

California - Arizona Economic Interdependence and
Their Water Use Patterns

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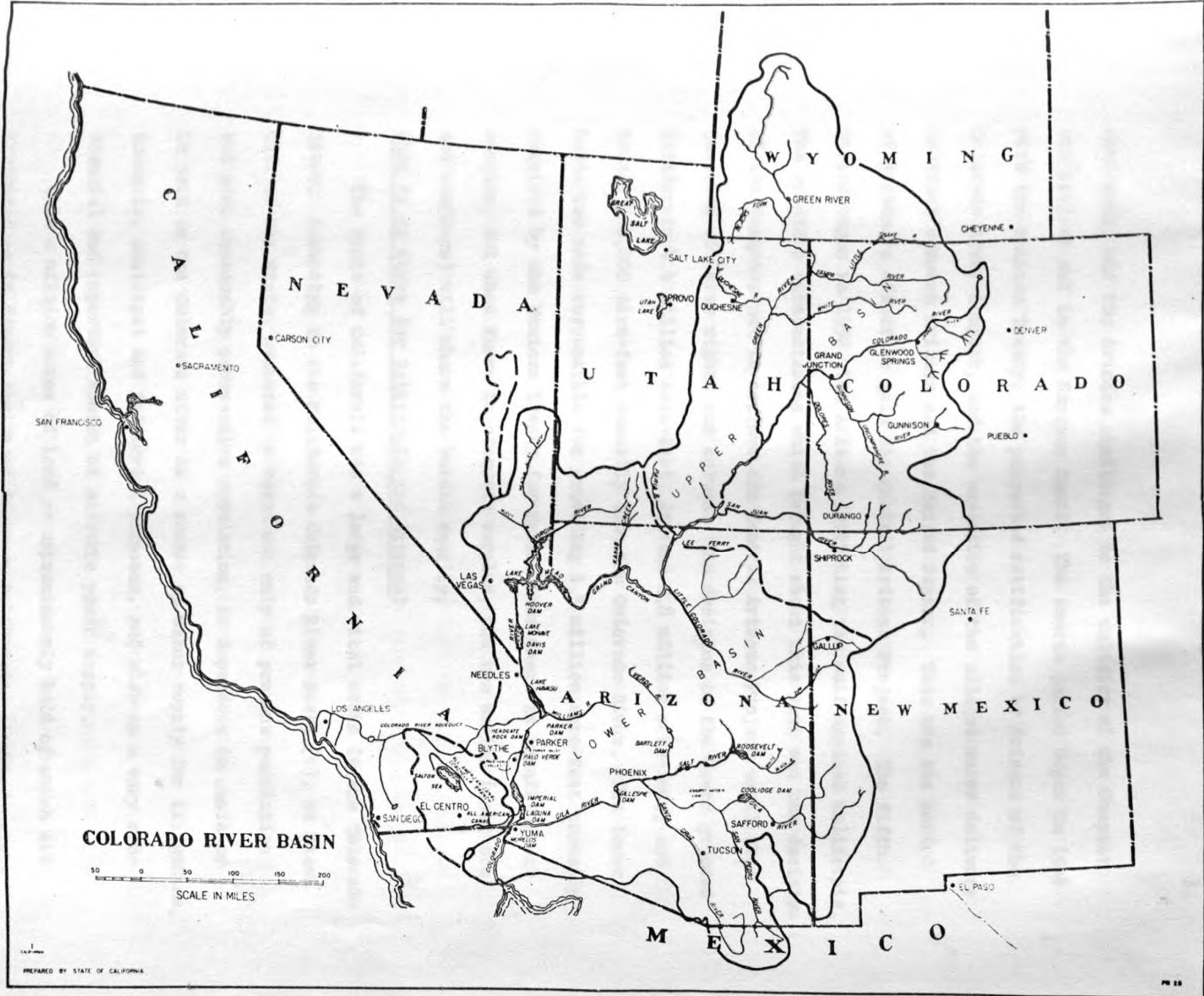
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I. INTRODUCTION

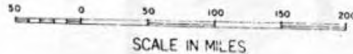
The current conflict between California and Arizona over the joint use of the Colorado River water has precipitated widespread discussion and speculation as to the probable effects on development and growth of the respective state economies. However, before we consider the "stakes" in this conflict it is necessary to place the problem in perspective with respect to its geographic setting and historical entanglement.

The natural drainage of the Colorado River and its tributaries in Colorado, Wyoming, Utah, New Mexico, Nevada, Arizona, California and the Republic of Mexico is shown in the accompanying map. The drainage basin encompasses an area approximating 242,000 square miles in the United States which amounts to about one-tenth of the continental United States exclusive of Alaska. Throughout most of the Colorado River Basin, diversion is essential to any type of agriculture as well as human habitation.

The Colorado River controversy has been in the Supreme Court of the United States several times since 1930. The history of this deep-rooted controversy may be divided into five parts [75, pp. 11-21; 3; 50]. In the first period the signing of the Colorado River Compact by the seven Colorado basin states and the United States was consummated in 1922. The second period involves the proclamation by the President of the United States making effective the Boulder Canyon Project Act in 1929. The third period, 1930-1944, was the period of construction of the Boulder Canyon Project, the execution of the water delivery



COLORADO RIVER BASIN



contracts, and the Arizona challenges to the validity of the Compact and project act in the Supreme Court. The fourth period began in 1944 with the Mexican Treaty, the purported ratification by Arizona of the Colorado River Compact, and the execution of the alleged water delivery contract between Arizona and the United States. This was the period of Arizona's effort to gain the Central Arizona Project. The fifth period began in 1952 with Arizona initiating the suit against California. The specific circumstances which brought about this suit was the decision of the Congress not to approve the Central Arizona Project until the question of water rights was solved. The decision of the Court granted California 4.4 million acre-feet, Arizona 2.8 million acre-feet, and Nevada 300,000 acre-feet annually from the Colorado River. The lower basin was made responsible for providing 1.5 million acre-feet annually required by the Mexican Treaty for Mexico when there is insufficient surplus, but when there is adequate surplus, the two basins (northern and southern) will share the burden equally.

What is at Stake for California and Arizona?

The state of California has a large and vital stake in the Colorado River. According to the California Colorado River Board [4], at least half of the State, measured in terms not only of present population but also reasonably prospective population, is dependent in whole or in part on the Colorado River as a source of water supply for irrigation, domestic, municipal and industrial purposes, and also as a very substantial and important source of electric power supply.

Over a million acres of land -- approximately half of which are irrigated -- in desert region of Southern California, situated mainly

in the Palo Verde, Imperial and Coachella Valleys, are dependent almost entirely upon the Colorado River. The irrigation of these lands require in excess of a million acre-feet annually of the Colorado River water. The metropolitan areas of Southern California embracing a population of more than 7.5 million are also dependent upon the Colorado River.

Lofting and McGahey [35] state that the mean seasonal runoff of streams in California, in addition to the rights in the Colorado River water, is sufficient to meet the ultimate water requirements of all areas of the State. However, the detailed runoff pattern reveals that over 72 percent of the water is available north of the line drawn roughly through Sacramento, whereas 77 percent of the present water requirements and 80 percent of the forecasted 1970 requirements are found south of this line. Thus it can be seen that California's interest in the Colorado River is not without a cause.

Arizona is the principal area of water deficiency in the Pacific Southwest. According to Gookin [21, pp. 131-133] there is no area in the nation where water is so important to the economy, and there is no area in the nation where the water problems are as serious as in Central Arizona. The author reminds us [op. cit., p. 131] of the saying that "Arizona grows where water flows." Development in Arizona has always followed closely upon the development of the water resources of the State. Ground water levels are declining at an alarming rate of about 10 feet per year so that the pumpage of underground water have gradually reached the point where it is exceedingly costly to pump the water to the surface. The water crisis in Arizona can best be understood from the wording of Mann in his book The Politics of Water in Arizona. He

states that water is literally being "mined" and also refers to water resource in Arizona as "the most precious resource, the sine qua non for life on the desert..." [37, op. cit., p. 257]. The problems of increasing water costs due to falling water tables, declining agricultural production, and others have also been emphasized by Tijoriwala, Martin, and Bower [51, pp. 60-62]. These authors report that Arizona is the seventh largest water-using state on a per capita basis and that within Arizona the largest water users are the agricultural crop sectors which in 1958 accounted for about 90 percent of total water use. Accordingly, this indicates why Arizona has been so interested in the Colorado River Controversy, especially in light of current approval of the Central Arizona Project.

Already, the boom on Arizona's desert is reflecting deep concern over the outlook for water in the immediate future. Growth elsewhere in the Colorado basin will be limited in the years ahead if water is not found to supplement water available from the Colorado. The seven states with land in the Colorado River basin draw water from the river and its tributaries. These states are Wyoming, Colorado, New Mexico, Utah, Arizona, Nevada, and California. Now with the end of the Colorado River's water in sight, these seven states want to tap the Columbia River for extra supplies. This plan has brought the four Northwestern states -- Washington, Oregon, Idaho, and Montana -- into the fight over the Colorado River. Thus, all eleven western states now have a vital stake in the bill that would set in motion final development of the Colorado's waters. A new effort to win approval for the plan began on May 9, 1966, [74, pp. 67-70], with hearings before the House

Subcommittee on Irrigation and Reclamation. The existing promises to water users along the Colorado add up to about 17.5 million acre-feet annually. Average flow of the river is only about 13 million acre-feet. Thus, a yearly deficit of 4.5 million acre-feet is already in sight. Irrespective of the decision on the bill now in Congress, it is quite evident that the fight over the Colorado River water is far from being solved. Thus, one might venture to predict that the future will see even more vigorous controversies involving more states than the past has seen.

Need for Quantitative Measures of Economic Effects on Agriculture

Agricultural interests from both states have shown particular concern because agricultural sectors are the major recipients of the available water. It is readily accepted, however, that agricultural sectors are economically interrelated with nonagricultural sectors. Moreover, progress has been made in quantitatively measuring the economic interactions on state and national levels using input-output or interindustry analysis. However, considerably less progress has been made in measuring economic interdependence between two contiguous states especially when they share a common supply of a valuable and scarce resource such as water. Specifically, information is needed to answer such questions as: What is the extent and nature of dependence between agriculture in California and non-agriculture in California, agriculture in Arizona and even non-agriculture in Arizona? What are the technical water requirements of different sectors in California and Arizona and how are these requirements related to economic activity within California regions or between California and Arizona? What are the magnitudes of the embodied water transfers between California and Arizona as a result of gross trade

relationships in different commodities among these two states? Given these commodity-embodied water transfers and the water balance of trade that results therefrom, what light can be shed with respect to different water policies for a specified regional or multiregional objective? To what extent does the economic prosperity in each of these states depend on the use of water from the Colorado River?

These are but a few relevant questions that should be asked and answered. These same questions can be extended to all the western states of the United States. The study proposed here is to formulate and apply input-output analysis to answer the kinds of questions posed above within the scope and limitations of existing data. While the proposed study covers only California and Arizona, it is meant to be a pilot study conducted in such a manner that it will serve to indicate the problems encountered in connecting state economies in an input-output framework. The nature of the research proposed here is therefore additive in the sense that other interested researchers can build and improve upon it to accomplish a broader objective of analyzing joint water utilization among all the western states.

Specific Objectives of This Study

Having stated the nature and extent of the problem, we now specify the objectives to be pursued in the course of this study. These are the following:

1. To determine the nature and extent of economic interdependence between California and Arizona with particular emphasis on agriculture.

2. To develop models for analyzing such changes as the levels of resource availability on the production and trade patterns between the two states.
3. To quantify intrastate water-content matrices within the context of input-output framework for California and Arizona.
4. To use the results in (3) in conjunction with the resulting interstate trade patterns in (2) to quantify the embodied direct and indirect interstate water transfers and thus the water-balance-of-trade-equivalence of the balance of trade in international trade studies.
5. To examine in the light of the above results, the implications of different allocation policies for the Colorado River water between California and Arizona and the other states.
6. To examine the applicability of such a scheme of analysis as employed in this study for a more ambitious program of the joint-western states water development in the future.

Organization of the Study

Having stated the problem and the specific objectives of this study, we now turn to the plan followed in the course of its implementation.

This plan is as follows:

Chapter II provides the background material basic to input-output analysis and reviews some interregional input-output models which are compared and contrasted with respect to some attributes relevant to this study. Chapter III presents a theoretical fusion of the two-state

economics -- California and Arizona and the introduction of the primary input (water) into the resulting two-region and three-region models. The chapter represents the backbone for the whole study and consequently all the empirical results and analyses based on them are related back to the mathematical relationships presented in it. Chapter IV presents the estimation procedures and the empirical fusion of the two-region model developed in Chapter III. Chapter V presents the empirical results and the analyses based on them. All the large tables representing the empirical results have been put in the appendix but the information contained in them has been summarized and analyzed in smaller tables which have been incorporated in the chapter. Chapter VI presents summary and conclusions, policy implications and some suggested areas for further study.

II. INPUT-OUTPUT ANALYSIS

A. Input-Output Framework

(i) Historical Development of Input-Output Analysis

Input-output analysis is fundamentally a theory of production which shows how each sector of an economic unit depends upon every other sector. The historical development of input-output analysis has been outlined by several authors. Among these are the following, Carter [8], Christ [15], Martin and Carter [38], Chapman [9], and Miernyk [40]. Essentially all of these authors trace the first rudiments of input-output analysis back to 1758 when Francois Quesnay published his Tableau Economique, which stressed the interdependence of economic activities.^{1/}

The next link to this development was not forthcoming until Leon Walras, more than a century later published his Eléments d'Economie Politique pure in 1874.

Among other things, the model developed by Walras shows interdependence among the producing sectors of the economy, and the competing demands of each sector for the factors of production.^{2/}

^{1/} An excellent discussion of Quesnay's work is given by Phillip C. Newman, The Development of Economic Thought, Englewood Cliffs, N. J.: Prentice-Hall Inc., 1956, pp. 130-137. Also, an interesting transformation of the Tableau into the context of modern input-output has been implemented by Amarin Phillips, "The Tableau Economique as a Simple Leontief Model," Quarterly Journal of Economics, Vol. LXX (Feb. 1955), pp. 137-144.

^{2/} It should also be noted that, unlike his predecessors, Walras was largely concerned with the question of simultaneous determination of all prices in the economy thus making a transition from partial to general equilibrium framework.

Other economists -- especially Gustav Cassel of Sweden and Vilfredo Pareto of Italy -- contributed to the theory of general equilibrium, but the culmination of the work started by Quesnay came in the 1930's when Professor Wassily Leontief of Harvard developed a general theory of production based on the notion of economic interdependence whose empirical content was evidenced in his book in 1941 [31]. Leontief's original table was highly aggregated but subsequent development of high-speed electronic computers and improved data collection methods have permitted more disaggregation in the construction of input-output tables. The evidence of enthusiastic receipt of input-output technique is borne by the many publications of national, international, regional and interregional tables;^{3/} and by the vast literature on the subject.^{4/}

(11) The Basic Model

The conceptual framework of an open, static input-output model is given by Leontief [32, pp. 18-19]. It is essentially a set of linear equations describing intersector flows of goods and services, and consists of three entities via the transaction table, the matrix of technical coefficients and the matrix of interdependency (direct plus indirect) coefficients.

^{3/} Some of these international and interregional models are discussed in detail in section B below.

^{4/} For a documentation of a significant portion of the literature related to input-output research, see; (1) Riley, V., and Allen, R. J., Interindustry Economic Studies, Operations Research Office, Bibliographic Reference series No. 4, Baltimore: The John Hopkins Press, May 15, 1955, 280 pp; (2) Taskier, C. E., Input Output Bibliography 1955-1960, United Nations, N. Y., 1961 (ST. STAT/7) VI-222 pp; and Input-Output Bibliography 1960-1963, United Nations, N. Y., 1964. (ST. STAT/SER. M/39) VII-159 pp.

The open static system may be mathematically described as in equation (II-1) below where:

$i, j, = 1, 2, \dots, n$

X_i is the output of sector i and

x_{ij} is the output of sector i purchased by sector j

y_i denotes the final demand for goods of sector i

Thus:

$$X_1 = x_{11} + x_{12} + \dots + x_{1j} + \dots + x_{1n} + y_1$$

$$X_2 = x_{21} + x_{22} + \dots + x_{2j} + \dots + x_{2n} + y_2$$

.

.

(II-1)

$$X_1 = x_{11} + x_{12} + \dots + x_{1j} + \dots + x_{1n} + y_1$$

.

.

$$X_n = x_{n1} + x_{n2} + \dots + x_{nj} + \dots + x_{nn} + y_n$$

The basic assumption made in input-output analysis pertains to the relationship between purchases of a sector and the level of output of that sector. Thus

$$(II-2) \quad X_{ij} = a_{ij}X_j + \bar{c}_{ij}$$

where a_{ij} and \bar{c}_{ij} are parameters. In most empirical work the intercept, \bar{c}_{ij} , is assumed to be zero which is equivalent to "forcing" the production function through the origin. Consequently, a_{ij} is measured from a single observation (year) of the ratio between x_{ij} and X_j .

Assuming \bar{c}_{1j} to be zero^{5/} and solving for a_{1j} in equation (II-2) gives:

$$(II-3) \quad a_{1j} = \frac{x_{1j}}{x_j}$$

Substituting (II-3) into (II-1) gives:

$$x_1 - a_{11}x_1 - a_{12}x_2 - \dots - a_{1j}x_j - \dots - a_{1n}x_n = y_1$$

$$x_2 - a_{21}x_1 - a_{22}x_2 - \dots - a_{2j}x_j - \dots - a_{2n}x_n = y_2$$

(II-4)

$$x_1 - a_{11}x_1 - a_{12}x_2 - \dots - a_{1j}x_j - \dots - a_{1n}x_n = y_1$$

$$x_n - a_{n1}x_1 - a_{n2}x_2 - \dots - a_{nj}x_j - \dots - a_{nn}x_n = y_n$$

Or in matrix notation:

^{5/} If, however, we maintain the form in equation (II-2), we may solve for a^*_{1j} which is given by

$$(II-3a) \quad a^*_{1j} = \frac{(x_{1j} - \bar{c}_{1j})}{x_j}$$

which clearly shows that if the intercept of the input function was positive then equation II-3 above would overestimate the input coefficient a_{1j} ; and if the intercept was negative, it would underestimate the input coefficient a_{1j} . Only when the input functions were strictly linear would a_{1j} be an unbiased estimator of a^*_{1j} .

$$(II-4a) \quad IX - AX = Y$$

Equation (II-4) may be written as:

$$(II-4) \quad \begin{bmatrix} (1-a_{11}) & -a_{12} & \dots & -a_{1j} & \dots & -a_{1n} \\ -a_{21} & (1-a_{22}) & \dots & -a_{2j} & \dots & -a_{2n} \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ (II-5) & \cdot & \cdot & \cdot & \cdot & \cdot \\ -a_{n1} & -a_{n2} & \dots & -a_{nj} & \dots & (1-a_{nn}) \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ \cdot \\ \cdot \\ x_n \end{bmatrix} = \begin{bmatrix} y_1 \\ y_2 \\ \cdot \\ \cdot \\ y_n \end{bmatrix}$$

or

$$(II-5a) \quad (I-A)X = Y$$

The matrix $(I-A)$, usually referred to as the "Leontief matrix", has the special properties that its diagonal elements are positive and the off-diagonal elements are negative or zero.^{6/} The solution of equation (II-5) is obtained by inversion of the $(I-A)$ matrix as given by:

^{6/} It can be demonstrated that the Leontief matrix is non-singular and non-negative which insures that for all non-negative y 's the solution of equation (II-6) for x_i will be non-negative and unique. See Dorfman et al. [18, pp. 499-501].

$$(II-6) \quad \begin{bmatrix} x_1 \\ x_2 \\ \cdot \\ \cdot \\ x_1 \\ \cdot \\ \cdot \\ x_n \end{bmatrix} = \begin{bmatrix} a^{11} & a^{12} & \dots & a^{1j} & \dots & a^{1n} \\ a^{21} & a^{22} & \dots & a^{2j} & \dots & a^{2n} \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ a^{n1} & a^{n2} & \dots & a^{nj} & \dots & a^{nn} \end{bmatrix} \begin{bmatrix} y_1 \\ y_2 \\ \cdot \\ \cdot \\ y_1 \\ \cdot \\ \cdot \\ y_n \end{bmatrix}$$

in which a^{ij} denotes the elements of the $(I-A)$ inverse. Or more compactly

$$(II-6a) \quad X = (I-A)^{-1} Y$$

The inverse coefficients of equation (II-6), also called interdependency coefficients, indicate the amount of production for each sector i necessary to sustain a final demand of one unit in sector j .

