

SOME IMPLICATIONS OF THE ECONOMIC IMPACT OF DISARMAMENT ON THE STRUCTURE OF AMERICAN INDUSTRY*

I. INTRODUCTION

A large proportion of our resources are devoted to the production of intermediate products which are incorporated in goods and services delivered to final demand. With given technology and prices of inputs, the character of final products will determine the composition of industrial output. If the demand for final goods is varied, then the composition of industrial output may be substantially altered. Specifically, the substitution of private or nondefense government spending for military hard goods purchases is likely to require a substantial reallocation of industrial resources, not only in terms of final goods, but also in terms of intermediate materials, supplies and components.

To investigate some of the major structural problems which might arise from shifts in defense expenditures to either the private sector or to other public nondefense sectors, an input-output model was implemented specifying three alternative full-employment patterns of end product deliveries for the year 1970. The model constructed was static, open on consumption with investment and government purchases stipulated as first order input requirements. The structural matrix consisted of an enumeration of 66 processing sectors derived from the Bureau of Labor Statistics 192 order Emergency Mobilization Model. The model is similar to the Leontief-Hoffenberg model, and the study is an extension of their basic research on disarmament reported in *Scientific American*.¹

The end product of the Leontief-Hoffenberg study is a 57 by 8 matrix whose elements are ratios permitting relatively easy computations of gains and losses in output and employment through scalar multiplication. The 57 rows in the matrix represent an exhaustive enumeration of the economy's industrial processing sectors and the eight columns identify major military and nonmilitary final demand components. The ratios were derived after computing the direct and indirect requirements of each i th processing sector to each j th demand component necessary to support the level and composition of final demand for the year 1958. Each ij th total requirement was proportioned to the corresponding j th sum of final demand (direct requirements). As such each ratio specifies the direct and indirect requirements of the i th industry to the j th demand component necessary to support \$1 million worth of final demand by the j th category of demand.

Net changes in output by processing sector may be established for any magnitude hypothesized by shifting final demand from military

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¹ Wassily W. Leontief and Marvin Hoffenberg, "The Economic Effects of Disarmament," *Scientific American*, vol. 204, No. 4 (April 1961), pp. 47-55.