder individuals rather than savings of corporations.

It is proposed to treat life insurance carriers so that property income receipts from the investment of funds appear as income imputed to policyholders. All property income is assumed to accrue to policyholders and the amount of imputed income is equal to property income receipts. In the measurement of property income, interest and dividends may be taken in gross form as received but rents received must be put on a net basis. The treatment accorded interest and dividends is analogous to that suggested for other financial intermediaries. Net rents, however, are a special case. Net rent realizations of life insurance carriers originating in the industry are converted into income imputed to policyholders. This is essentially similar to the manner in which realizations upon rental of real estate owned by a manufacturing corporation, for example, automatically appear in the profits of the corporation. In life insurance, the net rent takes the form of imputed income.

By the proposed procedure, the distributive share components of income originating in life insurance carriers include an item of imputed income 'paid' that is equal to receipts of interest and dividends plus net rents realized. Total income originating in the industry is numerically equal to compensation of employees, profits of nonmutual corporations,[8] and net rent — imputed income paid being exactly offset by interest and dividends received (which are deducted as property income receipts) and net rents (which originate in the life insurance industry). The compilation for income originating may be summarized by illustrative numerical magnitudes.

Income originating	190
Compensation of employees	150
Corporate profits (measured as dividends paid)	20
Income imputed to policyholders *	1,050
Deductions for property income received	
Interest	–1,000
Dividends	–30

* Includes 20 arising from net rent realizations resulting, for example, from contract rental receipts of 60 minus property management costs of 40.

It has been common practice to assume that dividends and long term interest received by life insurance carriers go, as such, to individuals via insurance companies as aggregates of individuals. This treatment gives a total income originating in life insurance carriers that is lower than the total resulting from the proposed procedure by the amount of imputed income attributable to net rent. Presumably, this increment is found also in the national income total since by the prior method net rents included only those going to individuals (total rents minus rents going to corporations, and life insurance carriers included with ordinary corporate businesses). In addition, the all-industry aggregates for property income shares showing amounts leaving the economic system are modified by the removal of dividend

[8] As implied in the discussion of savings, the nature of available data makes it necessary to define corporate profits of nonmutual corporations in the life insurance carrier division as dividends paid to stockholders. To the extent that there are savings accruing to stockholders of nonmutual companies, national income is understated; the matter is relatively unimportant, however, since most life insurance carriers are mutuals.

and interest receipts of life insurance carriers and the substitution of an imputed income item, and by a more complete accounting for the short term interest flow. In both procedures it is assumed that policyholders are individuals, so that all imputed income accrues to individuals, none to business. This last assumption conflicts with reality in a minor way, i.e., to the extent that businesses may choose to protect themselves by taking out life insurance on individuals.

The proposed treatment requires the inclusion in consumption expenditures of an allowance for company expenses in connection with financial operations through which interest, dividends, and net rents are realized. Expenses in connection with net rents will be only the minor expenses in addition to the usual costs of real estate rental operations that are charged against gross rentals in obtaining net rents. Consumer expenditures on life insurance then are defined as total operating expenses (excluding payments to policyholders) minus (1) expenses allocated to accident and health insurance and (2) costs of real estate operations as such. An additional point deserves mention, namely, that interest paid by individuals on borrowings from life insurance carriers must appear as interest paid in some proper industry such as the private households group within service.

Carriers of insurance other than life. Dealing in fire, marine, automobile, casualty, and related types of risk, the carriers of insurance other than life are predominantly stock companies that offer term insurance against specified risks in return for stated premium payments. Balance sheets of these companies as a group show that capital and net surplus account for nearly half of the liability total. Unearned premiums, unpaid losses, and other liabilities are in diminishing order of importance, constituting, respectively, about one-fourth, one-sixth, and one-tenth of total liabilities. On the asset side, we find that roughly three-fourths of the total is invested in bonds, stocks, and mortgages, and a minor amount in real estate. The remaining portion is made up very largely of cash, uncollected premiums, and agents' balances. Interest and dividend income is about $150 million a year.

On the basis of the foregoing, it might be argued that policyholders typically maintain substantial balances in nonlife insurance carriers (unearned premiums less unpaid premiums) and that these are in effect invested by the carriers in income-producing assets. Income from the investment of prepaid insurance might be imputed to policyholders in the belief that premiums are lower by the amount of earnings on prepaid insurance funds. An amount well under $50 million might be imputed on this basis. In comparison with the ordinary industry treatment commonly applied to the group,[9] the effect would be to increase income originating in the industry. This would be accomplished very largely by shifting relatively minor amounts of property income from other industries to nonlife insurance carriers. Since most of the imputed income would accrue to business (including home owners) rather than to individuals, the national income total would be affected little.

Despite possible merits of the refinement, it seems preferable to use the ordinary property income procedure in the case of insurance carriers other than life. It is much simpler and the amounts involved are relatively small. Netting out of property income received from factor earnings does, of course, give rise to negative net interest figures for the industry and also negative property income (profits plus interest paid minus interest and dividends received). But the amounts involved are relatively small and, as noted above, national income is substantially the same by both procedures.

COMMENT

SOLOMON FABRICANT

All who have tried to make international comparisons of economic or social statistics have learned to fear differences in concept and terminology. They would wish to sing hymns of praise to the three government agencies whose agreement on so many points is embodied in Mr. Denison's paper. Although I would join in that chorus, I shall not now take the time for congratulations. The very importance of such an agreement makes it imperative that it be reviewed carefully by this Conference,

[9] The treatment applied until now by the Department of Commerce made a special case of nonlife mutual companies. Dividends received by mutual companies in insurance carriers other than life went to individuals on an aggregates assumption. Consequently, there was no deduction for them (as estimated).