An Example Matrix

The basic features of input-output analysis summarized above will now be illustrated using an aggregated 3-sector version of the 26-sector order California model for 1958 as given by Carter and Ireri [7].

The California economy can be visualized as being composed of three sectors - agriculture, agricultural processing and other manufacturing and services. The transactions table depicted in Table II-1 provides a systematic accounting device of the sales and purchases of each of

the above three sectors for the year 1958. Reading across rows indicates the sales and reading down columns shows the purchases for the respective sectors.

For example, reading across the first row of Table II-1 shows that, of the total gross output of 3,336.1 million dollars for agriculture, 465.7 million dollars was consumed by agriculture itself (reservation demand), another 1,542.9 million dollars worth was sold to agricultural processing, 15.6 million dollars worth to other manufacturing and the remaining 1,311.8 million dollars worth to final uses. Reading down the first column indicates the purchases by the agricultural sector via 465.7 million dollars worth from itself, 156.5 million dollars worth from agricultural processing, 521.8 million dollars worth from other manufacturing and services and the remaining 2,192.1 million dollars worth from the primary inputs making a gross outlay of 3,336.1 million dollars.

Table II-2 is a result of the operation indicated in equation (II-3) above. It depicts the direct purchases from the sector listed at the left by the sector listed at the top. For example, reading down the first column indicates the agricultural requirements of inputs to be 13.9 cents from itself, 4.7 cents from agricultural processing, 15.6 cents from other manufacturing for every dollar's worth of output.

Table II-3 presents the inverse of the 3×3 endogenous part of the matrix depicted in Table II-2 and shows direct plus indirect requirements by any sector listed at the left per dollar of final demand of any sector listed at the top.

TABLE II-1

Transaction Table, California Economy, 1958

No.	Producing sector	Purchasing sectors				Total output ^{a/}
		Agriculture	Agricultural processing	Other manufacturing	Final uses	
million dollars						
1	Agriculture	465.7	1,542.9	15.6	1,311.8	3,336.1
2	Agricultural processing	156.5	543.5	104.5	5,130.1	5,934.6
3	Other manufacturing and services	521.8	1,538.5	17,455.2	31,395.8	50,911.3
4	Primary inputs (value added)	2,192.1	2,309.6	33,335.9	13,177.9	51,015.6
TOTAL		3,336.1	5,934.6	50,911.3	51,015.6	

a/ Sums may not always be constant because of rounding errors.

TABLE II-2

Input-Output Coefficient Matrix

No.	Producing sector	Purchasing sectors		
		Agriculture	Agricultural processing	Other manufacturing
1	Agriculture	.139	.260	.000
2	Agricultural processing	.047	.092	.002
3	Other manufacturing	.156	.259	.343
4	Primary inputs	.657	.389	.655

TABLE II-3

Interdependence Coefficients Matrix

No.	Producing sector	Purchasing sectors		
		Agriculture	Agricultural processing	Other manufacturing
1	Agriculture	1.181	.338	.002
2	Agricultural processing	.062	1.119	.004
3	Other manufacturing	.305	.522	1.524

(iii) The Assumptions of Input-Output Analysis

It is helpful to distinguish at the outset the input-output table from the analytical table to which it is related. The table is a statistical description of the inputs and outputs of the different sectors of an economic system during a particular period of time. The input-output system is a theoretical schema, a set of simultaneous linear equations in which the unknowns are the levels of output of various branches and in which the parameters are to be empirically estimated from the information contained in the input-output table. Consequently, the assumptions of the theoretical scheme strongly influence the accounting conventions used in the table.

The assumptions, implications, and validity thereof, underlying input-output analysis have been discussed by Cameron [6], Chapman [op. cit., pp. 60-97], Chenery and Clark [14, pp. 33-34], Martin and Carter [op. cit., pp. 8-9], Miernyk [41, p. 42] and Christ [op. cit., pp. 139-145] among others. Although stated in various forms, these assumptions, essentially concerned with the nature of production, are:

a. Homogeneity Assumption which requires (1) that all products of a single sector should either be perfect substitutes for one another or they should be produced in strictly fixed proportions, (2) that each sector should have a single input-structure^V and (3) that there should be no substitution between the products of different sectors.

^V The absence of substitution among inputs need not be assumed, for it is already implied in the assumption of efficiency in production, constant returns to scale, absence of joint products, and the existence of just one nonproduced scarce resource. This proposition is the well known substitution theorem due to Samuelson. See Koopmans (ed) [28, ch. 7]. The theorem says, in effect, that even though the production functions allow substitution among inputs, it does not take place, no matter how the final bill of goods is changed, because the achievement of efficiency in production always leads to a unique set of input ratios for each industry.

b. Proportionality Assumption holds that the relation between inputs and output is a linear homogeneous one, that is, the inputs purchased by each sector are a function only of the level of output of that sector.

c. Additivity Assumption requires that the total effects of carrying on several types of production is the sum of separate effects. Through this assumption external economies and diseconomies are ruled out.

(iv) Input-Output and the General Equilibrium Theory

The general equilibrium framework of the Walras-Cassel type that excludes spatial aspects has been discussed by Dorfman et al. [op. cit., Ch. 13] and has been elegantly summarized by King [27, pp. 6-12] following a programming format that parallels that for spatial models given by Lefebvre [30]. The relationship of input-output analysis to the general equilibrium theory has been discussed by Christ [op. cit., pp. 143-145], Dorfman et al. [op. cit., Chs. 13 and 15], Leontief [33], Allen [1, Ch. 11], and Morishima [42, especially pp. 14-22], among others. It is generally agreed among these authors that the Leontief system descends from the general equilibrium system with the following notable exceptions. First, in the Walras-Cassel system, the supply functions for factors and demand functions for goods are given in terms of prices by the marginal utility theory. In the Leontief system, however, there is no counterpart to them and the final demand and value added are taken as variable constraints or parameters.

Second, outputs of the Leontief system are determined independently of the prices given by the price-cost equations in the Walras-Cassel

system. The simplicity of the Leontief system is thus based on this separability and the assumption of fixed input coefficients.^{8/}

Third, input-output analysis is like general equilibrium theory in that it encompasses all products and industries rather than singling out one or a few for study and impounding the others in the ceteris paribus assumption. But, input-output analysis is unlike general equilibrium theory in that it is not in itself an equilibrium system.^{9/}

Fourth, the central feature of input-output analysis is the technology of the economy assumed given and expressed in the form of a proportional production function. In the general equilibrium framework each industry would use several primary factors and produce a number of intermediate or final goods jointly. All this is assumed away in input-output analysis where there is only one primary input (labor), only one output in any industry, and a different output for each industry.

Fifth, input-output analysis, unlike the general equilibrium framework, is a non-optimizing technique. Optimization in both the demand and supply side, is omitted. The input-output system is thus an empirically oriented multicommodity analysis. The very general, but empirically sterile multimarket analysis is transformed into a model capable of empirical implementation.

^{8/} Since $a_{1j} \geq 0$ in the Leontief system, the model has a close formal relation to the competitive equilibrium model in which all goods are gross substitutes; so the results obtained from the latter can be applied to the former mutatis mutandis [See Morishima, op. cit., pp. 3-22].

^{9/} If the assumption of constant input-output ratios is accepted so that the adequacy of input-output is not questioned, then the introduction of optimizing on the demand side is sufficient to yield a general equilibrium system incorporating input-output analysis as its production function.

B. Methodological Approaches to Interregional Input-Output Analysis

We now turn to a brief review of some interregional input-output models which have relevance to this study.

1. The Leontief "Balanced Regional Model"

The first "interregional"^{10/} input-output model was suggested by the developer of input-output technique, W. Leontief [32, pp. 93-116]. According to this formulation, a nation is conceived to be composed of n regions each producing m goods of two types. The first type referred to as "regional" are those whose supply and demand are balanced within the region. The second category, referred to as "national" or "interregional," is composed of those commodities whose supply and demand is not balanced within the different regions. Consequently, for this formulation, the industries are analogously classified either as regional or national on the basis of whether the demand and supply of commodities produced are balanced or not balanced within the region in question.^{11/} The structure of the system is determined by two sets of constants: the first is a matrix of technical input coefficients describing production in each region and the second is the proportion of each national commodity produced in each region. The objective is to estimate the outputs of both national and regional commodities in each region.

^{10/} Leontief [32, p. 95] observed that his formulation should, when interpreted strictly, be considered as a theory of intranational rather than interregional relationships. Theoretical refinement which would transform this analysis into truly interregional theory was proposed by Walter Isard [25, pp. 318-328].

^{11/} This follows from the fact that in the Leontief input-output formulation it is assumed that each commodity is supplied by a single industry or sector of production [see 14, p. 33].

A few aspects of this model that have immediate consequences should be briefly mentioned. First, a strict interpretation of the Leontief model would require a "composite" matrix of technical input coefficients describing the structure of production in the entire combined region under study, that is, California and Arizona combined. Such a composite matrix would be assumed to apply to both the structure of production in California alone, and the structure of production in Arizona also taken singly. Such a composite matrix is not available for the problem at hand. Instead we will have two distinctly different matrices, one for California and the other for Arizona. Consequently, it may be desirable to employ a technique that may readily and directly use this prior information. However, this same aspect of the Leontief model may be utilized in the specification of a three-region model. More specifically, due to lack of independent matrices for northern and southern California, it may be necessary to disaggregate the State matrix into two regional matrices -- northern and southern California.^{12/} It should be quite evident that this approach parallels Leontief's disaggregation of the national matrix. The second aspect of the Leontief model has to do with the categorization of commodities as regional or national and consequently an analogous categorization of industries. This categorization understates the regional effect as it assumes that only production of purely regional commodities is influenced by the location of demand.

^{12/} Strictly speaking, then, the resulting three-region model (northern California, southern California, and Arizona) would neither be purely interregional nor purely intraregional but a mixture of both, viz., an "intraregional-interregional" or, if one wishes, "intrastate-interstate" model.

2. The Isard Model

Isard [25] developed an alternative input-output model which made quite a different assumption about the localized industries. He argued that geographic flows of commodities may be roughly attributed to two basic sets of factors. One which encompasses the inequalities in geographic distribution of population and income. The other factor embraces the indivisibilities of production and consequent economies of large-scale production. Thus, Isard suggested that "any given good or service produced in any region must be taken as a unique commodity, distinct from the same good or service produced in any other region" [op. cit., p. 320]. Isard was, therefore, the first to suggest an input-output model capable of utilizing two distinct matrices. He suggested combining these matrices with two trade matrices into a larger matrix capable of relating production in any sector to activity levels in all other sectors of the multiregional economy. Since each commodity is considered distinct from the same commodity in the other area, the coefficients in each trade matrix have their own special meaning and represent specific trade flows.

The Isard model has several advantages as well as limitations. Unlike Leontief's model which understates regional effects by assuming that only production of purely regional commodities is influenced by the location of demand, Isard's model exaggerates regional effects by assuming no substitution between a commodity produced in one region and the same commodity produced in another. Leontief's assumption about national commodities would appear in this model as a special case in which the proportions among a commodity supplied from different sources are the same for all uses in all regions. Although the computational

problems of the Isard model are manageable, empirical application is crippled by lack of adequate data. For empirical work, this model would require information as to source of supply for each commodity and each sector of use. Furthermore, constant trade coefficients imply unchanging supply sources. Thus, the model specifies that the spatial extent of each line of production in each region is fixed with respect to inputs. Consequently, transport outlays or, in physical terms, distance inputs per unit of output of any line of production in any region are not permitted to change. Also, and as a corollary, roughly fixed price ratios are assumed, so that substitution of distance inputs for other inputs, of transport outlays for other outlays, is precluded. Thus, the underlying structure of space economy is held rigid. These defects are explicitly mentioned by the author [op. cit., p. 328].

Certain advantages of the model are also mentioned by the author. First, the model enables an analyst to view investment decisions and requirements with a locational perspective. Second, the model has potential value for cyclical analysis by shedding considerable light upon the regional transmission of impulses, and thus upon the neglected role of space in business cycle generation. Thus, the model can show how a given autonomous impulse in one region is transmitted to other regions; it can show implicitly how the distance separating regions modifies the impact of this impulse and how the direct and indirect effects play back and forth (instantaneously) from region to region, constantly damped by spatial resistance. It should be borne in mind that although these attributes sound quite novel, the crucial test of

a model must, in the final analysis, depend upon the possibility and economic feasibility of its being empirically implemented.

3. The Moses Interregional Model

Leon Moses suggested a simple modification of Isard's model [45]. He found that information as to source of supply and destination of each commodity, not only by regions but also by supplying and consuming sectors of the commodity in each region, was not available. Thus, to overcome this problem Moses assumed similarity, in use of imported and regionally-produced commodity.^{13/} That is, if a given region i imports 20 percent of its needs for sector j 's product from region k , every sector in region i using this product will take 20 percent of its needs from sector j of region k . The fundamental assumptions of this and other models discussed above are: (a) the fixity of technical coefficients, (b) the uniformity of trading relationships for all sectors in a region, and (c) the stability of trading coefficients.

4. The Chenery Regional Model

Chenery in his regional model of Italy [10] has proposed a model which differs from Isard's formulation in that it applies to all sectors of a region uniform trading pattern. In other words, he assumes that all sectors in the region have for each commodity the same import coefficient from other areas which is the average of the import patterns for that commodity in the region as a whole. Chenery formulated his model in terms of trade coefficients (or regional supply coefficients) only

^{13/} Chenery [10 or 11] and Wonnacott [76, pp. 68-99] have made similar assumption with respect to imported commodities.

for the region as a whole, but these coefficients need not be assumed as being fixed for each consuming sector in the region, i.e., his approach permits changes in the source of supply for each consuming sector but not for the region as a whole.^{14/}

In a later study, Chenery and Kretschner [13] have formulated a long-term planning model with many properties similar to the North-South model of Italy, but in which the solution is obtained by minimizing total investment subject to capital imports and labor force restraints. They illustrate this model by applying it to a ten-year plan for the development of the Italian economy.

5. The Moses Linear Programming-Input-Output Model

In a study emphasizing the intimate connection between interregional trade and the location of economic activity, Leon N. Moses [46] has blended two approaches to interregional analysis, namely, linear programming and input-output analysis. The model involves introduction of alternative production techniques and substitution into input-output analysis. The data of the model include regional capacities, and technical structure of industries in each region.

Each regional table differs from the national matrix in two ways. First, each regional table has a number of transportation columns equal to the number of regions multiplied by the number of producing industries as compared to only one such column in the national matrix. Second, the transportation row is absent from these regional matrices which is justified on the basis that marginal productivity of distance is zero

^{14/} Moses [45, op. cit.] instead postulated that each sector has the same trade coefficient as has the region as a whole.

[46, p. 375]. The variables to be determined are the interregional and intraregional shipments, regional outputs, total transport cost and slack dummy variables representing idle capacities of the producing and transport industries and for unemployed labor. Foreign imports are assumed to be perfect substitutes for their domestic counterparts, i.e., all imports are treated as competitive. Differential transport costs are an integral part of this scheme and play a significant role in determining the extent to which regions participate in foreign trade. Cost minimization, based on the use of input-output techniques, the linear programming transportation algorithm, and a series of iterative approximations, constitutes the asserted method of solution. The major drawbacks of Moses' approach include: (a) various conceptual and data difficulties require that the technique of optimization be restricted to two-digit manufacturing industries, (b) the model operates as if the regions are points or as if they are areas of shipments in and out concentrated at a single point. Thus the problem of cross-hauling is not adequately handled.^{15/}

6. The Laontief-Strout Gravity Flow Model

Laontief in collaboration with Strout [34] has developed a multi-regional input-output model which can be characterized as a special

^{15/} However, this problem is inherent in all discrete models of interregional competition which constitute the majority of interregional trade studies so far embodied in the literature.

type of Isard's gravity or potential type model.^{16/} Essentially the model explains the flow of a commodity between regions as being proportional to the total consumption and total production but inversely proportional to the total production of the commodity. The peculiar practical problem of multiregional input-output analysis stems from the fact that identical goods can be, and actually are, produced and exchanged among different regions (the so-called problem of "cross-hauling").

The Leontief-Strout system consists of a set of conventional input-output equations as well as interregional balance equations both of which are linear, plus interregional structural equations which are nonlinear but which can be linearized by means of first order approximations. The interregional coefficients are decomposed into four sets of subsidiary parameters. The first two parameters characterize, in a summary way, the relative position of region g, viz.-a-viz. all other regions as a supplier, and region h as a user, of particular good in question. The third parameter incorporates the magnitudes of the transportation costs or distances, and the final set of parameters is a dummy-type variable representing the logistic reasoning that good i is or is not being shipped at all from a particular region to another region. The

^{16/} Walter Isard in his discussion of gravity, potential, and spatial interaction [26, Ch. 11] has traced the history of the development of these gravity flow type models showing how the major concepts of the gravity flow models have evolved from the concepts of Newtonian physics. These concepts of Newtonian physics are: the gravitational force, the gravitational energy, and the gravitational potential. The gravity flow model counterparts of these concepts as put forth in the Stewart-Zip hypotheses [26, pp. 499-500] are the demographic force, demographic energy, and demographic potential respectively.

introduction of these essentially summary parameters emphasizes the fundamental difference between this system and the analytically more explicit, and empirically more demanding, linear programming models. The authors state that the first two of these parameters, designated as C_g 's and K_h 's cannot be observed but can be computed indirectly, through application of least squares (in partial analysis) or some other conventional curve-fitting procedure. Or (in a consistent interregional framework) they can be determined through solutions of a set of simultaneous linear equations involving the use of factual information concerning the magnitudes of total output, inputs, and internal use (regional "reservation demand") of the domestic production of particular good in each region in a given base year.

The advantages of the Leontief-Strout formulation include the following: (a) It can make effective use of meager data on flow of commodities between different regions. (b) It can handle the problem of "cross-hauling" which prevents adequate explanation by linear programming type model of shipments gathered on geographic area-to-area basis. (c) It allows for an explanation of the regional substitution effects via an assumed constant substitutional parameter.^{17/}

7. The Wonnacott Model

Ronald J. Wonnacott, in his study of Canadian-American dependence [76] has used a modified Isard-Moses-Chenery model. Wonnacott developed

^{17/} Jinkich Tsukui, et al. [52] have shown that a better explanation of substitution results when this parameter is allowed to vary and have presented the economic justification and empirical results of a modified gravity model. Polenske [47] has tested a modified version of the gravity model using the fruit and vegetable unload data.

two separate import matrices,^{18/} one for the United States and the other for Canada, and combined them with the 1947 United States purchaser's price matrix and a similar Canadian matrix for 1949. Since the chief source of potential weakness in an input-output trade analysis is the assumption of frozen international (or interregional) trading patterns, Wonnacott's study, like Chenery's, recognizes that export and import patterns may change as critical levels of capacity production are reached in various sectors in either country (or region). Moreover, Wonnacott's approach is capable of giving a set of general solutions for any bill of goods so long as the number of capacity restraints to be incorporated is relatively small. In contrast the Chenery approach can handle any number of such constraints using an iterative method of solution for one bill of goods only. The major problem of the Chenery model is that each bill of goods requires a particular set of computations. Wonnacott's approach, although it follows Chenery's

^{18/} For the Canadian import matrix, Wonnacott was able to obtain the ideal Isard type trade coefficients based on better and more detailed information than is usually available. Thus, in this respect his model resembled the Isard model [25]. With respect to U.S. import matrix, however, the only data available were figures of total U.S. imports from Canada of each good. These were mechanically distributed in the same way that corresponding domestic U.S. output was distributed. This method implies that all imports are essentially "competitive." Thus, in this respect, Wonnacott's model has an attribute of the Chenery model.

approach, has practical advantages in the computation of the solution for any bill of goods.^{19/}

C. Summary and Comparisons of Alternative I-O Models

The relationships between various approaches to interregional analysis have been discussed in the literature. Among these are the following: (a) Kuenne [29, pp. 395-436] has analyzed and related the various constructs of interregional models where the major techniques used are linear programming and input-output analysis, and various modifications and synthesis of these. (b) Heady and Carter [22] have reviewed the major techniques available for partial analysis with the aim of putting input-output technique into proper perspective with respect to the other major approaches (the regression approach and the programming approach). (c) Chenery and Clark [14, Chs. 4 and 12] have discussed and compared interregional input-output models with interregional programming models. (d) Chenery [12], in a slightly different context of development programming, has shown how input-output and the programming techniques may be used jointly so as to check and modify results from each. (e) In a study of experiments with input-output models, Ghosh [20] has compared the regression approach, the programming approach, and input-output approach with specific emphasis on their projection potentials.

