PUBLIC FINANCE AND REGIONAL ACCOUNTS*

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This paper discusses the problems that arise in the regional allocation of public sector accounts. These problems arise mainly in connection with the regional allocation of government expenditures on a governing rather than a procurement basis, and in the derivation of a meaningful surplus or deficit. The latter in turn requires an examination of the real geographic incidence of government revenues—to avoid, for instance, the assignment of the whole tobacco tax to Virginia and North Carolina. The use of a procurement basis for government product and the real geographic distribution of direct tax incidence for government revenue would produce a more complete and meaningful regional surplus or deficit measure, and gross regional products will not be as subject to spurious inter-regional variation.

The preparation of national social accounts for subnational areas has been the subject of considerable interest but very modest accomplishment. The major design problems will be developed by considering subnational versions of the five Summary National Income and Product Accounts prepared by the United States federal government.[1] Such regional summary accounts constructed with national definitions, treating each region of the U.S. as a nation, will be referred to as counterpart accounts. The criterion for judging the successful design of regional accounts on any basis will be the extent to which they could meaningfully include the transactions recorded at the national level. It will be demonstrated that counterpart accounts would be quite incomplete because of difficulties with the public sector, but that a method of handling that sector is possible which would allow meaningful summary accounts to be constructed.

The double entry accounting scheme of the five summary accounts is indicated by the following matrix except for certain contra account treatments.

	Charges against GNP	Personal taxes, outlays and savings	Government expenditures and surplus	Receipts from foreigners	Gross investment
Gross national product					
Personal income					
Government receipts					
Payments to foreigners					
Gross saving					

The row captions describe the contents of the output (credit) side of the five summary accounts and the corresponding columns refer to the input (debit) side.

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Balancing residuals are computed for all but the gross savings and investment account. An entry in row 1—column 3, designated by (1–3), would indicate a government expenditure that was part of the government product component of GNP and also would be an explicit component in the calculation of the government surplus or deficit on an income and product accounts basis. The components of the government account follow, indexed by the row or column number of the corresponding double entry account.

Government expenditures and surplus	Government receipts
Purchases of goods and services (1)	Personal tax and nontax payments (2)
Transfer payments to persons (2)	Corporate profits tax liability (1)
Transfer payments to foreign governments (4)	Indirect business tax and nontax liability (1)
Net interest paid (2)	Contributions for social insurance:
Subsidies less current surplus of government enterprises (1)	Employer (1)
Surplus or deficit (−) on income and product accounts (5)	Personal (2)

The major problem in constructing counterpart summary accounts would be the regional allocation of government GNP expenditures on a governing rather than a procurement basis. That distinction has been made nationally by the exclusion from the government product component (1–3) of nonmilitary in-kind transfer payments to foreign governments and their inclusion in exports (1–4)[2]. Any argument for counterpart accounting must assume that expenditures for governing the nation could be meaningfully disaggregated into amounts for governing the regional parts which would equal the national total. Although this is possible for many government activities, such quantitatively important functions as national defense and space defy any such additive disaggregation which would be useful in regional accounting[3]. This is because there are too many externalities involved in the provision of defense and space type services. The lack of complete regional counterparts to the national government product component thereby prevents the compilation of complete regional counterparts to GNP which is the output side of what is referred to as the Income and Product Account, but not for charges against GNP.

Although regional counterparts to the receipts side of the national government account exist, the government product difficulty is so quantitatively important as to make the computation of a counterpart surplus (5–3) or deficit (3–5) for the account rather meaningless. That government residual and net foreign investment (4–5) will also be incomplete because of the lack of a conceptual basis by which to allocate regionally the net U.S. government to foreign government transfer item (4–3). Finally, gross saving would not equal investment because of the imbalance in the Income and Product Account. The only counterpart account that emerges complete is Personal Income and Outlay, the income side of which is estimated on a regional basis by the Office of Business Economics, and it can be improved upon for use in context with other summary accounts.

Since regional counterpart summary accounts would be a grossly incomplete accounting for the public sector, the question is, can a more complete set be constructed on any other basis? The key lies in attaining a meaningful surplus or deficit measure in the government account. Most of the government product difficulty could be eliminated if government expenditures were redefined to encompass all direct purchases of regional output by governments with regional tax jurisdiction including purchases for nonmilitary in-kind transfers to foreign governments by the federal government.This procurement solution is not complete, however, because the only way direct federal government imports could be regionally allocated to the U.S. would be on a governing basis and imports for such things as defense and space, for example, would still defy meaningful regional allocation.

The receipts side of the government account is not very satisfactory, though complete, because the national practice is to value GNP components at purchasers' prices, which distributes most indirect taxes according to where the vendor produced his output. The most bizarre result from use of this convention at the regional level would be the inclusion of all federal excise taxes on tobacco products as an increment to the gross regional products of North Carolina and Virginia since tax stamps are affixed at their factories. Some other allocation criterion is needed because such accounting is clearly inappropriate as a measure of regional production.[4] An allocation of government revenue according to the real geographic distribution of the tax base of the person or party directly taxed would be more relevant to the location concern of regional analysis. A difficulty with the excise as well as sales taxes is that it is not obvious who is directly taxed. The most reasonable general solution is to regard these taxes as shifted forward. This can be effected in compiling accounts by recording sales to U.S. buyers less such taxes with tax payments of the buyers increased by their amount. The special category of excise taxes on liquor and tobacco could be allocated largely as personal taxes on an estimated consumption basis. Most direct international exports are not subjected to excise or sales taxes; any such taxes on them, however, would have to be shown by the region of the domestic seller. The indirect tax of import duties would be shown by the region to which the import would be assigned as an input in the branch accounting of a business importer and by residence for imports by consumers.

