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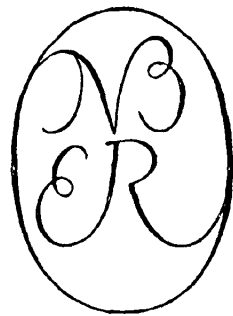
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*MEASURING TRANSACTIONS  
BETWEEN WORLD AREAS*

*BY HERBERT B. WOOLLEY*



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*MEASURING TRANSACTIONS  
BETWEEN WORLD AREAS*

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*(Resolution adopted October 25, 1926, as revised February 6, 1933, and February 24, 1941)*

*To Peggy for patience*



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## PREFACE

The origins of this study go back to Walrasian general equilibrium theory, the *Tableau Economique* of Quesnay, and the circular flow of Say. Like analyses of money flows and input-output studies, it explores the interrelations between parts of a whole—in this case, the whole world economy. It is best described as a kind of input-output analysis, but between countries instead of industries and for all types of transactions not simply current production; for an earlier generation it was the other way round. Leontief himself, in presenting his input-output analysis, described it as like an international trade table, but between industries within a country rather than between countries.<sup>1</sup>

Analyses of trade between countries have long been made, and when the ideas for the present study were forming, *The Network of World Trade* study of the League of Nations and a trade matrix analysis by Frisch were the subject of current interest. My interest in working on trade and payments relations between world areas crystallized in the early postwar years in the course of my work at the Department of State on the international trade and payments aspects of the U.S. foreign aid program. After making a series of efforts to relate the international payments prospects of the European countries to the prospects for world trade and payments generally, I came to the conclusion that a methodological study covering a period of years was needed.

Many officials of the U.S. government, foreign governments, and international agencies aided in preparing the records, but a prime debt is owed to the Balance of Payments Division of the International Monetary Fund, which made space and files available and spent much time discussing methodology and

details of particular accounts. A conference of more than a dozen specialists in trade and payments advised on the project; and particularly helpful comments were received from Walther Lederer of the Commerce Department and Poul Høst-Madsen of the International Monetary Fund on a preliminary progress report given to a Universities-National Bureau Conference on International Economics.

The National Bureau's Director of Research, Solomon Fabricant, provided the continuing support, interest, general guidance, and stimulation so necessary for a prolonged project. The Associate Director of Research, Hal B. Lary, brought to bear the fresh perspective of an informed outsider. I wish to thank the Directors' reading committee: Lester V. Chandler, Gottfried Haberler, and Willard L. Thorp. I also benefited from the useful comments of Ilse Mintz, Robert Lipsey, and Zvi Griliches, who served on the Bureau's staff reading committee.

Besides the collaborators on the project—Cornelius Dwyer, Herman Karreman, Robert Lichtenberg, and Walther Michael—the work depended heavily upon the often tedious labors of many research assistants; Deborah Schoen Becker, Dianne Silverman, and the late Carmellah Moneta made particularly noteworthy contributions. Virginia Crowley, Bureau librarian, helped greatly in securing specialized materials from all over the world. Louise Smith was for a number of years secretary for the project. I am grateful to Rosa Lechner for work on the preliminary charts and to H. I. Forman for drawing the final charts. The book has gained greatly in readability and brevity from editing by Marie-Christine Culbert.

Finally, I wish to express my appreciation for the freedom which the Bureau has provided me to develop a set of ideas and a program of research circumscribed only by the available resources.

May 1965

H. B. W.

<sup>1</sup> Wassily W. Leontief, *The Structure of American Economy, 1919–1929*, Cambridge, Mass., 1941, pp. 4 and 12.





## FOREWORD

During the years following the Second World War widespread concern with foreign exchange problems and currency inconvertibility prompted many countries to develop their international payments accounts with some regional elaboration, and the International Monetary Fund sought in its *Balance of Payments Manual* to set guidelines for reporting transactions regionally. The opportunity therefore existed for someone to try to bring together the payments accounts of all countries and to fit them into a comprehensive, interlocking scheme showing trade and payments flows between world areas.

This was the task Herbert B. Woolley set for himself in a study begun at the National Bureau in 1953 with the financial support of the Ford Foundation. The results of Woolley's investigation are given here. (As mentioned elsewhere in this book, preliminary reports on parts of the study appeared in 1957, 1958, 1959, and 1961.) This book presents the first detailed matrixes ever made of transactions (other than merchandise trade) between major world areas and provides essential background on the problems encountered in moving from the balance of payments estimates of individual countries to a world system of regionally integrated accounts. This experimental work has been performed for each of the years 1950 to 1954 and covers the following main types of transactions—merchandise, services, unilateral transfers, capital and gold movements, and multilateral settlements. The study describes the statistical methods used to construct the record, evaluates the limitations of the data for descriptive and analytic uses, and considers the implications of the results for the concept and measurement of multilateral settlements.

The significance of this investigation is perhaps even greater now than when it was started, as indicated most recently by the Review Committee for Balance of Payments Statistics in its report to the Bureau of the Budget. "The importance of viewing

balance of payments problems in a world context," the report states, "is becoming more widely recognized." Two reasons may be distinguished for this growing interest in the regional dimensions of international payments, one concerning policy formation and the other the underlying statistical basis. On the first, the Review Committee's report observes, among other things, that:

The initial impact of any measures taken by the United States to strengthen its balance of payments will not necessarily fall entirely on the surplus countries, but will be felt most quickly in countries with which the United States has the closest relations in trade and investment. Some of these may be countries whose own payments positions may be precarious. Similarly, measures taken in other countries to strengthen their balances of payments may have an adverse effect on the U.S. balance of payments.

With respect to the compilation of the statistics, the Review Committee stresses the advantages of cooperation between national statistical authorities and adds:

It might be supposed that some balance of payments transactions of a given country could be measured more reliably on the basis of the statistical information on those same transactions as compiled in other countries. . . .

It is [however] extraordinarily difficult to judge the comparative reliability of estimates for purportedly the same items which are prepared in different countries according to different statistical approaches and methods. . . .

International reconciliation and mutual use of the data collected by different countries are difficult, time consuming, and often frustrating. . . .

Woolley's project was a pioneering effort to face up to these problems, and his report will help in evaluating both the cost and the usefulness of devising solutions. One basic and simple point that emerges is that successful international collaboration in this area requires that the various national statistical of-

fices be willing to prepare their estimates in appropriate detail by regions and by major countries.

Even if this elementary condition is, in time, more adequately met than at present, the experience gained in executing this project suggests that the preparation of regionally integrated accounts on a regular and systematic basis is likely to prove costly in terms of the skilled manpower required and likely also to yield current statistics only with a delay determined by the most laggard among the reporting countries.

Another difficulty highlighted by this study is that the consolidated payments network will, at best, still be subject to the well-known "errors and omissions" which beset national balance of payments statisticians. For this reason, and perhaps also on conceptual grounds, there may be questions concerning the meaning of Woolley's residual calculation of net multilateral settlements. Without diminishing the importance of multilateralism as an objective of policy, one may conclude that the statistical expression of

this concept in the form of data on multilateral settlements encounters greater difficulties and presents more ambiguous results than seems to have been generally supposed.

Woolley's study explores these and related questions more systematically, I believe, than anything hitherto available and provides comprehensive statistics on the network of international payments where previously scholars have had to work only with very partial data and abstract models. It is hoped that, in addition, this report will contribute to an understanding of the possibilities and the problems of developing better information on the pattern of international economic and financial relations and thereby ultimately help also to strengthen the basis for policy formation in this area.

SOLOMON FABRICANT  
*Director of Research*

*May 1965*

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