^{19/} In the Wonnacott model, the limited number of capacity limitations that can be handled is a direct consequence of the fact that 2^p inverses are required in order to have a general set of solutions sufficient to solve for any bill of goods (where p is the number of sectors to which capacity restraints are applicable.) This method would be inefficient computationally since each of the inverses is of the order $2n$. However, the author argues that in his procedure it is only necessary to compute one such inverse and then to derive the others from it by application of a method by which an inverse matrix may be adjusted to take account of the addition of a degenerate matrix of rank one to the original matrix. [See 76, p. 57]

Ghosh [op. cit., p. 31] suggests that using input-output and linear programming jointly may make it possible to anticipate changes in input-output coefficients by considering ranges for the coefficients rather than exact values and fixing the output levels which is to be produced.

The Different Approaches Compared

Let us now attempt to bring the various approaches discussed in II-B into closer focus with respect to certain attributes relevant to this study. In Table II-4 these approaches are compared with respect to the following attributes: the number of capacity restraints that can be incorporated into the model, the generality of solution, number of regions included in empirical implementation, number of commodities, treatment of exports (trading patterns), computational feasibility, data requirement, possibility of substitution in production, and finally, the variables to be determined. Without attempting an exhaustive discussion of the entire table, the major aspects which differentiate these different approaches will be mentioned.

a. The Generality of the Solution

All the seven models discussed in II-B above employ either a general solution involving the inversion of the Leontief matrix or an iterative solution where successive rounds of estimates are obtained. This information is depicted in column 2. It should be noted that the Leontief-Strout gravity model does not fit this classification exactly.

b. Number of the Capacity Restraints that can be Incorporated in Each Producing Sector to Which Such a Limitation is Applicable

As shown in column 1, in the first three models no capacity limitations are imposed. This presupposes that either both direct and indirect

TABLE II-6

Model	Number of capacity restraints that can be incorporated	Generality of solution	Number of regions	Number of commodities	Treatment of exports and imports	Computational feasibility	Data requirement	Possibility of substitution	Variables to be determined
1	2	3	4	5	6	7	8*	9	10
Leontief's "Balanced Regional Model" (1953)	None	General solution for any bill of goods.	n	n commodities a) regional b) national	a) First estimate outputs of both national and regional commodities in each region. b) Obtain export-import structure by comparing (a) with corresponding consumption figures.		a) "Composite" matrix of technical import coefficients describing the structure of production in the entire combined region or nation. b) Proportion of each national commodity produced in each region.	None	
The Isard Model (1951)	None	General solution for any bill of goods.	n	n commodities (no substitution in demand of same good in different regions).	Trade coefficient matrix for each good in each region.	Computational problem manageable, but not so with data problem.	a) Commodity flow data by both industry and region of origin and destination (not available). b) Separate input coefficient matrix for each region.	None	
The Moses' Inter-regional Model (1955)	None	General solution for any bill of goods.	3	11	Imports exogenous -- product of regional outputs and foreign trade coefficients.	Feasible (involves inversion of the Leontief-type matrix).	a) Commodity flow data only by region of origin and termination (available in I.C.C. form). b) Regional input-output coefficients (product of input and trade coefficients).	None	
The Chenery Model (North-South Model of Italy) (1953)	Any number	Iterative solution for one bill of goods only.	2	22 "national" and "regional"	Derived within model -- imports if capacity is exceeded, and exports if capacity not reached.	Convergence within manageable number of iterations.	a) National input coefficient matrix b) Consumption coefficients (MPC's) c) Capacity limitations on sectors d) Regional supply coefficients e) Final demand for investment.	Import substitution only	a) Magnitudes of regional interdependence b) Effect of localized and nonlocalized industries c) Effect of investment program on regional balance of payments.
Moses' L.P.-I-O Model (1960)	Any number	Solution procedure rests on use of I-O techniques and the L.P. transportation algorithm in a series of iterative solutions.	2	3 (homogeneous)	Exogenous -- to be determined within the model.	Empirical implementation is a slow, laborious process, particularly when the system is complex.	a) Regional input coefficient matrices. b) Strictly speaking the model is soluble. Total output, total inputs, and internal use of domestic production of a particular good in each region in a given base year is available.	Constant substitutional parameter (original), varying substitution parameter (modification by Tsukui, et. al.).	
Leontief-Strout Gravity Model (1961)	?	Four different estimating methods: a) "Exact solution" b) "Simple solution" c) "Least squares" procedure d) "Point estimate" procedure.	a) 13 for coal b) 9 for the other 3 commodities.	4	Estimated total exports and total imports of each region are obtained through summation of the corresponding inter-regional flows.	Computational work increases very fast as more regions and commodities are incorporated.	a) Regional final demands b) Regional capacities c) Regional input coefficients matrices.	Alternative production techniques and substitution between regions.	a) Regional and intraregional shipments b) Regional outputs (direct and indirect requirements) c) Total transport costs d) Slack dummy variables.
Wonnacott's Model (1961)	Small number	General set of solutions for any bill of goods.	2	35	Fixed trade coefficients. a) For U.S. import matrix assumed similarity in use of imported and regionally produced commodity. b) Canadian imports treated as strictly noncompetitive.	Involves computing of only one inverse and deriving the remaining 2P-1 inverses by addition of a degenerate matrix of rank one to original matrix.	a) 2I-O tables for each region (here, U.S. and Canada) b) Two import matrices one for each region.		

* This column is very crucial since the choice of model(s) for this study will be, in the final analysis, conditioned by data availability (among other things).

requirements can be met within the region or it may imply that some capacity limitations do exist but are not reached in the course of satisfying the demands (direct and indirect). The Chenery model and the Moses linear programming-input-output model, on the other hand, do allow an incorporation of any number of capacity limitations. This allows more "realism" into the models since only those requirements that are physically producible within the sectors of each region are obtained. Where physical capacity limitations exist in the production of any particular commodity in any one region, the extra requirements from a specified bill of goods is impounded into imports. This procedure is desirable only when such imports are economically and institutionally feasible. In the Leontief-Strout gravity model it is not clear whether or not incorporation of capacity limitations is possible.^{20/} The laborious computational work involved in many inverses of order $2n$ limits the capacity limitations that can be incorporated in Wonnacott's model to only a small number.

c. Trade Patterns

Most of the models discussed above treat the trade pattern between regions as datum. This is essentially true with all the models with the exception of the Moses linear programming-input-output model in which differential trade patterns are allowed to be manifested through incorporation of transport costs.

^{20/} However, if one is willing to perceive capacity limitation as the output of industry j for commodity i in base year t_0 then in this sense output would constitute, in an ex post sense, the capacity limitation for industry j .

d. Data Requirement

Of the truly interregional models discussed above, the Isard model is the most demanding in terms of data requirement. In fact, the commodity flow data, both by industry and region of origin and destination, required by this model are not currently available even in the most advanced countries such as the United States. However, in Japan a multiregional input-output study which is consistent with the 1960 national input-output table for Japan and which includes the inter-regional shipments of goods and services is expected to be released this year.^{21/} Also in the United States a multiregional input-output research program utilizing the Leontief-Strout model is currently in the planning stage.^{22/}

e. Substitution in Production

Again, all the models discussed above (except the Moses model -- in 1960) do not allow for substitution in production. In this sense they do retain one of the limitations of the input-output technique, namely, the fixity of input-output coefficients. Note that the Samuelson's substitution theorem discussed earlier holds only in the case of one primary resource (labor). In the case where more than one primary resources are considered (say labor and water) the Samuelson's theorem would no longer be valid.

^{21/} "Interregional Input-Output Table for Japan," Trade and Industry No. 108, pp. 19-40.

^{22/} Leontief, W., and Karen Polenske, "Multiregional Input-Output Research Program" Report No. 1, July 1967.

III. THEORETICAL FUSION OF THE TWO-STATE ECONOMIES

In the present chapter we will be concerned with the development of a theoretical fusion of the two-state economies, California and Arizona. First, a two-region model is developed similar to the Isard model discussed in II-b-11. This general model is used to compare the analytical framework for each of the multiregional input-output models reviewed in II-B above. Second, a three-region model -- northern California, southern California and Arizona -- is formulated. Third, a method of incorporating a primary resource like water into the two- and three-region models is presented. The chapter is concluded by consideration of value added per unit of water used.

A. Two-Region Model: California and Arizona -- A Theoretical Fusion

Each of the two state economies is divided into n sectors and an accounting system is adopted which shows the flow of output from each sector to every other sector in the two state economies.

Let us adopt the following notation:

x_{ij}^{cc} = Value of output in California sector i consumed by California sector j .

x_{ij}^{aa} = Value of output in Arizona sector i consumed by Arizona sector j .

t_{ij}^{ca} = Value of output in California sector i consumed by Arizona sector j .

t_{ij}^{ac} = Value of output in Arizona sector i consumed by California sector j .

y_i^{cc} = Value of output in California sector i consumed by California final demand sectors.

y_1^{aa} = Value of output in Arizona sector 1 consumed by Arizona final demand sectors.

y_1^{ca} = Value of output in California sector 1 consumed by Arizona final demand sectors.

y_1^{ac} = Value of output in Arizona sector 1 consumed by California final demand sectors.

V_j^c = Value added in California sector j.

V_j^a = Value added in Arizona sector j.

Given the above set of notations, a system of account showing the flow of output from each sector to every other sector in the two regions yields an input-output table shown in Table III-1.

Thus, the value of output of any sector 1 in either California or Arizona is distributed to purchasing sectors and final demand sectors in both California and Arizona. The inputs of any sector 1 may be obtained by reading down the appropriate column.

In this formulation the final demand sectors must be interpreted with care. In both California and Arizona they include exports, among other things. Thus to avoid double counting, exports must be interpreted as exports to regions other than California and Arizona.

The gross output column is obtained by summing across rows. For example, the gross outputs of California sector 1 and Arizona sector 1 are given by equations (III-1a) and (III-1b) respectively:

$$(III-1a) \quad X_1^c = \sum_j x_{1j}^{cc} + \sum_j t_{1j}^{ca} + y_1^{cc} + y_1^{ca}$$

$$(III-1b) \quad X_1^a = \sum_j x_{1j}^{aa} + \sum_j t_{1j}^{ca} + y_1^{aa} + y_1^{ac}$$

Table III-1: Interindustry Flow Table for California and Arizona

	Calif. Consuming Sectors				Arizona Consuming Sectors				Final Demand		Gross Output	
	1	2	...	n	1	2	...	n	Cal.	Ariz.		
Calif. Producing Sectors	1	x_{11}^{cc}	x_{12}^{cc}	...	x_{1n}^{cc}	t_{11}^{ca}	t_{12}^{ca}	...	t_{1n}^{ca}	y_1^{cc}	y_1^{ca}	X_1^c
	2	x_{21}^{cc}	x_{22}^{cc}	...	x_{2n}^{cc}	t_{21}^{ca}	t_{22}^{ca}	...	t_{2n}^{ca}	y_2^{cc}	y_2^{ca}	X_2^c

	.		I				II			.	V	.
	n	x_{n1}^{cc}	x_{n2}^{cc}	...	x_{nn}^{cc}	t_{n1}^{ca}	t_{n2}^{ca}	...	t_{nn}^{ca}	y_n^{cc}	y_n^{ca}	X_n^c
Arizona Producing Sectors	1	t_{11}^{ac}	t_{12}^{ac}	...	t_{1n}^{ac}	x_{11}^{aa}	x_{12}^{aa}	...	x_{1n}^{aa}	y_1^{ac}	y_1^{aa}	X_1^a
	2	t_{21}^{ac}	t_{22}^{ac}	...	t_{2n}^{ac}	x_{21}^{aa}	x_{22}^{aa}	...	x_{2n}^{aa}	y_2^{ac}	y_2^{aa}	X_2^a

	.		III				IV			.	VI	.
	n	t_{n1}^{ac}	t_{n2}^{ac}	...	t_{nn}^{ac}	x_{n1}^{aa}	x_{n2}^{aa}	...	x_{nn}^{aa}	y_n^{ac}	y_n^{aa}	X_n^a
Value Added	V_1^c	V_2^c	...	V_n^c	V_1^a	V_2^a	...	V_n^a				
Gross Outlay												

The gross outlays for California and Arizona sector j are given by equations (III-2a) and (III-2b) respectively.

$$(III-2a) \quad X_j^C = \sum_i x_{ij}^{cc} + \sum_i t_{ij}^{ac} + VA^C$$

$$(III-2b) \quad X_j^A = \sum_i x_{ij}^{aa} + \sum_i t_{ij}^{ca} + VA^A$$

If proper adjustments for exports and imports are made, the gross output of any sector i would equal its gross outlay.

If we denote the California and Arizona outputs of sector i as X_i^C and X_i^A respectively, both expressed in 1958 U.S. dollars, then the accounting system of Table III-1 may be compactly expressed as in (III-3).

$$(III-3) \quad \begin{bmatrix} X^C \\ \text{---} \\ X^A \end{bmatrix} = \begin{bmatrix} X^{cc} & | & t^{ca} \\ \text{---} & | & \text{---} \\ t^{ac} & | & X^{aa} \end{bmatrix} = \begin{bmatrix} y^{c+a} \\ \text{---} \\ y^{a+c} \end{bmatrix}$$

Expressing each input of an industry as a proportion of the total output of that industry we obtain:

$$(III-4) \quad \begin{aligned} \text{a. } a_{ij}^c &= \frac{x_{ij}^{cc}}{X_j^C} && \text{(Technical coefficients for California Economy)} \\ \text{b. } m_{ij}^c &= \frac{t_{ij}^{ac}}{X_j^C} && \text{(Gross Import coefficients for California Economy)} \\ \text{c. } a_{ij}^a &= \frac{x_{ij}^{aa}}{X_j^A} && \text{(Technical coefficients for Arizona Economy)} \\ \text{d. } m_{ij}^a &= \frac{t_{ij}^{ca}}{X_j^A} && \text{(Gross Import coefficients for Arizona Economy)} \end{aligned}$$

Where: $(i, j = 1, 2, \dots, n)$ and both a_{ij} 's and m_{ij} 's are elements of n -order matrices of technical and trade coefficients respectively.^{1/}

Substituting (III-4) into (III-3) gives:

$$(III-5) \quad \begin{bmatrix} I-A^c & -M^a \\ -M^c & I-A^a \end{bmatrix} \begin{bmatrix} X^c \\ X^a \end{bmatrix} = \begin{bmatrix} Y^{c+a} \\ Y^{a+c} \end{bmatrix}$$

The identity sub-matrices in equation (III-5) are of order n . The square matrix in equation (III-5) is the equivalent of the "Leontief matrix" in which the diagonal elements are positive, the off diagonal elements are negative or zero.^{2/} In this case the coefficients of the "Leontief matrix" may be interpreted as constant production and trade relationships assumed to hold for any values of X^c and X^a . Consequently, the parameters in the Leontief matrix describe the economic structure of the two-state economy for a given point in time.

Solving for X^c and X^a in terms of any final bill of goods gives:

$$(III-6) \quad \begin{bmatrix} X^c \\ X^a \end{bmatrix} = \begin{bmatrix} I-A^c & -M^a \\ -M^c & I-A^a \end{bmatrix}^{-1} \begin{bmatrix} Y^{c+a} \\ Y^{a+c} \end{bmatrix}$$

^{1/} The A and the M matrices (technical coefficients and trade coefficients matrices respectively) are not necessarily of the same order. The generality of the theory holds in cases where the regional I-O tables concerned are of different dimensions, since the resulting partitioned matrix will always be square and the inverse (if it exists) can always be found. For example, if the A matrix for California was $n \times n$, and that for Arizona was $k \times k$, then the two M matrices would be $k \times n$ and n by k respectively, and the resulting two-state matrix would be square with dimensions $(n+k) \times (n+k)$.

^{2/} See footnote #6 in Chapter II.

in which the output of any sector in the two states is expressed as a function of final demand for all goods in the two states. For any specific final demand items (\bar{Y}^{-c+a} , \bar{Y}^{-a+c}) the 2n equations (III-5) uniquely determine the 2n unknowns (X^c and X^a).

Although it would be mathematically and computationally convenient to combine, say, the y_i^{cc} with y_i^{ca} into y_i^c (the value of output from California's sector i that goes into final demand in both California and Arizona), it is, nonetheless, desirable to leave them separate since the outcome of changing, say, y_i^{cc} by $\pm k$ while holding y_i^{ca} constant may not be equivalent to changing y_i^{ca} by $\pm k$ while holding y_i^{cc} constant. The same applies, mutatis mutandis, to y_i^{ac} and y_i^{aa} .

Equation (III-6) may be written as

$$(III-6a) \quad \begin{bmatrix} X^c \\ \dots \\ X^a \end{bmatrix} = \begin{bmatrix} A^{*c} & M^{*a} \\ \dots & \dots \\ M^{*c} & A^{*a} \end{bmatrix} \begin{bmatrix} y^{c+a} \\ \dots \\ y^{a+c} \end{bmatrix}$$

or

$$(III-6b) \quad X = N^* Y$$

B. Analytical Framework of the Different Formulations -- A Comparison

Let us now examine the different formulations discussed in Chapter II-B above against the simplified system of Table III-1 and equation (III-4). The Leontief regional model involves disaggregation of the national matrix. Thus, the technical input coefficients derived from quadrants I and IV (Table III-1) are similar. Since the first h goods in the Leontief model are regionally balanced, the elements of the trade coefficients derived from quadrants II and III, the first h rows

in quadrants II and III will have zero elements. Also the first h elements of the second column in quadrant V and the first h elements of the first column in quadrant VI will have zero elements. The remaining elements in quadrants II, III, V, and VI will have positive elements depending upon whether or not the national commodities ($h+1$ to n) enter the import matrices or the final demand columns.

The Moses and Chenery interregional models both make essentially a similar simplification. They assumed similarity, in use, of imported and regionally produced commodity. Thus they both would have only one import column each in quadrants II and III. These import coefficients are obtained in the following manner: If California, for example, imports 20 percent of its needs for sector j (say meat and animal products) from Arizona, every sector in California using meat and meat products will take 20 percent of its needs from sector j (meat and meat products) from Arizona. Also, for both Chenery's and Moses' models, unlike the Isard model, would have similar a_{ij} 's in quadrants I and IV; that is, the technical input coefficient of the i th row and j th column in quadrant I will be equal to the coefficient of the i th row and j th column in quadrant IV.

In Moses' model, each regional table differs from the national matrix in two ways. First, each has a number of transportation columns equal to the number of regions multiplied by the number of producing industries as compared with only one such column in the national table. With reference to Table III-1, this would mean that quadrant I and IV would each have n extra columns (since we have assumed two regions and n commodities). The trade coefficients in quadrants II and III would

be obtained through optimization process (cost minimization) of the ordinary transportation problem.^{3/} Second, the transportation row is absent from the regional matrices and justified on the basis of zero marginal productivity with respect to distance.