The income taxes of multiregional corporations are usually cited as one of the most troublesome government revenues to allocate regionally.[5] Solutions typically considered are region of collection or region of real incidence. The former criterion is irrelevant to regional analysis and the latter, though extremely relevant, is not performed in social accounting because it requires considerably more than accounting techniques. The determination of the real geographic distribution of the direct tax base for the profit of multiregional corporations is readily made by distinguishing between factor income produced and received in a region. The tax base of gross operating profits is produced in the region where the output is produced and would be measured by a complete form of branch accounting. The main conceptual problem in such an accounting would be the regional allocation of interest expense as a determinant of regional profit produced[6]. A complete allocation of profit taxes would require, in addition, the geographic assignment of nonoperating income including capital gains and losses. Income taxes paid to a particular government jurisdiction could then be regionally prorated according to the geographical dispersal of the tax base.

Allocations of employer and employee contributions for social insurance by the suggested criterion are quite simple. Employer contributions are shown by place of work because they are a charge against the value of product produced in a region (3–1) while employee contributions are shown by the residence of employees because they are included in the personal account (3–2) which relates to residents of a region. Additional regional entries to the personal account structure could be inserted to split personal tax and nontax payments of residents to U.S. governments into those with and without regional tax jurisdiction. Correspondingly, the government account for a region would identify receipts from non-residents and both the in and out personal tax payments would appear in the foreign account, (3–4) and (4–2) respectively.

The procurement basis for the government product component and the real geographic distribution of direct tax incidence for government revenue then produces a more complete and meaningful regional deficit or surplus measure. The government surplus or deficit would exclude net U.S. government nonmilitary cash transfers to foreign governments and government expenditures for certain imports. Net foreign investment, which would include transactions with other regions of the U.S., could then be computed with the same exclusions as for the government account and would relate entirely to the private sector except for the inclusion of some government imports. Gross regional product and charges against it will be equal because the omission of some government imports will affect only the component product distribution. Gross regional products will not be as subject to spurious interregional comparisons because most sales and a substantial portion of excise taxes would be included as a nonaugmentive component in personal accounts. Regional gross saving and investment again will exhibit their accounting identity but their sum over the U.S. would be larger than that for the nation because of the noted omissions of some net foreign expenditures by government.

The data requirements for implementation of regional summary income and product accounts on a procurement-direct incidence basis are formidable but not overwhelming. The rather rough and ready empirical methods employed by the Office of Business Economics in its regional work certainly would make those requirements more tractable[7]. Census regions would seem the most promising candidates for a trial run to determine the empirical feasibility of furnishing summary accounts as a contribution by the government to more comprehensive regional analysis.

References

1. The latest national summary accounts are in: U.S. Department of Commerce, Office of Business Economics, Table A, *Survey of Current Business*, Vol. 48, No. 7, Washington: U.S. Government Printing Office, July, 1968.
2. ——, ——, "The National Income and Product Accounts of the United States: Revised Estimates, 1929–64," *Survey of Current Business*, Vol. 45, No. 8, Washington: U.S. Government Printing Office, August, 1965, p. 10.
3. Concurring opinions are expressed in Hochwald, W. "Conceptual Issues of Regional

Income Estimation," in National Bureau of Economic Research, *Studies in Income and Wealth: Regional Income*, Vol. 21, Princeton University Press, 1957, p. 21, and Burkhead, J. "Public Finance as an Integral Part of Regional Accounts," in Werner Hirsch (ed), *Elements of Regional Accounts*, Baltimore: Johns Hopkins Press, 1964, p. 76. Expenditures for fixed investment in such programs could be geographically allocated by location, however, and such a procedure would be consistent with the preparation of regional wealth statements.

4. One response to this has been to omit such taxes in compiling the Income and Product account. See Leven, C. L., "Regional Income and Product Accounts: Construction and Applications," in Werner Hochwald (ed), *Design of Regional Accounts*, Baltimore: Johns Hopkins Press, 1961, pp. 153–54.
5. See Ruggles, R. and N. D. Ruggles, "Regional Breakdowns of National Accounts," in Werner Hochwald (ed.), ibid, p. 136.
6. The peculiar quality of interest expense is evident in accounting where it is generally regarded as an operating expense but is excluded from the current surplus (dirty surplus) measurement of net income. See Horwitz, R. M. and L. E. Plachta, *Self Correcting Problems in Introductory Accounting*, Boston: Allyn and Bacon, Inc., 1966, pp. 37–8.
7. See Terry, E. F., "Regional Income Account Estimates," in Werner Hirsch (ed.), op. cit pp. 25–34. A subsequent improvement relevant to a major criticism in the preceding article. is documented in: U.S. Department of Commerce, Office of Business Economics, "Total and Per Capita Personal Income, 1965," *Survey of Current Business*, Vol. 46, No. 4, Washington: U.S. Government Printing Office, April, 1966, p. 13.