

it by \$6.3 to \$25 billion.³ The compensating rise in nonmilitary demand was assumed, on the other hand, to be represented by a proportional across-the-board increase in all kinds of nonmilitary final deliveries. Its total magnitude is chosen deliberately with the view of maintaining the total level of employment, or rather the combined wage and salary bill of all industries, at its original—that is, the actually observed—1958 level.

Had the military shopping list contained the same goods and in the same proportions as the civilian, each million dollars' worth of additional nonmilitary demand could reemploy the same number of hands and heads—commanding the same amount of wages and salaries—as would have been released by each million dollars' worth of military budget cut. However, the military product mix is very different from the civilian. A comparison of the results of two auxiliary input-output computations has shown that in 1958 the total wages and salaries paid for all the labor engaged directly and indirectly in production of one million dollars' worth of goods and services combined in the proportion demanded by the military are some 21 percent larger than wages and salaries paid for labor inputs required for production of \$1 million worth of outputs delivered in amounts reflecting the average product mix of all nonmilitary final users.

Thus, it would take \$7.6 billion of additional civilian demand to compensate the cancellation of \$6.3 billion worth of military spending. Nonmilitary final demand, as defined for this study, amounted in 1958 to \$418 billion.³ Stated in percentage terms, the shift in the economic impact as described below combines a 20-percent cut in military purchases with a 1.8 percent increase in the amount of goods and services absorbed by each of the two categories of final civilian users.

With the total labor input and wage bill remaining constant, a 1.8 percent increase in the amount of all goods and services allocated to private consumption can be described as a proportional increase in all consumption coefficients. Accordingly, the column of technical coefficients used in the last stage of the multiregional input-output computations to describe the input requirements of households was obtained by raising by 1.8 percent the consumption coefficients derived from the 1958 U.S. input-output table.

A translation of the theoretical scheme described above into concise mathematical language is presented below. A reader not interested in details of computational procedure can skip part II and proceed directly to part III containing a summary of the principal conclusions of this study.

II. MATHEMATICAL FORMULATION OF A LINEAR MULTIREGIONAL INPUT-OUTPUT SYSTEM⁴

1. NOTATION

The multiregional economy described below consists of (n) national and $(l-1)$ local industries. When households is treated as an endogenous sector the total number of local sectors is (l) . The locational distribution of all inputs and outputs is specified in terms of (r) distinct regions.

⁴ The first—materially different, but formally similar to the present—version of that system was presented in Wassily Leontief (Ed.), *Studies in the Structure of the American Economy*, (Oxford University Press: New York, 1953), ch. 4.