In the Leontief-Strout gravity flow model the flow of a particular good i from region g to any other region h is assumed to be directly proportional to its total output in region g , to its input in region h , and inversely proportional to the aggregate amount of commodity i . Consequently, with reference to Table III-1, the matrices of quadrants II and III would consist only of major diagonal elements in each, with all off-diagonal elements being equal to zero. The coefficients of matrices in quadrants I and IV would represent California and Arizona tables respectively.

In the Wonnacott model, the coefficients derived from the flow data in quadrants I and IV would represent two different sets of technical input coefficients -- one for Canada and the other for the United States. With respect to elements of quadrant II and III, one of them would have n rows and n columns (representing the Canadian import matrix for which Wonnacott was able to get the ideal set of data required by the Isard formulation), the other would have n rows but only one column (representing the U.S. import matrix for which only data for total imports was available).

^{3/} Note, however, that in the empirical implementation of this model Moses was unable to incorporate the multiple transportation columns specified in his theoretical construct due to lack of requisite data. He had the option of either using a single column transport coefficients from the input-output table or leaving the transport industry out of the matrix entirely. The latter course was followed on the basis that these coefficients have built into them fixed trading pattern in terms of both industries and regions [26, p. 379].

C. Three-Region Model -- Northern California, Southern California and Arizona

(1) A Theoretical Fusion

Due to geographical proximity of Southern California with Colorado River and the State of Arizona, one would expect on a priori basis, that the impact of the Colorado River water allocation between California and Arizona would have a more direct impact on Southern California than on Northern California. Consequently, it may be desirable to split California into two sub-regions -- North and South California. These, together with Arizona constitute a three-regional model.

For simplicity of exposition, let us adopt the following notation: The superscripts 1, 2 and 3 represent the three regions, Northern California, Southern California and Arizona respectively. Thus comparable to two-region model equations (III-3), (III-5), (III-6), (III-6a) and (III-6b) are the three region model equations (III-7), (III-8), (III-9), (III-9a) and (III-9b) respectively.

$$(III-7) \quad \begin{bmatrix} X_c^1 \\ X_c^2 \\ X^3 \end{bmatrix} = \begin{bmatrix} X_c^{11} & t^{12} & t^{13} \\ t^{21} & X_c^{22} & t^{23} \\ t^{31} & t^{32} & X_a^{33} \end{bmatrix} \begin{bmatrix} y^{1+2+3} \\ y^{2+1+3} \\ y^{3+1+2} \end{bmatrix}$$

Expressing each input of an industry as a proportion of the total output of that industry yields:

$$(III-8) \quad \begin{bmatrix} I-A^1 & -M^{12} & -M^{13} \\ -M^{21} & I-A^2 & -M^{23} \\ -M^{31} & -M^{32} & I-A^3 \end{bmatrix} \begin{bmatrix} X^1 \\ X^2 \\ X^3 \end{bmatrix} = \begin{bmatrix} y^{1+2+3} \\ y^{2+1+3} \\ y^{3+1+2} \end{bmatrix}$$

Solving for X^1 , X^2 and X^3 gives:

$$(III-9) \quad \begin{bmatrix} X^1 \\ X^2 \\ X^3 \end{bmatrix} = \begin{bmatrix} I-A^1 & -M^{12} & -M^{13} \\ -M^{21} & I-A^2 & -M^{23} \\ -M^{31} & -M^{32} & I-A^3 \end{bmatrix}^{-1} \begin{bmatrix} y^{1+2+3} \\ y^{2+1+3} \\ y^{3+1+2} \end{bmatrix}$$

Which may be written as

$$(III-9a) \quad \begin{bmatrix} X^1 \\ X^2 \\ X^3 \end{bmatrix} = \begin{bmatrix} A^{*1} & M^{*12} & M^{*13} \\ M^{*21} & A^{*2} & M^{*23} \\ M^{*31} & M^{*32} & A^{*3} \end{bmatrix} \begin{bmatrix} y^{1+2+3} \\ y^{2+1+3} \\ y^{3+1+2} \end{bmatrix}$$

Or more compactly,

$$(III-9b) \quad X^* = N^{**} y^*$$

D. Introduction of Water in the Interregional Models

(1) Direct and Indirect Water Requirements

The inverse matrices in equations (III-6a) and (III-9a) provide the basis for answering a question of special significance in this study -- that is, how much water is required directly and indirectly to satisfy any specified final demand. Production in any one of the sectors in any one of the regions under consideration not only creates a direct demand for water within that sector but also induces indirect demands for water to other sectors. Indirect demands occur because each sector relies on the products of other sectors for inputs. Consequently, the expansion of output in any one sector creates demand for inputs not only to itself but also to other sectors from which it

buys or to which it sells. By combining water usage data with information contained in the input-output models, it is possible to trace and quantify these interdependencies and thus reveal the effects on water withdrawal of a change in final demand in any one sector.

Specifically, we define technical water use coefficients as the ratio of water requirements (r_j) in a given sector to the gross output of that sector (X_j) as given in equation (III-10).

$$(III-10) \quad F_j = \frac{r_j}{X_j} ; j = 1 \dots n, n+1, \dots, 2n$$

The total water required (W) is given as

$$(III-11) \quad W = \sum_{j=1}^n F_j^c X_j^c + \sum_{j=1}^n F_j^a X_j^a$$

or in matrix notation

$$(III-12) \quad W = FX, \text{ where } F \text{ is a partitioned row vector } [F^c \mid F^a] \text{ and } X \text{ is as defined previously.}$$

Substituting the solution for X from equation (III-6a) into (III-12) yields,

$$(III-13) \quad W = [F^c \mid F^a] \begin{bmatrix} A^{*c} & M^{*a} \\ - & - \\ M^{*c} & A^{*a} \end{bmatrix} \begin{bmatrix} y^{c+a} \\ - \\ y^{a+c} \end{bmatrix}$$

or more compactly,

$$(III-14) \quad W = FN^*Y$$

If we let $FN^* = V^*$ (with dimension $(1 \times 2n)$ with elements V_j^* , then for each dollar of final demand for products of sector j (say) in California V_j^* units of water are required directly by products of sector j

and indirectly through requirements induced in other sectors of the California economy as well as those induced in sectors of the Arizona economy.

A disaggregation of V^* can be accomplished by defining a new matrix \bar{F} with block diagonal submatrices \bar{F}^c and \bar{F}^a . Consequently, for the two-region model we obtain:

$$(III-15) \quad \begin{bmatrix} \bar{F}^c & 0 \\ 0 & \bar{F}^a \end{bmatrix} \begin{bmatrix} A^{*c} & M^{*a} \\ M^{*c} & A^{*a} \end{bmatrix} = \begin{bmatrix} \bar{F}^c A^{*c} & \bar{F}^c M^{*a} \\ \bar{F}^a M^{*c} & \bar{F}^a A^{*a} \end{bmatrix}$$

in which \bar{F}^c and \bar{F}^a are each n-order block diagonal matrices of direct water requirements with typical elements $\bar{F}_{jj}^c = F_j^c$ and $\bar{F}_{jj}^a = F_j^a$, respectively.

Define $\bar{F}N^* = W^*$ where,

$$W^{11} = \bar{F}^c A^{*c}, \quad W^{12} = \bar{F}^c M^{*a}$$

and $W^{21} = \bar{F}^a M^{*c}, \quad W^{22} = \bar{F}^a A^{*a}$

W^{11} and W^{22} are each $n \times n$ matrices of intrastate direct plus indirect water requirements for California and Arizona economies respectively. W^{12} and W^{21} are also n-order matrices of embodied, direct plus indirect, water transfers from California to Arizona and Arizona to California respectively.

Note that $[1]^T [W^*] = V^*$, where T designates transpose and (1) is a unit vector $(2n \times 1)$.

^{4/} Introduction of the price of water per unit (million gallons) in the respective regions would transform the $2n \times 2n$ W^* matrix into an equivalent $2n \times 2n$ partitioned water transaction matrix in dollar terms.

E. Water Multipliers

(1) Unweighted Water Multipliers

To obtain the $2n$ vector of unweighted water multipliers $[\bar{W}]$ for the $2n$ sectors in the two states, the column sums of the $[W^*]$ are divided by the appropriate direct water intake coefficients of $[\bar{F}]$.

Thus,

$$(III-16) \quad \bar{W} = [\bar{F}^{-1}][W^*]^T [1]$$

where

$[\bar{F}]$, $[W^*]$ and $[1]$ are as defined previously.^{5/}

It should be emphasized that the unweighted water multipliers of equation (III-16) are merely ratios which say little about absolute water requirements by various sectors. A high water multiplier indicates that a sector requires small quantities of water intake relative to water requirements of the sectors from which it buys its inputs and vice versa for a low water multiplier.

(ii) Weighted Water Multipliers.

The unweighted water multipliers discussed above are related to a unit change in final demand for each sector. However, the relative sizes of different sectors differ considerably. To reveal the impact on water use relative to the differentials in relative sizes and growth patterns of different sectors, we allow a uniform percentage change to occur in the level of existing final demand in each sector. Let this

^{5/} For a three region model, the equation would be similar to equation (III-16) but with different dimensions. That is, F would be $3n \times 1$ sum vector and the resulting \bar{W} would be $3n \times 1$ vector of unweighted water multipliers for the $3n$ sectors.

change be Δy_j for any sector j . If Δy_j is then multiplied by the direct and indirect water requirements per unit of final demand in sector j , the resulting figure is defined as the weighted water multiplier (\bar{w}_j).

With reference to previous notation, the weighted water multipliers for the sectors in the two-region model would be given by:

$$(III-17) \quad \bar{w} = \begin{bmatrix} \Delta y^c & | & 0 \\ \hline 0 & | & \Delta y^a \end{bmatrix} \begin{bmatrix} W^* \\ \hline \end{bmatrix}^T \begin{bmatrix} \\ \hline 1 \end{bmatrix}$$

where $[W^*]$, $[1]$ and T are as defined previously. Δy^c and Δy^a are each n -order block diagonal matrices with typical elements Δy_{jj}^c and Δy_{jj}^a representing a uniform change in existing final demand for each California and Arizona sector j respectively.

Equation (III-17) may be written more compactly as:

$$(III-17a) \quad \bar{w} = [\bar{\Delta y}] [W^*]^T [1]$$

or

$$(III-17b) \quad \bar{w} = [\bar{\Delta y}] V^{*T}$$

(iii) Direct and Indirect Embodied Water Transfers

From equation III-5 recall that:

$$(III-18) \quad W^{12} = \bar{F}^c M^{*a}$$

which is an n -order matrix of embodied direct plus indirect water transfer from California to Arizona. Summing down the columns of W^{12} , we obtain a row vector W^{12*} indicating direct plus indirect water requirements from California sectors to satisfy \$1,000 final demand in the corresponding Arizona sectors. Thus we have

$$(III-19) \quad W^{12*} = [1]^T [W^{12}]$$

in which W^{12} , T and $[1]$ are as defined previously.

Post-multiplying W^{12*} by a vector of final demand for Arizona sectors $[y^a]$, gives the total amount of embodied (or congealed) water $[W^{ca}]$ transferred from California to Arizona. Thus:

$$(III-20) \quad W^{ca} = [W^{12*}][y^a]$$

By similar manipulation, the total amount of embodied water from Arizona to California $[W^{ac}]$ may be obtained. The equivalents of equations (III-18), (III-19) and (III-20) are respectively:

$$(III-21) \quad W^{21} = \bar{F}^a M^{*c},$$

$$(III-22) \quad W^{21*} = [1]^T [W^{21}], \text{ and,}$$

$$(III-23) \quad W^{ac} = [W^{21*}][y^c]$$

(1v) Water Intake, Interdependency Coefficients and Multipliers -- Illustrated

To illustrate the weighted and unweighted water multipliers for the two-region model, we will use an aggregated version of the California-Arizona 72-order model (discussed in Chapter V).^{6/}

Table III-2 gives the interindustry flows of goods and services by sector and state of origin in thousands of dollars for the aggregated (4x4) California-Arizona two-region model for 1958 and water intake in million gallons for the endogenous part of the model. This is the empirical equivalent of Table III-1 (Section III-B above).

^{6/} Note that the version of the model used here is extremely aggregated and the results obtained here should not be compared figure by figure with the results obtained from the full model in Chapter V.

Table III-3 gives the direct purchases per dollar of output and is obtained through the operations indicated by equation (III-4). The top left quadrant is the equivalent of equation (III-4a), the bottom left quadrant to equation (III-4b), the top right quadrant to equation (III-4c) and the bottom right quadrant to equation (III-4d).

Table III-4 gives the direct plus indirect purchases per dollar of final demand for the combined California-Arizona economy. It is obtained by inverting the partitioned matrix of Table III-3, and is equivalent to the partitioned inverse matrix of equation (III-6).

In column 1, (Table III-5) the direct water intake coefficients in million gallons per \$1,000 gross output are tabulated. These are obtained by computing the ratio of water requirements $[r_j]$ in a given sector to the gross output of that sector $[X_j]$ as given by equation (III-10) and represent elements in the F vector. For example, the technical water use coefficient for California agriculture is obtained as a ratio of total water requirements for the ten agricultural sectors (7,705,426 million gallons) to their corresponding total gross output (\$3,336,090 thousand dollars). The resulting direct water use coefficient for California agricultural sectors (2.310 million gallons per \$1,000) is tabulated in column 1 (Table III-5) together with similar coefficients for other sectors.

The direct plus indirect water requirements matrix (W^* matrix) are obtained by premultiplying the N^* matrix (corresponding to Table III-4) with the partitioned diagonal matrix \bar{F} whose elements are those in column 1 of Table III-5. The resulting matrix W^* is given in Table III-6. Summing down any column of W^* , Table III-5 gives total direct plus

TABLE III-2

Interindustry Flows of Goods and Services by Sector and State of Origin,
California and Arizona Economies, 1958
(thousand dollars)

California producing sectors	California purchasing sectors				Arizona purchasing sectors				Total states output
	C-1	C-2	C-3	C-4	A-1	A-2	A-3	A-4	
	Agri. ^{a/}	Agri. proc. ^{b/}	Other mfg. and serv. ^{c/}	Final use ^{d/}	Agri. ^{a/}	Agri. proc. ^{b/}	Other mfg. and serv. ^{c/}	Final use ^{d/}	
C-1 Agriculture ^{a/}	465,712	1,542,953	15,603	1,273,831	2,896	3,732	17	31,346	3,336,090
C-2 Agricultural processing ^{b/}	156,492	543,531	104,546	5,019,498	1,511	3,363	6,422	99,262	5,934,625
C-3 Other manufacturing and services ^{c/}	521,803	1,538,507	17,455,182	31,204,865	3,688	2,400	52,446	132,381	50,911,272
C-4 Value added ^{d/}	2,187,595	2,305,179	33,325,195	13,128,836	202	65	7,357	41,451	50,995,880
Arizona producing sectors									
A-1 Agriculture ^{a/}	3,990	2,928	61	21,879	58,711	57,860	2,227	354,566	502,222
A-2 Agricultural processing ^{b/}	--	--	--	--	6,405	15,111	8,339	145,780	175,635
A-3 Other manufacturing and services ^{c/}	452	1,507	9,249	20,147	35,884	27,504	846,701	1,976,499	2,917,943
A-4 Value added ^{d/}	46	20	1,436	6,805	392,925	65,602	1,994,732	1,662,730	4,127,296
COMBINED STATES INPUTS	3,336,090	5,934,625	50,911,272	50,675,861	502,222	175,637	2,918,241	4,444,015	

^{a/} Includes sectors 1 through 10.

^{b/} Includes sectors 11 through 15.

^{c/} Includes sectors 16 through 27.

^{d/} Includes the remaining sectors which may be regarded as value added.

TABLE III-3

Direct Purchases Per Dollar of Output, California and Arizona Economies, 1958^{a/}

Sector number	California producing sectors	California purchasing sectors			Arizona purchasing sectors		
		C-1	C-2	C-3	A-1	A-2	A-3
		Agri.	Agri. proc.	Other mfg. and serv.	Agri.	Agri. proc.	Other mfg. and serv.
C-1	Agriculture	.140	.260	.000	.006	.021	.000
C-2	Agricultural processing	.047	.092	.002	.003	.019	.002
C-3	Other manufacturing and services	.156	.259	.343	.007	.014	.018
	Arizona producing sectors						
A-1	Agriculture	.001	.000	.000	.117	.329	.001
A-2	Agricultural processing	--	--	--	.013	.086	.003
A-3	Other manufacturing and services	.000	.000	.000	.071	.157	.290

^{a/} All sectors are defined as in Table III-2 above.

TABLE III-4

Direct and Indirect Purchases Per Dollar of Final Demand,
California and Arizona Economies, 1958 a/

Sector number	California producing sectors	California purchasing sectors			Arizona purchasing sectors		
		C-1	C-2	C-3	A-1	A-2	A-3
		Agri.	Agri. proc.	Other mfg. and serv.	Agri.	Agri. proc.	Other mfg. and serv.
C-1	Agriculture	1.181	.339	.001	.010	.038	.001
C-2	Agricultural processing	.062	1.120	.003	.005	.027	.003
C-3	Other manufacturing and services	.305	.522	1.524	.020	.055	.040
	Arizona producing sectors						
A-1	Agriculture	.001	.000 ^{b/}	.000 ^{b/}	1.139	.411	.003
A-2	Agricultural processing	.000 ^{b/}	.000 ^{b/}	.000 ^{b/}	.017	1.101	.005
A-3	Other manufacturing and services	.000 ^{b/}	.000 ^{b/}	.000 ^{b/}	.118	.284	1.410

a/ All sectors are defined as in Table III-2 above.

b/ The entry in these cells were positive but too small to appear in the decimal places utilized.

TABLE III-5

Water Coefficients and Multipliers -- Aggregated (6 x 6)
California-Arizona Economy, 1958

Sector number	Sector title	Direct co-efficients	Direct plus indirect co-efficients	Unweighted multiplier (2 ÷ 1)	$\Delta y_1 = 0.1Y_1$	Weighted multiplier (2 x 4)
		1	2	3	4	5
C-1	Agriculture	2.310	2.767	1.198	127,383	352,469
C-2	Agricultural processing	0.013	0.812	62.462	501,950	407,583
C-3	Manufacturing, mining, and services	0.010	0.018	1.800	3,120,487	56,169
A-1	Agriculture	4.209	4.820	1.145	35,456	170,898
A-2	Agricultural processing	0.005	1.830	366.000	14,578	26,678
A-3	Manufacturing, mining, and services	0.018	0.041	2.278	197,650	8,104

TABLE III-6

Direct and Indirect Water Requirements (W*), California - Arizona, 1958
(million gallons per thousand dollars of final demand)

		California purchasing sectors			Arizona purchasing sectors		
		Agri. <u>a/</u>	Agri. <u>b/</u> proc.	Mfg. and mining <u>c/</u>	Agri.	Agri. proc.	Mfg. and mining
California producing sectors	Agri.	2.7590	.7920	.0023	.0234	.0888	.0023
	Agri. proc.	.0008	.0146	.0000 ^{d/}	.0001	.0004	.0000 ^{d/}
	Mfg. and mining	.0030	.0052	.0152	.0002	.0006	.0004
Arizona producing sectors	Agri.	.0042	.0000 ^{d/}	.0000 ^{d/}	4.7941	1.7299	.0126
	Agri. proc.	.0000 ^{d/}	.0000 ^{d/}	.0000 ^{d/}	.0001	.0055	.0000 ^{d/}
	Mfg. and mining	.0000 ^{d/}	.0000 ^{d/}	.0000 ^{d/}	.0021	.0051	.0254
TOTAL		2.7670	.8118	.0175	4.8200	1.8303	.0407

a/ Includes sectors 1 through 10.

b/ Includes sectors 11 through 15.

c/ Includes sectors 16 through 26.

d/ These entries are positive but do not show up in the decimal places utilized.

indirect water requirements for the sector in question in million gallons per \$1,000 of final demand. The corresponding figure for California agricultural sectors (2.767) is tabulated in column 2 (Table III-5) with similar figures for the rest of the sectors.

Dividing the elements of column 2 by their corresponding elements in column 1 (Table III-5) results in the unweighted water multipliers $[\bar{W}]$ tabulated in column 3 (Table III-5) and corresponds to equation (III-16). For example the unweighted water multiplier for California agricultural sectors is 1.198 ($2.767 \div 2.310$).

The weighted water multipliers $[\bar{W}^*]$ are obtained by multiplying Δy_j ($j = 1, 2, \dots, 6$) given in column 4 (Table III-5) by the corresponding column sums of the W^* matrix (given in column 2 Table III-5). The resulting weighted water multipliers are tabulated in column 5 (Table III-5) and correspond to equation (III-17) or (III-17a). For the California agricultural sectors the multiplier is 352,469 ($127,383 \times 2.767$).

(v) Possible Biases on Water Coefficients, Interdependency Coefficients and Multipliers

In this section we indicate some possible biases that may occur in estimating the F , N^* and W^* matrices and also in the resulting \bar{W} and \bar{W}^* vectors and to suggest means by which the biases may be reduced.

First, the direct water intake coefficients (water to output ratios which are elements of the F vector) were estimated on the assumption of proportional production functions (linear homogeneous functions) for water inputs. Recalling equation III-10 these functions were of the following form:

$$r_j = F_j X_j$$

from which direct water intake coefficients were obtained as:

$$F_j = \frac{r_j}{X_j}$$

However, if production functions for the water input assumed a different form, say:

$$r_j = k_j + F_j^* X_j$$

the solution for direct water intake coefficients would be given by:

$$F_j^* = \frac{(r_j - k_j)}{X_j}$$

which shows that if the intercept of the water input function was positive, the proportional water intake coefficient would overstate the direct water intake coefficients. This bias would be carried on to W^* matrix (via the relation of equation III-15) whose elements would also be overstated. Consequently also, (via the relation shown in equation (III-17)) the \bar{W} estimates would also be overstated.^{7/} Only where the water input functions were strictly proportional would F be an unbiased estimator of F^* .

A second source of bias relates to the assumption that all sectors in California-Arizona model were operating at or below their respective capacities. However, if at least one sector in either California or Arizona had a restrained capacity to meet the implied output necessary

^{7/} It is not possible to assess the direction of the bias on the \bar{W} estimates without actual data on F and F^* since, as shown in equation (III-16), \bar{W} is a ratio between two sets of estimates W^* to \bar{F} both of which would be overestimated.

to supply the delivery of a given level of final demand, then the resulting non-capacity inverse $[N^*]$ would be inconsistent with the feasible bill of goods and the resulting coefficients in the W^* matrix would be biased. Consequently, the estimates in the \bar{W} and \bar{w} vectors would also be biased.

A method for overcoming the capacity problem was suggested by Leon N. Moses^{8/} and implemented by Ronald J. Wonnacott in his Canadian-American dependence model.^{9/} Moses suggested the following steps: (1) Compute output $[X]$ for all industries necessary to support the delivery of a given final demand $[y]$. (2) Compare the required level of output $[X]$ and regional capacity for each sector $[\bar{X}]$ in each region individually. (3) If one or more sectors required output is greater than capacity, a choice is implied between building new capacity or increasing imports. Whether a region becomes a deficit area by increasing imports or makes a readjustment by building new capacity depends on the cost comparisons, not only in the deficit industries but in all industries in the region. In either case a different W^* matrix and a different set of multipliers is generated.

Wonnacott, (op. cit.) used both non-capacity and capacity models. He argues that for any number of sectors with capacity restraints, say h sectors, there would be $\frac{n!}{[n-h]!h!}$ solutions and a corresponding number of inverses.

^{8/} Leon N. Moses, A discussion of the paper by Moore, F. T., "Regional Economic Reaction Paths", A.E.R. (Proceedings) 45:2, 1955, pp. 133-156.

^{9/} Wonnacott, R. J., [76, op. cit.].

A third possible source of bias may arise in the estimation of water multipliers (the \bar{W} vector), since the estimation assumes a uniform horizontal expansion in all sectors. To the extent that this may not be so, a bias is introduced in the \bar{W} estimates, the magnitude and distribution of which is very hard to assess.

In summary, therefore, the results obtained and analyzed in Chapter V and the policy implications discussed in Chapter VI are conditional to the limitations summarized here.

F. Value Added Per Unit of Water Used

Still another alternative method of measuring the economic importance on a regional and interregional basis is the amount of value added per unit of water used in each of the sectors. The value added measure has been used by some authors in previous studies to give some indication of the extent to which certain industries could absorb price increases in supplemental supplies of water, assuming that these price increases could not be passed to the ultimate buyers of the industries' output.^{10/}

The value added estimates give some indication of the direct income-generating effects of each one of the industries in an economy. To obtain these magnitudes, each sector's value added figure [V_j] is divided by the total water used [r_j]. The resulting coefficients may be ranked regionally and interregionally by sectors to reveal the "efficiency" of water use patterns in the sense that if a sector j generates greater

^{10/} For further comments pertaining to the use of value added estimates see Lofting and McGauhey [35, op. cit.] and Tijoriwala *et al.* [51, op. cit.].

value added per unit of water used than another sector k, then sector j is considered more efficient than sector k with respect to the water use patterns. It should be emphasized that relative efficiency and not absolute efficiency, is considered here. Therefore, if there was a need for reallocation and if the sole objective of a region or a group of regions was maximum income generation per unit of a given resource (say water), then these value added figures can be utilized with other analyses to indicate the direction of intraregional and inter-regional sectoral reallocations.

Since the value added is comprised of hired labor wages, depreciation, interest charges, state and federal government taxes, and proprietors' profits, any increase in these magnitudes would affect the financial status of the industries. For example, if the wages went up, or the price of water went up for any sector j, the value added would consequently decrease, and the proprietors' profits would be also reduced. Thus the value added per unit of water used or per unit of labor used is a primary determinant of the amount a sector can absorb due to either a rise in the price of labor or price of water. If a profit margin is known for a particular sector j and if we assume that the industry absorbs the incidence of a price rise per unit of water, then it would be possible to establish the limit to which price of water can rise just to maintain the appropriate industry in operation.

On a regional basis, the industries with largest value added benefits per unit of investment in the water resource should receive priority if investment in water facilities are a prime consideration. Note, however, that if regional water resources are sufficient to sustain

long-term balanced growth in all sectors, then the question of priority should not arise.

California and Arizona Trade

(C) Income Distribution and Inequalities

The construction tables for California and Arizona are both for the same year 1954 and have been constructed on a comparable basis with regard to coding definitions, aggregation and general economic structure. In view of some minor differences in coding definitions, comparison of general economic structure is not a perfect one, but it is felt that the two states have essentially comparable general economic structure in both California and Arizona for the year 1954. The comparison, after adjustment with the 1954 and 1955 data...

The 1954 economic structure of the California and Arizona states are composed of 11 agricultural sectors, 2 nonagricultural primary sector, manufacturing and mining sectors, 3 service sectors, and the public sector. The above data have been presented in Table 1. The comparison includes: (1) total and per capita income, (2) per capita income by sector and (3) total and per capita income by sector.

¹ For a comparison of California and Arizona states see Table 1.
² For the breakdown of different sectors and their definition see the 1954 and 1955 economic structure in the appendix.
³ For comparison of different economic data see the appendix, the data by Department of the Interior, etc. and the corresponding comparison of the California and Arizona states in Table 1.

IV. ESTIMATION PROCEDURES

A. California and Arizona Tables

(1) Sector Definitions and Classifications

The input-output tables for California and Arizona are both for the base-year 1958 and have been constructed on a comparable basis with respect to sector definitions, aggregations and general estimation procedures. In some few cases where differences in either definitions, aggregations or general estimating procedures existed, a reconciliation was made so that the two models were essentially comparable.^{1/} Also, sectoral compositions in both California and Arizona tables will, with minor exceptions, allow alignment with the 1958 OBE study.^{2/}

The 26 endogenous sectors of the California and Arizona models are composed of 10 agricultural sectors, 5 agricultural processing sectors, 7 manufacturing and mining sectors, 3 service sectors, and one sector including all of the "margin" (wholesale and retail trade and transportation) industries.^{3/} The three other input supplying sectors, assumed to be exogenous include, (1) scrap and by-products, (2) net imports from out of state and (3) value added which includes maintenance

^{1/} For a reconciliation of California and Arizona tables -- see appendix A.

^{2/} For the breakdown of different sectors and their relation to the 1958 OBE sectoring procedures -- see appendix C.

^{3/} The discussion following hereafter will draw heavily on the work by Tijoriwala *et al.* [op. cit.] and the unpublished description of 1958 California Model by Professor Harold O. Carter.

construction, new construction, state and local government, federal government and households.

Agricultural sectors, partially because of data availability, are classified on a product rather than an enterprise basis. The processing, manufacturing, and some transportation industries are classified on an establishment basis to conform to the Standard Industrial Classification (SIC) system used by the Bureau of the Census and the sector classification of the 1947 BLS and 1955 USDA studies. The service, trade, and some transportation industries are classified on an activity basis for the same reasons. Mining is classified on a product basis as is agriculture.

Brief definitions of the commodity or industry included in each sector are given below:

a. Endogenous Sectors

1. Meat Animals and Products -- beef, hogs, sheep and lambs, wool, and mohair.
2. Poultry and Eggs -- chickens, eggs, broilers, turkeys and turkey eggs, other poultry and eggs, and hatcheries.
3. Farm Dairy Products -- milk, cream, and dairy animals sold for meat.
4. Food and Feed Grains -- wheat, rye, rice, corn, barley, oats, sorghum, corn and sorghum silage.
5. Cotton -- cotton lint and cottenseed.
6. Vegetables -- Irish potatoes, sweet potatoes, melons, dry beans and peas, strawberries, all other vegetables.
7. Fruit (excluding citrus) and Tree Nuts -- apples, apricots, cherries, nectarines, peaches, pears, persimmons, plums, prunes, pomegranates, avocados, dates, figs, olives, grapes, tree nuts, bushberries.
8. Citrus Fruits -- oranges, tangerines, lemons, grapefruit, limes, satsumas.

9. Forage Crops -- hay and pasture.
10. Miscellaneous Agriculture -- legume and grass seed, vegetable seeds, greenhouse and nursery products, on-farm forest products, sugar beets, oil crops, miscellaneous crops, horses and mules, honey and beeswax, agricultural services, hunting and fishing.
11. Grain Mill Products -- flour and meal, cereal breakfast foods, rice milling, blended and prepared flour, prepared animal feeds.
12. Meat and Poultry Processing -- meat packing, prepared meats, poultry dressing plants.
13. Dairy Products -- creamery butter, natural cheese, concentrated milk, ice cream and ices, special dairy products, fluid milk.
14. Canning, Preserving and Freezing -- canned seafood, cured fish, canning and preserving food, dehydrated fruits and vegetables, pickles and sauces, packaged seafood, frozen fruit and vegetables.
15. Miscellaneous Agricultural Processing -- bakery products including bread baked at single retail outlets, sugar, miscellaneous food preparations, alcoholic beverages, tobacco products.
16. Chemicals and Fertilizers -- chemicals, plastics, synthetic rubber, explosives, drugs and medicines, soap and related products, paints and varnishes, fertilizers, animal and vegetable oils.
17. Petroleum -- crude petroleum and natural gas, petroleum products, coke and products, paving and roofing materials.
18. Fabricated Metals and Machinery -- fabricated metals, machinery, electrical machinery, transportation equipment (excluding aircraft).
19. Aircraft -- aircraft and parts.
20. Primary Metals -- steel, foundries and forgings, nonferrous metals, nonferrous foundries.
21. Other Manufacturing -- textiles, logging, wood products, furniture, paper products, printing and publishing, rubber products, leather products, clay and glass products.
22. Mining -- all mining except for liquids and gases.

23. Utilities -- electric light and power; natural, manufactured, and liquified petroleum gas; telephone and telegraph.
24. Selected Services -- eating and drinking establishments, hotels and camps, laundries and dry cleaning, other personal services, business services, auto repair shops and garages, other repair services, motion picture theaters and other amusements.
25. Trade and Transportation -- railroads, trucking, warehousing and storage, water transportation, air transportation, pipeline transportation, wholesale and retail trade.
26. Unallocated Services -- banking and finance, real estate and rentals, medical and dental, nonprofit institutions including education, advertising, small arms production, motion picture production.

b. Exogenous Sectors

The endogenous section of the model is constructed symmetrically, i.e., each sector has both an output row and an input column. In contrast, there are three rows and ten columns in the exogenous portion of the California and Arizona models. The gross private capital accumulation sector, for example, is aggregated with the value added row, yet appears as a separate input column. For these reasons, the exogenous sectors are discussed in greater detail than are the endogenous sectors. Additional detail is also presented in the Martin-Carter report, [op. cit.] and Tijoriwala et al. [op. cit.].

Sector 27. Scrap and By-Products -- commodities considered as scrap or by-products, produced by the 26 endogenous sectors, are distributed to a special "dummy" sector, outside the endogenous system. These commodities are then distributed to the using sector from a scrap and by-products row. Some of the main commodities considered as by-products in this study are farm hides, dairy culls, cottonseed, grain

mill cleanings and sweepings, brewers' and distillers' dried grains, vegetable cake and meal, animal oils, packers' hides, molasses, cotton linters, coke oven gas, gold and silver from the primary metals industries, and blast furnace gas. In addition, the value of metal and non-metal wastes was estimated without specifying particular commodities.

Sector 28, Net Imports and Net Exports -- the primary modification of the general model needed to construct a regional model involves specifying regional imports and exports. Ideally, therefore, detailed import-export data by type and value of product are needed. Such information is extremely limited. Interstate Commerce Commission railroad waybill statistics are available for most products transported, but for the purpose of input-output analysis where detailed flow data are necessary, data giving tonnages of rather heterogeneous classes of freight are inadequate.

In the absence of adequate import-export data, the procedure followed for the general model was to specify the total amount of each product used in the state by both producers and consumers, compare the total with the total output produced in the state, and assume that the difference was either a net import or export, as the case might be. The imports and exports of this model are, therefore, net relationships -- any counterbalancing commodity flows across the state line within the same aggregate sector are ignored.

With imports recorded as a net relationship, and no information as to whether a particular industry uses domestically produced or imported inputs, a further assumption was necessary in order to scale the distribution of inputs from a sector down to domestically produced

goods only. It was assumed that each sector imported a particular class of goods in proportion to its relative use of that good. For example, if agriculture used 6 percent, nonagricultural industry 71 percent, and final demand 23 percent of the total value of chemicals and fertilizers consumed in the state, these sectors divided the value of imports in the same proportions. Conversely, available domestic output was distributed in the same proportions.

Technical coefficients of producing sectors express the amount of a domestically produced good required to produce one dollar of a sector's output. Technical coefficients of the import sector express the value of all imports required to produce one dollar of a sector's output. All imports into the state are aggregated and appear in the single net import row. Neither the sum of the net import row nor the sum of the net export column has any comparability to published trade data. Since imports and exports are recorded on a net basis, the sums are functions of the particular aggregation used. They are not, of course, equal.^{4/}

Sector 29, Maintenance Construction -- output includes the value of all maintenance work done on force account^{5/} in addition to that done by construction contractors. Since the output of any sector in any year is not usually considered to be a linear function of the amount of construction purchased by the producing sector, neither UC 29 nor UC 30 is included in the endogenous section of the model.

^{4/} The difference between total net imports and total net exports might be termed California's balance of trade. Note, however, that net exports include most purchases by the Federal Government whether physically exported or not.

^{5/} Force account construction, in contrast to contract construction, is performed by the purchasing industries' own employees.

Sector 30, New Construction -- output includes force account work as well as construction by contractors. Construction is defined as the design and erection of immobile structures and utilities, together with those service facilities which become an integral part of that structure. Oil well drilling is included.

Sector 31, State and Local Government -- outputs are the services rendered by state, county, city, special district, and school districts as measured by the amount of taxes paid by each sector of the economy. Note that taxes are considered government output rather than as inputs to government. Sectors buy output by paying taxes. Taxes are a production expense, as are purchases of other types of output. Inputs to government are the purchases of government from other sectors.

Sector 32, Federal Government -- output is the service rendered by the Federal Government as measured by the amount of taxes paid by each sector of the economy. Inputs are government purchases.

Government purchases of California products could not be estimated except for sectors whose output is mostly consumed in the region where produced. For other sectors, Federal Government purchases were ignored and are thus included in the net export sector. Since both net exports and Federal Government are a part of final demand, the usefulness of the model is not appreciably affected by this lack of data.

Sectors 33 and 34, Inventory Change -- these two sectors, inventory addition and inventory depletion, are included to reconcile current production with current consumption. All inventories are assumed to be held by the producing sector. For the manufacturing and processing industries, where specific data were not available, California was assumed

to contribute its share to inventory change, as measured by the California and Arizona sector's production relative to the United States sector's production.

Sector 35, Gross Private Capital Formation -- capital items such as machinery and new construction purchased by the private sectors of the economy are considered to be purchased by this "dummy" sector. Depreciation is then distributed to the using sector through the household sector, with the exception that machinery purchased by agriculture flow directly to agriculture.

Sector 36, Households -- inputs to this sector are expenditures for goods and services by private individuals. The sum of all inputs (excluding taxes) approximates "personal consumption expenditure" as estimated in the national income accounts of the Department of Commerce. Household flows to other sectors are wages and salaries, proprietors' income, depreciation, and interest.

(11) Definition of Output

For the California model, output for each of the sectors is defined in the preliminary report of the California model by Professor Harold O. Carter [op. cit.] and for Arizona sectors in the Arizona study by Tijoriwala, Martin and Bower [op. cit.]. However, for the purposes of the study at hand, it will suffice to define "gross output" of each sector in each one of the two states as the total value to the producer of all goods and services produced within California or Arizona including sectoral reservation demands.^{6/}

^{6/} Sectoral reservation demands is here defined as those goods and services which are consumed in the sectors which produce them. This concept is the counterpart of reservation demand in the theory of consumer behavior.

It should be clearly emphasized that both in California and Arizona models, output is valued at producer's rather than purchaser's value. Tables valuating output at purchasers value would be easier to prepare since most statistics record transactions at price paid by the purchaser. However, there seem to be some definite disadvantages in constructing input-output tables based on the purchasers' valuations, all of which contribute towards the instability of the coefficients matrix over time.^{1/}

(iii) Output for Agricultural Sectors

a. California

Output flows for the ten California agricultural sectors were developed largely from U.S. Department of Agriculture, California Department of Agriculture, and private industry crop and livestock statistics.

b. Arizona

Output flows for the ten Arizona agricultural sectors were also developed from the U.S. Department of Agriculture, Arizona Crop and Livestock Reporting Service, and private industry crop and livestock statistics. For the major crops grown in Arizona, the coverage was complete. For minor crops, estimates based on data in the 1959 Census of Agriculture and on information supplied by various agricultural

^{1/} A table constructed on the basis of purchaser's valuation suffer from two disadvantages, which in general are sufficient to make producer's prices a preferred system of valuation. [53, pp. 36-39] First, the x_{ij} 's under the purchaser's valuation include marketing costs; and since these costs usually vary as the output distribution changes, there is a tendency for variations in output to occur even if actual production is unchanged. Second, under the purchaser's prices system, marketing costs vary with the input structure, which is generally more stable than the output structure. Thus the added stability in the coefficient matrix usually justifies the extra statistical information necessary to compile the table in producer's prices.

specialists in the University of Arizona were made. In general, direct distributions of the value of the individual commodities were made from the 1958 data.

(iv) Inputs to Agriculture

Purchased inputs by agricultural sectors from nonagricultural sectors (rows 11 through 26 of columns 1 through 10 in Tables 1 and 5 appendix B) were derived from essentially similar sources in both California and Arizona models.

In the California model, the main sources were [54, 55, 56, 57, 58, 73] and for Arizona they were [54, 56, 57, 63, 64, 66]. In both models, the estimating procedure involved essentially six steps:

1. Expenditures on individual items were distributed to 17 agricultural sectors for the United States.
2. California's and Arizona's proportions of that expenditure were derived by scaling each sector's input down by California and Arizona percentages of acres, numbers, physical output, or value of output relative to the corresponding United States total figure for each sector. The particular measure used varied depending on the expenditure in question.
3. Results derived from 2 above by expenditure class were compared with control totals on farm cash expenditures. Unless the control totals were grossly inconsistent from the more detailed input information given in [48] for California or [55] for Arizona, the derived distributions were adjusted proportionately to meet these totals.
4. Each input was converted to producers' value using margins from [52] and other unpublished sources.
5. Each sector's inputs were adjusted for differences in definition between California and Arizona models versus the USDA model.
6. The 17 USDA sectors were then aggregated to the 10 California and Arizona sectors.

(v) Industry to Industry Flows

The construction of flows from nonagricultural industries to non agricultural industries (rows 11 through 26 of columns 11 through 26 in appendix B, Tables 1 and 5) presented special estimation difficulties.

The task of separating and distributing the thousands of products involved is beyond the capabilities of an individual researcher, even if complete current data are available. For most of the several hundred California and Arizona industries, input information is not available for any year. To develop new input information on any one industry group would require a study of major proportions. One main source of information in a usable form is the OBE input-output table for the United States.

In the case of the California model, additional data were available for the food and kindred product sectors which facilitated the disaggregation of this sector into seven sub-sectors. The input-output structure of the nonagricultural sectors was derived in most cases using technical coefficients from the modified 1958 OBE U.S. table (90 sectors) weighted by 1958 California sector outputs. That is, the value of California production in 1958 for each of the 90 sectors was used in conjunction with technical coefficients matrix (90 x 90) to obtain estimates of total purchases for each of the 90 sectors. The resulting 90 order table was aggregated to correspond to sectors in the California model.

In case of the 1958 Arizona model, the same procedure outlined above for California was used with one minor exception that Arizona used the unmodified OBE U.S. table (83 sectors) weighted by 1958 Arizona sector outputs, and aggregating the resulting 83 order table to correspond to the appropriate sectors in the Arizona model.

It should be emphasized that the above procedure assumes uniform industry technical coefficients throughout the United States. Whether such an assumption is valid or not is still a question open to continued debate pending more research and better methods of collecting regional data.

B. Empirical Fusion of the Two-State Economies

As has already been explained above, in both the California and Arizona tables, the export import relationships were estimated only on a net basis. However, to be able to fuse the two-state economies, it is desirable to estimate the import-export relationship as ideally as the data availability can allow. The following section is therefore devoted to the estimation procedure followed to obtain the gross import matrices for California and Arizona.

(1) Gross Import Matrices for Arizona and California Economies

Estimation of gross import matrices for Arizona and California constituted a difficult and challenging problem due to the fact that interstate trade data is almost completely unavailable. The procedure followed utilized any and all sources -- primary or secondary, published or unpublished, official and unofficial. In the estimation of the Arizona gross import matrix, the first step was to estimate how much each California sector exported to Arizona in the year 1958 on a gross basis. This was accomplished as follows:

a. California Sectors 1-23

The following are the major sources used for estimating the gross exports to Arizona by California sectors 1-23:

1. The Interstate Commerce Commission, Carload waybill statistics [23].

2. USDA Agricultural Marketing Service, Fruit and Vegetable Division, Washington, D.C. [62].
3. A mail questionnaire sent to 389 marketing and trade organizations throughout the state of California. In this questionnaire the organizations were asked to give the volume and/or value of the commodities shipped to Arizona and other states in the union.
4. Different commodity experts of the California Department of Agriculture were interviewed personally.

These and other sources were used either singly or in combination to arrive at a rough estimate of each sector's gross export to Arizona.

In most cases, especially where the estimates were based on ICC data, a problem of valuation did arise since most of the ICC commodity classifications do not correspond with the Standard Industrial Classification (SIC) on which the sectoring pattern of the California and Arizona models are based.

Thus the second step was to convert tonages of different commodity groups into producers value. To accomplish this the following sources were used:

1. ICC has made a study in which they correlate the freight revenue and wholesale value at destination of commodities transported by Class I line-haul railroads [24]. This source was used whenever appropriate to impute dollar values to different commodity groups. To approximate the producers value as close as possible, the wholesale value at destination was adjusted for transportation charges based on the freight revenues published by the ICC.
2. U.S. Department of Labor, Wholesale Prices and Price Indexes [72].

3. U.S. Department of Agriculture, Crop Values-Season average prices received by farmers [60].

4. The Claims Department of the Southern Pacific Railroad keeps a record of number of claims and revenue paid for such claims in case of spoilage of freight haul. This source was used with the other sources to arrive at some value estimates of some categories of commodity whose information could not be obtained elsewhere.

5. When the above sources and other published sources were not adequate to establish the value of a certain commodity group, the local wholesalers of equivalent commodities were contacted for information.

The last step was to examine the figures obtained above for completeness of sectoral coverages. In most cases it was found that the data represented only a few subcomponents of sectoral outputs. In such cases the preliminary figure was "blown-up" in proportion to sub-sector contribution of the appropriate sectoral outputs. For example, the preliminary gross export figure for California sector 2 (poultry and eggs) was \$9,843,000. This figure was based on data for "farm and nonfarm eggs" sub-component of sector 2. Since "farm and nonfarm eggs" constituted only 0.508470 of the 1958 sector 2 output, the figure was adjusted upward by a factor of 1.966684 (i.e. $\frac{1}{0.508470}$). The resulting final figure was \$19,358,071 (or \$9,843,000 x 1.966684).

The implicit assumption in the above procedure is that a sub-component of any sector (where complete data was not available) contributed to that sector's gross trade in the same proportion as it contributed to the sector's gross output.

b. Arizona Sectors 1-23

In estimating the Arizona gross import for sectors 1-23, the same procedures were used as described above. However, unlike the California import matrix, where several sources were used, the major sources were [23, 24, 62 and 72].

c. California and Arizona Sectors 24 and 26

Complete lack of data on both California and Arizona sector 24 (Selected Services) prevented estimation of actual trade flows for this sector between California and Arizona. Consequently, a net relationship was employed. However, since both California and Arizona sectors 24 are net exporters it was assumed that no net flows occurred between the two states. Note, however, that absence of net relationship need not exclude the phenomenon of cross-hauling.

The same reasoning was employed for California and Arizona sector 26 (Unallocated Services). Both were net importers and it was assumed that no cross-hauling occurred between the two states.

d. Sector 25 -- Trade and Transportation

Due to complete lack of data, it was here assumed that trade and transportation sector's contribution to exports was in the same proportion as its contribution to total domestic output of all sectors. Thus the following relationships were employed to arrive at an estimate for the gross export of sector 25 in each one of the two states.

$$\frac{t_{25}^{ca}}{x_{25}^c} = \frac{\text{Total gross exports of California sectors 1-30 excluding sectors 25 and 28}}{\text{Total GDO of California sectors 1-30 excluding sectors 25 and 28}}$$

where:

t_{25}^{ca} = Gross export of California sector 25 to Arizona

x_{25}^c = Gross output of California sector 25

also:

$\frac{t_{25}^{ac}}{x_{25}^a}$ = Total gross exports of Arizona sectors 1-30 excluding sectors 25 and 28

Total GDO of California sectors 1-30 excluding sectors 25 and 28

where:

t_{25}^{ac} = Gross export of Arizona sector 25

x_{25}^a = Gross output of Arizona sector 25

The consideration here was that at least the total transportation cost is closely related to the volume of commodities hauled between the two states.

e. Sectors 27 and 31

Gross exports for these sectors -- scrap and by-products, households and governments respectively -- were not estimated. Despite the lack of data, it was felt that there is no basis upon which such estimates could be justified.

f. Sectors 29 and 30 -- Maintenance Construction and New Construction

Lack of data dictated the adoption of the following procedure:

$\frac{t_{29}^c}{x_{29}^c}$ = Total gross exports of California sector 1-26 excluding sector 25

GDO for sectors 1-26 excluding sector 25

$$\frac{t_{29}^a}{x_{29}^a} = \frac{\text{Total gross exports of Arizona sector 1-26 excluding sector 25}}{\text{GDO for Arizona sectors 1-26 excluding sector 25}}$$

$$\frac{t_{30}^c}{x_{30}^c} = \frac{\text{Total gross exports of California sectors 1-29 excluding sectors 25, 27 and 28}}{\text{GDO for California sectors 1-29 excluding sectors 25, 27 and 28}}$$

$$\frac{t_{30}^a}{x_{30}^a} = \frac{\text{Total gross exports of Arizona sectors 1-29 excluding 25, 27 and 28}}{\text{GDO for Arizona sectors 1-29 excluding sectors 25, 27 and 28}}$$

The resulting gross trade figures for California and Arizona are given in Table V-1.

C. Estimation of Water Requirements

Water is a key factor of production in many industries in both states. Some quantities of this scarce resource are used by all sectors of the California and Arizona and, in both states, agricultural sectors are especially heavy consumers. Definitional problems are encountered in the process of estimating water requirements. These definitional problems will be dealt with first followed by a discussion of the method of estimation of water requirements in the two state economies.

(1) Definitions

Water usage is conceived to be of two general types -- withdrawal and non-withdrawal. The non-withdrawal uses include navigation, recreation, waste disposal and wildlife. Although these uses are very important, they are not easily quantified. Consequently, non-withdrawal uses are not considered in the present study. Withdrawal uses are those which are actually transported from some source, either surface or underground, to the point of use. These can be quantified and three concepts relating to them are defined below:

a. Water Intake

Water intake is defined as the quantity of water which an industry withdraws from its source of supply. Any water loss through evaporation or some other process after the industry has withdrawn it is included as part of water intake. Not included as water intake is that water which is lost before the industry withdraws the water. This distinction is important in the handling of surface water used in irrigation. For example -- water intake for sector 4 (food and food grains) is that water actually pumped from wells for sector 4 and/or that water actually withdrawn from public irrigation canals. Not included as water intake is the amount of water lost in transportation to the farmers' first point of withdrawal.

b. Gross Water Used

Gross water used refers to the total amount of water used including recirculation. This concept takes into account the fact that many industries are able to use a given amount of water more than once through recirculation or treatment systems. Algebraically:

$$\text{Gross water used} = (\text{water intake}) + (\text{reusage})$$

c. Water Consumed

Consumptive use of water is the quantity discharged to the atmosphere or incorporated into the products of the process(es) in which it was used.

(ii) Estimation Procedures

The estimation of California and Arizona water requirements involves two steps: (1) the estimation of control totals for each major grouping of sectors -- livestock, crops, industry and commercial, and

(2) the distribution of water between sectors. Although nation-wide interest in the problem of water scarcity has been rapidly growing in recent years, the data availability for comprehensive study on water usage is still a major problem. Consequently, the California and Arizona studies relied on many varied sources of information in arriving at final estimates of sectoral water demands. These sources and techniques of estimation are outlined below:

a. Sectors 1-3 -- Livestock

The preliminary estimates for livestock water withdrawals include only drinking water requirements. The equation used was:

$$\text{Required drinking water for a class of animals, 1958} = \left[\begin{array}{l} \text{Daily water} \\ \text{requirement} \\ \text{per animal} \end{array} \right] \left[\begin{array}{l} \\ 365 \text{ days} \\ \end{array} \right] \left[\begin{array}{l} \text{Average inven-} \\ \text{tory for each} \\ \text{class in 1958} \end{array} \right]$$

Drinking water requirements were defined as average amount consumed and not as a minimum requirement for survival.

For California sector 1-3 sources [17, 36, 44 and 49] were used and sources [2, 16, 36, 43, 48, 61 and 67] for Arizona sectors 1-3.

For sectors 1-3 the estimates of required "water intake" are equal to the "water consumed" concepts. The reasoning is that all water intake is evaporated, drunk, or lost and is, therefore, consumed. Also, there is no apparent recirculation, so "water intake" and "gross water used" are identical quantities.

b. Sectors 4-10 -- Crops

Total water requirements for the seven agricultural crop sectors were computed in the following fashion:

$$\text{Total water require-} \\ \text{ment of crop 1, 1958} = \left[\begin{array}{l} \text{Water requirement} \\ \text{per irrigated acre} \end{array} \right] \left[\begin{array}{l} \text{Acres of crop 1} \\ \text{irrigated, 1958} \end{array} \right]$$

Total water requirements for individual crops were then aggregated according to sectors 4 through 10. Total acreage under cultivation for each crop was made to agree with the one used in computation of gross domestic output. Total acreage was separated into irrigated and non-irrigated using sources [65 and 59] for California and [71 and 65] for Arizona.

In all cases the estimated water intake requirements are for ground water pumped or surface water taken by the farmer at his first point of acceptance; that is, water purchased by the farmer. This necessarily includes water which is lost through evaporation or seepage after the farmer receives it -- not included are conveyance losses occurring prior to the farmer's acceptance.^{8/}

c. Sectors 11-21 -- Manufacturing and Processing

The estimates of California water intake by sectors 11-21 were obtained largely from sources [69 and 5]. Source [5] gives estimates according to 3-digit SIC sectors which allowed reaggregation in appropriate sectors. For Arizona sectors 11-21 [69] was the major source.

To determine the gross water and water consumed for each industry the following procedures were used. For California, it was assumed that gross water and water discharged is related to California water intake as the total United States gross water and water discharged is related to total United States water intake for each industry.

^{8/} For a thorough discussion of additional sources and for minor qualifications see Tijoriwala *et al.* [op. cit.] and Carter [op. cit.] preliminary report for California model 1958.

California water consumed was then obtained by subtracting water discharged from water intake.

For Arizona initial estimates were made for each industry assuming that the ratio of water to shipments is the same for Arizona as the United States as a whole. This yielded a general equation of the form:

$$\frac{\text{United States water intake, Industry } y}{\text{United States shipments, Industry } y} = \frac{\text{Arizona water intake}}{\text{Arizona shipment of } y}$$

Data on shipments came from [70] and water requirements for the United States are reported in [69].

In certain cases, part of the total United States water requirements were not included in the California total because certain national industries were not present in California. For example, wet corn milling was not included in California sector 11 and sugar cane was excluded from sector 15 because of the absence of these industries in California.

d. Sector 23 -- Utilities

The sector has three components for which water requirements must be obtained: electric light and power, telephone and telegraph and gas. The most important of these quantitatively for water is electric light and power. The assumption was made that water intake was proportional to annual output of electrical power. Thus the following relation was used:

$$\frac{\text{Water required, 1960}}{\text{Electricity produced, 1960}} = \frac{\text{Estimated water required, 1958}}{\text{Electricity produced, 1958}}$$

Data on water requirements for electric power generating companies was from [36] and data on electricity produced in 1958 and 1960 were from [68].

e. Combined Commercial Sectors 24-26, 29 and 30

There is no set of reliable, consistent data which give the water requirements of the various trade, transportation, service and construction industries. Part of the reason is that commercial requirements for water are quantitatively very small.

Consequently, water estimates for these commercial sectors were adopted from the Lofting and McGauley Economic evaluation of water Part III [35 op. cit]. The estimates for the Arizona's combined commercial sectors were given in Tijoriwala et al. [51 Part II, op. cit.].

The resulting estimates for California and Arizona sectors are given in Tables V-4.

(a) The Film Film

The film table for California (Table 5, Appendix B) gives an indication of the types of goods and services by sector and region of origin and destination. In this table, the contribution of various U.S. states (20%) gives the estimate of national water imports from California (as a percentage, the California gives service to around). The rest of the table gives the gross water requirements by all various sectors. These estimates are shown in Table 5 of this report.

Similarly, the gross water for California sectors from various sources is shown in Table 5 of this report. A comparison of estimates in Table 5 and 6 indicates that the water requirements for the various sectors are relatively small. It would seem, however, to be significant

V. ANALYSIS OF EMPIRICAL RESULTS

A. Economic Interdependence

The results provided by this study are of a qualified nature. They are based on economic models which require restrictive assumptions about the behavior of the economic units involved. The results are also conditioned by the simplifying assumptions implied in the various estimation procedures adopted. Thus, the results reported here are approximations of economic reality and their reliability is not easily assessed.

Let us now proceed to examine the empirical results. The flows, the technical coefficients and the resulting inverse for the California-Arizona model are given in Tables 9, 10 and 11 of appendix B respectively.

(1) The Flow Table

The flow table for California-Arizona (Table 9, appendix B) gives the interindustry flows of goods and services by sector and region of origin and destination. In this table, the equivalent of quadrant II (Table III-1) gives the estimates of Arizona gross imports from California (or equivalently, the California gross exports to Arizona). Summing down each column of this part of the table gives the gross imports from California by all Arizona sectors. These estimates are tabulated in Column 1 of Table V-1.

Similarly, the gross imports for California sectors from Arizona are tabulated in column 2 of Table V-1. A comparison of estimates in columns 1 and 2 indicates whether a sector in one of the states has positive or negative balance of trade with respect to the corresponding

TABLE V-1

California-Arizona Gross Trade Relations, 1958
(thousand dollars)

Sector number	Sector title	Arizona gross im-ports from California	California gross im-ports from Arizona	California sectors		Arizona sectors	
				Surplus	Deficit	Surplus	Deficit
		1	2	3	4	5	6
1	Meat animals and products	943	1,776	--	833	833	--
2	Poultry and eggs	2,900	387	2,513	--	--	2,513
3	Farm dairy products	855	1,595	--	740	740	--
4	Food and feed grains	777	139	638	--	--	638
5	Cotton	1,549	125	1,424	--	--	1,424
6	Vegetables	626	137	489	--	--	489
7	Fruits (excluding citrus) and nuts	26	110	--	84	84	--
8	Citrus fruit	112	25	87	--	--	87
9	Forage crops	282	56	226	--	--	226
10	Miscellaneous agriculture	227	132	95	--	--	95
11	Grain mill products	1,244	1,215	29	--	--	29
12	Meat and poultry processing	3,392	228	3,164	--	--	3,164
13	Dairy products	814	548	266	--	--	266
14	Canning, preserving, freezing	590	1,822	--	1,232	1,232	--
15	Miscellaneous agricultural processing	3,520	638	2,882	--	--	2,882
16	Chemicals and fertilizers	2,161	290	1,871	--	--	1,871
17	Petroleum	39	489	--	450	450	--
18	Fabricated metals and machinery	7,431	3,520	3,911	--	--	3,911
19	Aircraft	4,362	800	3,562	--	--	3,562
20	Primary metals	7,620	619	7,001	--	--	7,001

(Continued on next page.)

Table V-1 continued.

Sector number	Sector title	Arizona gross im-ports from California	California gross im-ports from Arizona	California sectors		Arizona sectors	
				Surplus	Deficit	Surplus	Deficit
		1	2	3	4	5	6
21	Other manufacturing	5,789	1,044	4,745	--	--	4,745
22	Mining	5,636	177	5,459	--	--	5,459
23	Utilities	2,224	590	1,634	--	--	1,634
24	Selected services	4,558	714	3,844	--	--	3,844
25	Trade and transportation	4,987	789	4,198	--	--	4,198
26	Unallocated services	21,435	1,712	19,723	--	--	19,723
	TOTAL	84,099	19,677	67,761	3,339	3,339	67,761

sector in the other state. This relationship is tabulated in columns 3, 4, 5 and 6 (Table V-1). For example, California sector 1 (meat animals and products) required \$1,776,000 worth of its product from Arizona and Arizona sector 1 required only \$943,000 worth of meat animals and products from California. Thus California sector 1 has a deficit of \$833,000 and Arizona sector 1 a surplus of \$833,000. This formulation is more realistic than a consideration of net relationships since it recognizes bilateral trade relationship in similar commodities. Consideration of only the first 10 sectors (columns 1 and 2) indicates that Arizona agricultural sectors have a net deficit of \$3,815,000 (\$8,297,000-\$4,482,000) with respect to their trade relationship with California sectors.

Estimates in columns 4 and 6 (Table V-1) indicate that only five California sectors have a negative trade balance as compared to 21 sectors in Arizona. Consequently Arizona sectors are much more dependent on California than California sectors are dependent on Arizona.

(11) Technical Coefficients

Table 10 (appendix B) gives the direct requirements per dollar of output in the combined California-Arizona economy. With reference to Table III-1, summing down column 1 in quadrants I and III gives the direct requirements per dollar of output in California sector 1 (meat animals and products). The partial sum (quadrant III, column 1) gives direct import requirements from Arizona by California sector 1 per dollar of output in California sector 1. Thus the elements in quadrant III of Table B-10 are the California gross import coefficients obtained by the operation indicated in equation (III-4b).

Similarly, summing down column 1 in quadrant II and IV gives the direct requirements per dollar of Arizona sector 1 output. The partial sum (column 1 of quadrant IV) gives the direct gross import requirement by Arizona sector 1 (meat animals and products) from California to sustain a dollar worth of output in Arizona sector 1. Thus the elements of quadrant II (Table B-10) are the Arizona gross import coefficients and are obtained through the operations indicated by the two-region model equation (III-4d).

(iii) The California Arizona Inverse

Table B-11 gives the estimates of direct plus indirect requirements per dollar of final demand for the combined California-Arizona economy.

a. California Dependence on Arizona

With reference to Table B-11 summing down the first column in quadrants I and III gives the estimate of direct plus indirect requirements from both California and Arizona sectors per dollar's worth of final demand in California sector 1 (meat animals and products). This figure amounts to \$1.646616. The partial sum (column 1 rows 1-26 in quadrant III of Table B-11) gives the estimate of direct plus indirect output generated in Arizona to sustain one dollar of final demand for products of California sector 1. The figure amounts to \$.004684 or approximately 0.5 cents. The ratio of the partial to total effects give a rough indication of California sector 1 dependence on Arizona sectors. These partial and total effects for the 26 endogenous sectors for California are given in columns 1 and 2 respectively (Table V-2), and their ratios are given in column 3 of the same table. An examination of column 4 (Table V-2) ranks the quotients of column 3 in the order of

decreasing magnitudes. This column shows that California sectors 3 (farm dairy products), 1 (meat animals and products), 11 (grain mill products), and 13 (dairy products) and 2 (poultry and eggs) respectively are the five California sectors which are most dependent on Arizona sectors either directly through importing from Arizona sectors or indirectly through buying from other California sectors which are themselves interdependent with other Arizona sectors.

b. Arizona Dependence on California

With reference to Table B-11, quadrants II and IV give the direct plus indirect requirements per dollar of final demand for each Arizona sector. For example, summing down the first column (quadrants II and IV, Table B-11) gives the direct plus indirect requirements for Arizona sector 1 (meat animals and products) from both Arizona and California sectors to sustain a dollar worth of final demand in Arizona sector 1. This sum (\$1.323414) together with similar sums for all 26 endogenous sectors in the Arizona economy are tabulated in column 2 (Table V-3). The partial sum (column 1, quadrant II) show the direct plus indirect import requirement from California to sustain a dollar worth of final demand in Arizona sector 1. The partial sum (\$.017749) together with similar sums for all the endogenous sectors in Arizona are tabulated in column 1 (Table V-3). The ratio of the partial sum to total sum for Arizona sector 1 (.013412) together with similar ratios for all Arizona endogenous sectors are tabulated in column 3 (Table V-3) and are ranked in the order of decreasing magnitudes in column 4 (Table V-3). Thus, as in the case of Table V-2, ratios of partial to total direct plus

A Measure of California Dependence on Arizona

California sectors		a/	b/	1÷2	
Sector number	Sector title	Partial effects	Total effects	Dependence	Rank
		1	2	3	4
1	Meat animals and products	.004684	1.646616	.002845	2
2	Poultry and eggs	.003259	2.169063	.001503	5
3	Farm dairy products	.005178	1.752008	.002956	1
4	Food and feed grains	.001260	1.644145	.000766	9
5	Cotton	.000639	1.394633	.000458	12
6	Vegetables	.000444	1.385411	.000321	18
7	Fruit (excluding citrus) and nuts	.000499	1.445487	.000345	17
8	Citrus fruit	.000289	1.258847	.000230	22
9	Forage crops	.000483	1.343334	.000360	16
10	Miscellaneous agriculture	.000547	1.240339	.000441	14
11	Grain mill products	.003817	1.700230	.002245	3
12	Meat and poultry processing	.002279	2.026783	.001124	6
13	Dairy products	.003691	2.341098	.001577	4
14	Canning, preserving, freezing	.001884	2.086032	.000903	7
15	Miscellaneous agricultural processing	.000796	1.759841	.000452	13
16	Chemicals and fertilizers	.000506	1.787861	.000283	20
17	Petroleum	.000545	2.387331	.000228	23
18	Fabricated metals and machinery	.001406	1.682961	.000835	8
19	Aircraft	.000542	1.502493	.000361	15
20	Primary metals	.001099	1.699747	.000647	10
21	Other manufacturing	.000488	1.640646	.000297	19
22	Mining	.000878	1.496255	.000587	11
23	Utilities	.000110	1.397200	.000079	26
24	Selected services	.000472	1.742568	.000271	21
25	Trade and transportation	.000141	1.365480	.000103	25
26	Unallocated services	.000186	1.387881	.000134	24

a/ Indicate production generated in Arizona alone due to \$1 increase in final demand in specific California sectors.

b/ Indicate production generated in both California and Arizona due to \$1 increase in final demand in California sectors.

TABLE V-3

A Measure of Arizona Dependence on California

Arizona sectors		Partial effects ^{a/}	Total effects ^{b/}	1 ÷ 2 Index of dependence	Rank
Sector no.	Sector title				
		1	2	3	4
1	Meat animals and products	.017749	1.323414	.013412	26
2	Poultry and eggs	.873685	2.936274	.297549	1
3	Farm dairy products	.077027	1.710689	.045027	12
4	Food and feed grains	.059232	1.298778	.045606	10
5	Cotton	.023572	1.254435	.018791	20
6	Vegetables	.018217	1.110893	.016399	22
7	Fruit (excluding citrus) and nuts	.033150	1.201308	.027595	16
8	Citrus fruit	.024929	1.196709	.020831	19
9	Forage crops	.017578	1.105732	.015897	23
10	Miscellaneous agriculture	.019046	1.206302	.015789	24
11	Grain mill products	.117391	1.701741	.068983	6
12	Meat and poultry processing	.129049	2.170525	.059455	9
13	Dairy products	.074511	2.239140	.033277	13
14	Canning, preserving, freezing	.294466	1.656501	.177764	2
15	Miscellaneous agricultural processing	.143991	1.622442	.088750	4
16	Chemicals and fertilizers	.114120	1.482951	.076955	5
17	Petroleum	.030054	1.227249	.024489	18
18	Fabricated metals and machinery	.152093	1.605587	.094727	3
19	Aircraft	.111969	1.731637	.064661	7
20	Primary metals	.126518	2.070824	.061095	8
21	Other manufacturing	.070349	1.559467	.045111	11
22	Mining	.045912	1.628320	.028196	17
23	Utilities	.022967	1.395421	.016459	21
24	Selected services	.046595	1.453534	.032056	14
25	Trade and transportation	.018108	1.332446	.013590	25
26	Unallocated services	.039303	1.379694	.028487	15

a/ Indicate production generated in California alone due to \$1 increase in final demand in specific Arizona sectors.

b/ Indicate production generated in both California and Arizona due to \$1 increase in final demand in specific Arizona sectors.

indirect effects afford a rough indication of Arizona sectors' dependence on California.

Column 4 (Table V-3) indicate that Arizona sectors 2 (poultry and eggs), 14 (canning, preserving and freezing), 18 (fabricated metals and machinery), 15 (miscellaneous agricultural processing) and 5 (chemicals and fertilizers) are among the five sectors which are most dependent on California economic activity.

B. Water Use Interdependence

In part A above, we were concerned with empirical analysis of economic or product interdependence between the two states.

In part B of this chapter we will concern ourselves with the analysis of water use interdependence. For convenience of exposition the analysis is divided into two parts -- intrastate and interstate analysis. The significance of this separation will become evident in Chapter VI when we discuss the implication of the present analysis to intrastate and interstate water allocation policies.

(1) Intrastate Analysis

In this section, water intake, water coefficients, water multipliers and value added per unit of water intake are presented for both California and Arizona sectors.

a. Water Intake

Table V-4 gives the estimates of the water requirements by California and Arizona sectors in million gallons. These are based on the water intake concept and estimation procedures discussed in chapter IV above. Out of 8,281,773 million gallons of total water intake by California sectors, 7,705,426 million gallons (approximately 93 percent) was used

TABLE V-4

Water Requirements by California and Arizona Sectors, 1958

Sector number	Sector title	Water intake	
		California	Arizona
		million gallons	
1	Meat animals and products	12,634	19,016
2	Poultry and eggs	1,559	20
3	Farm dairy products	10,603	2,144
4	Food and feed grains	1,353,455	578,517
5	Cotton	977,553	616,711
6	Vegetables	698,155	154,304
7	Fruit (excluding citrus) and nuts	820,078	5,512
8	Citrus	254,392	35,980
9	Forage	3,075,056	523,997
10	Miscellaneous agriculture	501,941	56,151
11	Grain mill products	1,072	145
12	Meat and poultry processing	15,145	198
13	Dairy products	15,558	147
14	Canning, preserving, freezing	16,585	58
15	Miscellaneous agri. processing	26,138	325
16	Chemicals and fertilizers	31,892	383
17	Petroleum	54,463	17
18	Fabricated metals and machinery	16,339	94
19	Aircraft and parts	6,192	137
20	Primary metals	6,032	10,000
21	Other manufacturing	114,476	496
22	Mining	22,945	15,065
23	Utilities	124,853	17,136
24-26	Combined commercial	124,357	7,630
	TOTAL	8,281,773	2,044,183

by agricultural production sectors, 74,498 million gallons (approximately 1 percent) was used by agricultural processing sectors and the remaining 501,549 million gallons (approximately 6 percent) was used by manufacturing, mining and service sectors.

For the Arizona economy, the total water intake was 2,044,183 million gallons. Out of this total, 1,992,352 million gallons (approximately 97 percent) went to agricultural production sectors, 873 million gallons (approximately 0.04 percent) went to agricultural processing and the remaining 50,958 million gallons (approximately 3 percent) went to manufacturing, mining and service sectors.

Thus, in both California and Arizona Agricultural sectors, especially crop sectors, are the heaviest water users.

b. Water Coefficients

From Table V-4, direct and direct plus indirect water coefficients (W^*) for California and Arizona sectors are derived.^{1/} The resulting coefficients are ranked in the order of decreasing magnitudes and the results are presented in Table V-5.

Let us now examine the meaning of the coefficients in Table V-5. Column 1 gives the direct water coefficients for the individual endogenous California sectors in million gallons per \$1,000 output. In column 2 these coefficients are ranked from the largest to the smallest. An examination of the rank column 2 reveals that out of the ten largest

^{1/} The procedure for deriving these coefficients is explained in Chapter III above. The mathematical equivalents of direct and direct plus indirect water coefficients are given by equations (III-10) and (III-15).

TABLE V-5

Direct and Direct plus Indirect Water Coefficients for California and Arizona Sectors, 1950
(million gallons per \$1,000)

Sector number	Sector title	California sectors				Arizona sectors				9	10
		1	2	3	4	5	6	7	8		
		Direct water coefficients	Rank ^{a/}	Direct plus indirect water coefficients	Rank ^{a/}	Direct water coefficients	Rank ^{a/}	Direct plus indirect water coefficients	Rank ^{a/}		
1	Meat animals and products	.041801	10	3.748446	4	.133143	8	3.213629	10	A > C	A < C
2	Poultry and eggs	.004782	20	1.386255	13	.002464	24	6.800232	3	A < C	A > C
3	Farm dairy products	.026803	11	4.211359	3	.083311	10	6.062987	5	A > C	A > C
4	Food and feed grains	7.645343	2	7.952031	2	20.542469	1	21.209544	1	A > C	A > C
5	Cotton	3.257761	3	3.497315	5	4.089731	3	4.427127	6	A > C	A > C
6	Vegetables	1.273657	7	1.387276	12	2.089679	6	2.133139	12	A > C	A > C
7	Fruit (excluding citrus) and nuts	2.021884	4	2.082277	5	3.242353	5	3.316487	9	A > C	A > C
8	Citrus	1.601713	5	1.650733	10	3.634711	4	3.849880	7	A > C	A > C
9	Forage	14.886410	1	14.962761	1	15.294717	2	15.341854	2	A > C	A > C
10	Miscellaneous agriculture	1.466330	6	1.807819	8	2.088252	7	3.419601	8	A > C	A > C
11	Grain mill products	.002432	25	1.805976	9	.006230	17	6.275990	4	A > C	A > C
12	Meat and poultry processing	.012297	17	1.525662	11	.003837	21	1.939856	13	A < C	A > C
13	Dairy products	.020219	14	1.948201	7	.003186	22	3.019690	11	A < C	A > C
14	Canning, preserving, freezing	.010218	18	0.636540	14	.013939	13	0.284591	5	A > C	A < C
15	Miscellaneous agri. processing	.013980	16	0.241594	15	.006442	15	0.779347	14	A < C	A > C
16	Chemicals and fertilizers	.022189	13	0.069426	17	.009832	14	0.127910	16	A < C	A > C
17	Petroleum	.017255	15	0.041144	19	.006410	16	0.011877	26	A < C	A < C
18	Fabricated metals and machinery	.003266	24	0.010542	24	.000950	26	0.013198	22	A < C	A > C
19	Aircraft and parts	.001735	26	0.005034	26	.001390	25	0.011902	25	A < C	A > C
20	Primary metals	.004936	19	0.018818	21	.060821	11	0.106473	18	A > C	A > C
21	Other manufacturing	.022725	12	0.038514	20	.002822	23	0.061560	20	A < C	A > C
22	Mining	.058085	8	0.070328	16	.047898	12	0.072130	19	A < C	A > C
23	Utilities	.056169	9	0.068608	18	.091391	9	0.106678	17	A > C	A > C
24	Selected services	.004308	21 =	0.011473	23	.004154	18 =	0.012483	23	A < C	A > C
25	Trade and transportation	.004308	21 =	0.010098	25	.004154	18 =	0.012601	24	A < C	A > C
26	Unallocated	.004308	21 =	0.013862	22	.004154	18 =	0.025763	21	A < C	A > C

a/ Ranked in the order of decreasing magnitudes.

b/ The equal signs after the ranks of sectors 24-26 indicate that these sectors have the same ranking for the direct water coefficients.

water users, eight are agricultural sectors. From the largest to smallest users these include forage crops, food and feed grains, cotton, fruit (excluding citrus) and nuts, citrus fruit, miscellaneous agriculture, vegetables and meat animals and products, respectively. The only agricultural sectors not included in the first ten largest water users are poultry and eggs, and farm dairy products.

However, if we examine the direct plus indirect water intake coefficients (based on California inverse alone) and their ranks in columns 3 and 4 respectively we notice the following: First, the direct plus indirect water intake coefficients are all larger than their respective direct water coefficients. For example, the first three sectors, meat animals and products, poultry and eggs, and farm dairy products, respectively have the lowest water intake coefficients relative to other agricultural sectors. But their corresponding direct and indirect water intake coefficients are 89.67, 289.89 and 157.12 times as large as their corresponding direct water intake coefficients. The consistently larger magnitudes of these direct plus indirect coefficients than their respective direct water coefficients is due to sectoral interdependencies in an economy.^{2/} Thus the above comparison reveals the significance of considering not only direct but also direct plus indirect water intake coefficients. Second, the examination of columns 2 and 3 indicate that out of the 26 endogenous sector rankings of direct versus direct plus indirect water intake coefficients, only two sectors (food and feed

^{2/} The extent and significance of the sectoral interdependencies will become evident when water multipliers are discussed below.

grains, and forage crops) have not changed their relative positions with respect to their water use patterns.

An examination of the direct, and direct plus indirect water intake coefficients (based on Arizona inverse alone) for Arizona sectors (Table V-5, columns 5-8) reveal essentially the same picture as in the case of California sectors presented above. First, the agricultural sectors emerge as the heaviest water users. Nine out of the ten agricultural sectors in Arizona are among the heaviest water users. In the case of the California sectors, the corresponding number was eight. Second, a comparison of the ranking of the direct plus indirect water intake coefficients (column 8) with the ranking of the direct water intake coefficients (column 6) indicates that, as in the case of California, only two sectors have maintained their relative ranks in the comparison. The other 24 coefficients have changed their relative positions with respect to water use patterns. Third, as in the case of California sectors the individual sectors' direct plus indirect water intake coefficients are consistently larger than their direct water intake coefficient counterparts, and for the same reason.

c. Water Multipliers

Both the unweighted and weighted water multipliers, corresponding to equations (III-16) and (III-17) respectively, and their rankings are presented in Table V-6 for California and Arizona sectors.

The unweighted multipliers are given in million gallons of water intake per \$1,000 of final demand. Column 2, Table V-6, ranks the unweighted water multipliers for California sectors in the order of decreasing magnitudes. Out of the ten largest multipliers for individual

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The unweighted multipliers are given in million gallons of water intake per \$1,000 of final demand. Column 2, Table V-6, ranks the unweighted water multipliers for California sectors in the order of decreasing magnitudes. Out of the ten largest multipliers for individual

endogenous sectors, three are in agriculture, five in agricultural processing and two in manufacturing and mining sectors. Before any conclusions are drawn from this analysis, it is necessary to reiterate the comment made in Chapter III that these unweighted water multipliers are merely ratios which say little about absolute water requirements by various sectors.^{3/}

The weighted multipliers are given in million gallons of water intake per 10 percent change in final demand. Thus, unlike the unweighted water intake multipliers which are derived by considering a \$1,000 in final demand of each sector, the weighted multipliers are derived by allowing a uniform horizontal growth (change) to occur in the level of existing final demand. Consequently, the weighted multipliers take into account the differentials in growth potentials and patterns by different sectors.^{4/}

In column 6 (Table V-6) these weighted multipliers for California sectors are ranked in the order of decreasing magnitudes. Out of the largest 10 multipliers of the 26 California endogenous sectors, five are in agriculture, five in agricultural processing and none in manufacturing and mining. A similar comparison, using the unweighted multipliers, gives three sectors in agriculture, five in agricultural processing and two in manufacturing and mining.

^{3/} For further comments on the implications and limitations of these multipliers as derived in this study, the reader is referred back to Chapter III.

^{4/} Note, however, that these multipliers, like their unweighted counterparts, are derived using a non-capacity model. The possible biases resulting from the failure to allow for possible capacity restraints in certain sectors are discussed in Chapter III, section E.

TABLE V-6

Water Multipliers -- California and Arizona Sectors, 1958

Sector number	Sector title	Unweighted multipliers ^{a/}				Weighted multipliers ^{b/}			
		1	2	3	4	5	6	7	8
		California	Rank	Arizona	Rank	California	Rank	Arizona	Rank
1	Meat animals and products	141.500	4	24.137	7	8,697	15	36,489	2
2	Poultry and eggs	289.890	2	2759.834	1	28,030	8	4,868	9
3	Farm dairy products	157.123	3	72.775	6	27,524	9	2,678	12
4	Food and feed grains	1.040	23	1.032	23	4,127	21	26,357	3
5	Cotton	1.073	22	1.082	21	104,465	3	66,675	1
6	Vegetables	1.089	21	1.021	25	51,979	5	15,674	4
7	Fruit (excluding citrus) and nuts	1.030	25	1.023	24	18,911	12	528	20
8	Citrus	1.031	24	1.059	22	23,640	10	3,743	10
9	Forage	1.005	26	1.003	26	5,147	19	6,982	7
10	Miscellaneous agriculture	1.233	18	1.638	18	18,912	11	2,027	13
11	Grain mill products	742.589	1	1007.382	2	37,818	6	6,428	8
12	Meat and poultry processing	124.068	5	505.566	4	169,922	1	9,010	6
13	Dairy products	96.355	6	947.800	3	132,738	2	11,830	5
14	Canning, preserving, freezing	62.296	7	20.417	9	101,098	4	110	23
15	Miscellaneous agri. processing	17.281	8	120.979	5	37,140	7	3,590	11
16	Chemicals and fertilizers	3.129	12	13.010	11	4,371	20	302	21
17	Petroleum	2.384	15	1.853	16	5,465	18	2	26
18	Fabricated metals and machinery	3.228	10	13.893	10	3,224	23	88	24
19	Aircraft and parts	2.901	13	8.563	12	1,084	24	84	25
20	Primary metals	3.812	9	1.751	17	571	26	1,028	17
21	Other manufacturing	1.695	17	21.814	8	10,734	13	648	18
22	Mining	1.211	20	1.506	19	821	25	1,646	14
23	Utilities	1.221	19	1.167	20	7,953	17	1,154	16
24	Selected services	2.663	14	3.005	15	3,423	22	216	22
25	Trade and transportation	2.344	16	3.033	14	8,315	16	633	19
26	Unallocated	3.218	11	6.202	13	11,979	14	1,628	15

a/ Million gallons of water intake per \$1,000 output.

b/ Million gallons of water intake per 10 percent change in final demand.

The above analysis using the multipliers for California sectors reveals the following:

1. All the agricultural processing sectors in California fall within the 10 out of the 26 endogenous sectors with the largest value of the multiplier. This observation holds regardless of whether one uses the weighted or unweighted multipliers.

2. Five out of the ten agricultural sectors rank among the ten sectors with the largest multipliers based on the weighted multiplier comparison. Based on the unweighted multipliers the corresponding number is only three.

3. Out of a total of 15 agriculture and agricultural processing sectors 12 of them rank among the 15 out of 26 California endogenous sectors with the largest values of the multiplier.^{5/}

4. A comparison of columns 2 and 6 (Table V-6) indicate that the relative positions of all California sectors (except sector 25 -- trade and transportation) changed as a result of the consideration of both the weighted and unweighted multipliers. For Arizona sectors, all changed their ranks based on the unweighted multipliers when the comparison was based on the weighted multipliers.

Consideration of the multipliers for Arizona sectors gives essentially similar results as in the case of California sectors. These results are also tabulated in Table V-6. Based on the unweighted multipliers, three agricultural production sectors, five agricultural processing sectors and two manufacturing sectors are among the ten Arizona sectors that rank highest in their multiplier effects. However,

^{5/} This conclusion is based on the weighted multiplier analysis only.

based on the weighted multiplier comparison, out of the ten Arizona sectors ranking highest in their multiplier effects, seven of them are agricultural production sectors, and the remaining three are agricultural processing sectors. Consideration of the 15 agriculture and agricultural processing sectors indicate that 13 of them rank among the 15 sectors with the highest weighted multiplier effects out of a total of 26 endogenous sectors defined in the Arizona model.

What do these results imply? Generally speaking, the above results (based on water multipliers) imply that for a uniform increase in output of all sectors, the agricultural sectors (including agricultural processing sectors) in both California and Arizona would require relatively greater extra water intake than the manufacturing, mining and service sectors. Alternatively stated, this implies that for any specified uniform reduction in the outputs of all sectors, the agricultural production and agricultural processing sectors would "release" more water than manufacturing, mining and service sectors. This conclusion is of great significance for water reallocation policies.^{6/}

d. Value Added Per Unit of Water Intake

It was argued in Chapter III above that a comparison of the value added per unit of water intake could be used as a proxy for "efficiency" of water use patterns within each state separately and among the two states taken in combination. These value added figures in dollars per million gallons of water intake are presented in Table V-7 below for California and Arizona endogenous sectors. The ranking of these figures (column 2)

^{6/} The significance of these and other results to intrastate and interstate water allocation policies, see Chapter VI.

for California sectors reveal that sector 19 (aircraft and parts) is the most efficient user of water relative to all other endogenous California sectors. An examination of the same column also reveals eight of the ten California agricultural sectors rank among the ten least efficient water users relative to other California sectors.

Similarly, column 4 indicates that eight of ten Arizona agricultural sectors rank among the ten least efficient users of water with the crop sectors being the most inefficient according to the criterion of value added per million gallons of water intake.

Another interesting comparison is afforded by a relative sector by sector comparison between California and Arizona as depicted in column 5 of Table V-7. Out of the 26 endogenous sectors for both California and Arizona, 15 California sectors have greater value added in dollars per million gallons of water intake relative to their Arizona sector counterparts. This overview, might lead one to conclude that California sectors are in general more efficient water users than Arizona sectors. However, a closer examination reveals that of these 15 California sectors, eight of them are agricultural sectors, the other two are agricultural processing sectors and the remaining five are manufacturing and mining sectors. Moreover, if we compare only the manufacturing and mining sectors, Arizona has six sectors that show greater value added per unit of water intake relative to their California counterparts and California has five of them.

From this relative comparison, the only unambiguous conclusion that can be made is that, on a relative basis, California agricultural sectors are, in general, more efficient water users than their Arizona

TABLE V-7

Value Added Per Unit of Water Intake, California and Arizona Sectors, 1958
(dollars per million gallons of water intake)

Sector number	Sector title	California		Arizona		California vs. Arizona
		1	2	3	4	5
		Value added	Rank ^{a/}	Value added	Rank ^{a/}	Relative ranking
1	Meat animals and products	2294.12	19	1787.44	18	C > A
2	Poultry and eggs	7933.29	16	74500.00	6	A > C
3	Farm dairy products	12198.24	13	5565.29	16	C > A
4	Food and feed grains	65.98	25	27.66	26	C > A
5	Cotton	210.35	24	179.30	24	C > A
6	Vegetables	544.23	21	387.09	20	C > A
7	Fruit (excluding citrus) and nuts	318.37	23	207.36	22	C > A
8	Citrus	493.53	22	201.52	23	C > A
9	Forage	49.40	26	55.08	25	A > C
10	Miscellaneous agriculture	550.50	20	364.46	21	C > A
11	Grain mill products	168376.87	2	51579.31	9	C > A
12	Meat and poultry processing	11320.90	14	944.44	19	C > A
13	Dairy products	6955.97	18	62095.23	7	A > C
14	Canning, preserving, freezing	14849.38	11	28896.55	10	A > C
15	Miscellaneous agri. processing	27067.72	7	79889.23	5	A > C
16	Chemicals and fertilizers	17151.68	10	15582.24	12	C > A
17	Petroleum	17580.12	9	19529.41	11	A > C
18	Fabricated metals and machinery	123806.35	3	428744.68	1	A > C
19	Aircraft and parts	360306.36	1	339700.72	2	C > A
20	Primary metals	75394.73	4	5170.40	17	C > A
21	Other manufacturing	23889.49	8	159387.09	3	A > C
22	Mining	10655.92	15	9967.73	14	C > A
23	Utilities	7544.68	17	6622.19	15	C > A
24	Selected services	13718.33	12	14818.48	13	A > C
25	Trade and transportation	63714.77	6	58846.39	8	A > C
26	Unallocated	72159.02	5	84108.78	4	A > C

a/ Ranked in the order of decreasing magnitudes.

counterparts.^{1/} As for agricultural processing, manufacturing and mining sectors, there exists no clear-cut evidence as to whether California or Arizona sectors are more efficient water users. A more detailed comparison is given in the interstate analyses in section (ii) below.

(ii) Interstate Analyses

Table V-8 presents the water coefficients, water intake multipliers and value added per unit of water used for California-Arizona economy combined. Since California and Arizona have 26 endogenous sectors each, the combined two-state model has a total of 52 endogenous sectors. To differentiate California from Arizona sectors, California sector numbers (column 1, Table V-8) are preceded by the letter "C" and Arizona sectors (column 12) by the letter "A". Thus the rank numbers range from one to fifty-two for each of the five measures ranked. Since all the five measures to be compared here have been analyzed on intrastate basis, comparison and analyses emphasize interstate aspects.

a. Water Coefficients

Columns 2 and 13 give the direct water intake coefficients for California-Arizona sectors in million gallons per \$1,000 of output and columns 3 and 14 give their rankings in a decreasing order of magnitude. Consequently, the sectors with low rank numbers are more water intensive per unit of output than the sectors with higher rank numbers.

^{1/} It should be emphasized that these comparisons are based only on the direct value added and the indirect effects are ignored. However, as we have indicated before, the indirect effects can be very important due to interdependencies of sectors in an economy on both the demand for their outputs and supply of their factors.

Sector Number	Direct water coefficient ^{a/}	Rank	Direct plus indirect water coefficients ^{b/}	Rank	Multiplier (unweighted) ^{c/}	Rank	Multiplier (weighted) ^{d/}	Rank	Value added ^{e/}	Rank
C 1	.041801	22	3.828746	11	91.995	11	2,083	21	2,294.12	30
C 2	.004782	37	1.432967	25	299.661	6	29,033	10	7,713.29	30
C 3	.026603	23	4.281679	9	159.746	7	27,904	11	12,190.24	36
C 4	7.645343	4	7.962140	4	1.041	45	4,131	30	69.90	45
C 5	3.257763	7	3.499157	12	1.074	41	104,500	3	210.19	45
C 6	1.273697	14	1.307890	26	1.090	40	52,002	6	344.23	40
C 7	2.021684	11	2.082992	19	1.031	47	10,024	19	318.37	44
C 8	1.601713	12	1.650997	23	1.005	51	23,464	13	493.33	41
C 9	14.806410	3	14.963163	1	1.295	37	5,149	28	49.40	51
C 10	1.466330	13	1.812320	22	1.236	44	16,999	14	394.90	39
C 11	.002432	30	1.064390	21	766.600	9	39,041	7	188,376.87	4
C 12	.012297	26	1.964364	24	126.808	8	173,076	8	11,320.90	27
C 13	.020219	31	.639372	30	90.142	10	201,940	5	6,995.97	38
C 14	.010218	28	.245330	36	62.973	13	37,714	16	14,949.38	23
C 15	.013900	25	.069912	39	2.387	27	4,401	29	27,087.78	17
C 16	.022189	27	.041197	38	3.239	26	1,087	40	17,151.60	21
C 17	.017255	29	.010578	40	2.900	28	5,472	35	17,980.12	26
C 18	.003266	45	.009047	42	1.832	32	12,373	17	123,005.33	6
C 19	.001735	50	.015868	41	1.699	34	661	42	381,306.36	2
C 20	.004936	36	.038622	43	1.212	33	7,995	43	73,394.73	9
C 21	.022725	24	.070375	35	1.222	35	3,434	43	23,699.49	18
C 22	.058085	19	.006613	37	2.671	29	8,344	40	15,718.33	25
C 23	.056169	20	.011510	49	2.331	31	8,344	40	81,714.77	12
C 24	.004308	38	.010133	44	3.043	25	12,079	19	72,439.08	11
C 25	.004308	38	.013976							
C 26	.004308	38								

a/ Million gallons per \$1,000 output.

b/ Million gallons per \$1,000 final demand.

c/ Ratio of direct plus indirect water requirements to direct water requirements.

d/ Dollars per 10 percent change in final demand.

e/ Dollars per million gallons of water intake.

The comparisons indicate that a total of 13 Arizona sectors are more water intensive than their California counterparts. The remaining 13 Arizona sectors are less water intensive relative to their corresponding California counterparts. A closer examination (column 23, Table V-8) reveal the following:

First, nine of the ten Arizona agricultural sectors are more water intensive (i.e., use more water per dollar of output) than their corresponding California sectors.

Second, of the five agricultural processing sectors in Arizona, only two of them are more water intensive than their corresponding California counterparts with the remaining three being less water intensive.

Third, out of the eleven manufacturing, mining and service sectors, in Arizona, nine of them are less water intensive relative to their corresponding California counterparts. This finding implies that, in general, the Arizona manufacturing, mining and service sectors are more efficient water users than their corresponding California sectors.

Given that the estimation procedures in both California and Arizona sectors were made as comparable as possible, the differences in water use efficiency between California and Arizona manufacturing, mining and service sectors may be due to a number of reasons, namely:

1. Even though definition of output is comparable there are some differences in composite output which may affect any comparison of the water coefficients.

2. In the estimation of direct water intake coefficients the cost of supplying the implied water requirements was not explicitly

recognized. If the cost (or price) factor were taken into account, the water coefficients in Arizona sectors would be smaller than their corresponding California counterparts only if: (a) production processes in California manufacturing, mining and service sectors were more water intensive than their corresponding Arizona counterparts and/or (b) the cost of supplying water per unit in these sectors was greater for California sectors than their Arizona counterparts. The validity of (a) and (b) cannot be assessed in the present study.^{8/}

3. Another important factor which seems to have been completely neglected in most studies on water coefficients is the consideration of different soil types and how these might affect the water intake patterns especially in the different crop sectors.

4. Prices of the same products in comparable sector in the two states may differ markedly and since these are used to estimate output in dollar values, the water to output (in dollars) ratios are directly affected.

5. The product mix within sectors may also differ markedly. A good example would be dryland barley versus irrigated barley in California. The water coefficient based on such a mixed product would tend to be lower than one based on irrigated barley alone.

6. There is also the possibility of differences in production efficiency in similar sectors located in different regions due to differences in factor prices, among other things. These differences

^{8/} No definite conclusion is possible at this juncture. It would be necessary to conduct further investigation into the comparative costs of the water input between California and Arizona as a means of obtaining an unambiguous conclusion as to relative water efficiencies when only direct water intake coefficients are considered.

are reflected in yield patterns. The higher the yield in a certain sector, other things equal, the lower will be the water intake coefficient and vice versa.

Let us now turn to the direct plus indirect water intake coefficients, (columns 4 and 5, Table V-8) and their interstate comparisons (columns 5 and 16). The results are summarized in column 24. They are as follows:

First, nine out of ten Arizona agricultural sectors have greater direct plus indirect water intake per \$1,000 of final demand relative to their corresponding California sectors. This result is the same as that obtained by consideration of only direct water intake coefficients.

Second, four of the five agricultural processing sectors in Arizona have greater direct plus indirect water intake coefficients relative to their corresponding California sectors as compared to only two when only direct intake coefficients are taken into account.

Third, ten of the eleven manufacturing, mining and service sectors in Arizona have greater direct plus indirect water intake coefficients relative to their corresponding California sectors. This emphasizes the importance of considering both direct and indirect economic relations in analyzing water use patterns.

Summary

From the analysis of water intake coefficients the following conclusions emerge:

1. Comparison of only direct water intake coefficients may lead to ambiguous results with respect to water intensiveness or water use efficiencies.

2. Consequently, the importance of considering both direct plus indirect water intake coefficients cannot be overemphasized. This is so because in most cases the indirect effects are more pronounced than their corresponding direct effects.

3. Based on the direct plus indirect water intake coefficients, of the 26 endogenous sectors defined in both California and Arizona model 23 of them in Arizona use more water per dollar of output than their corresponding California counterparts. This implies that, in general, California sectors are more "efficient" in their water use patterns than their corresponding Arizona counterparts.

b. Water Multipliers

The estimates of the unweighted and weighted water multipliers for California and Arizona are tabulated in columns 6 and 8 and columns 17 and 19 (Table V-8) respectively.

First, consider the unweighted water multipliers. These are ranked in columns 7 and 18 and the results summarized in column 25 which indicate the following:

1. Six out of ten California agricultural sectors show greater unweighted water multipliers than their respective Arizona counterparts.
2. Only two of five agricultural processing sector (canning, preserving and freezing, and miscellaneous agricultural processing) in California show a greater unweighted multiplier than its corresponding Arizona sector.
3. Only two of the eleven manufacturing, mining and service sectors show greater values of unweighted multipliers than their corresponding Arizona sectors.

The results for the Arizona to California embodied water transfer are given in Table V-10. Column 8 of Table V-10 (equivalent of column 8 in Table V-9) indicates the percentage of total California sectors' water requirements that was met by the transfer from Arizona sectors (in embodied form). The last entry in column 8 indicates that Arizona contributed approximately 1.15 percent of the total water required directly and indirectly to meet the aggregate 1958 California's final demand.^{2/} Note that most of the embodied water flow (approximately 2/3) from Arizona to California come from Arizona sectors 11, 12 and 13 (grain mill products, meat and poultry processing and dairy products respectively) which are dependent upon heavy water using sectors 1, 4 and 9 (meat animals and products, food and feed grains and forage, respectively).^{10/}

^{2/} If we add w^{ca} (column 5 Table V-9) and w^{cc} (column 6 Table V-10) we get the total amount of water that was used by California sectors alone. The resulting figure (8,282,500 million gallons) compares favorably with the total water intake estimates for California sectors (8,281,773 million gallons) given in Table V-4. Similarly, the aggregate water used by Arizona sectors ($w^{aa} + w^{ac} = 2,106,229$) compares with the estimated water intake figure for Arizona sectors (2,044,183) but with a three percent rounding error.

^{10/} The magnitudes of direct and indirect water coefficients in rows 1, 4 and 9 columns 11, 12 and 13 of Table B-8 indicate that there is a relatively strong interdependency among these sectors.

The results for the Arizona to California embodied water transfer are given in Table V-10. Column 8 of Table V-10 (equivalent of column 8 in Table V-9) indicates the percentage of total California sectors' water requirements that was met by the transfer from Arizona sectors (in embodied form). The last entry in column 8 indicates that Arizona contributed approximately 1.15 percent of the total water required directly and indirectly to meet the aggregate 1958 California's final demand.^{9/} Note that most of the embodied water flow (approximately 2/3) from Arizona to California come from Arizona sectors 11, 12 and 13 (grain mill products, meat and poultry processing and dairy products respectively) which are dependent upon heavy water using sectors 1, 4 and 9 (meat animals and products, food and feed grains and forage, respectively).^{10/}

^{9/} If we add W^{ca} (column 5 Table V-9) and W^{cc} (column 6 Table V-10) we get the total amount of water that was used by California sectors alone. The resulting figure (8,282,500 million gallons) compares favorably with the total water intake estimates for California sectors (8,281,773 million gallons) given in Table V-4. Similarly, the aggregate water used by Arizona sectors ($W^{aa} + W^{ac} = 2,106,229$) compares with the estimated water intake figure for Arizona sectors (2,044,183) but with a three percent rounding error.

^{10/} The magnitudes of direct and indirect water coefficients in rows 1, 4 and 9 columns 11, 12 and 13 of Table B-8 indicate that there is a relatively strong interdependency among these sectors.

4. In total, only ten out of twenty-six endogenous sectors in California show larger values of the multipliers than their corresponding Arizona counterparts.

Second, consider the weighted water multipliers. These are tabulated in columns 8 and 19, ranked in columns 9 and 20, and summarized in column 26 (Table V-8), which indicate the following:

1. Of the ten agricultural sectors, seven in California show larger weighted water multipliers than their corresponding Arizona sectors compared to only six when unweighted multipliers are used as basis for comparison.

2. All the five California agricultural processing sectors have greater values of the weighted multipliers than their corresponding Arizona sectors as compared to only two when unweighted multipliers are used as the basis for comparison.

3. Nine of the eleven manufacturing, mining and service sectors in California induce larger weighted multipliers than their corresponding Arizona counterparts as compared to only two when comparison is based on unweighted multipliers.

4. In total, 21 out of the 26 endogenous sectors in California have greater values of the weighted multipliers than their corresponding Arizona sectors as compared with only 10 when the unweighted multipliers are used as the basis for comparison.

Summary

The analysis of water multipliers indicates that California sectors are in general more efficient in their water use patterns than their corresponding Arizona counterparts. This same conclusion emerged from

the analysis based on direct plus indirect water intake coefficients above.

c. Value Added Per Unit of Water Intake

Value added in dollars per million gallons of water intake are tabulated in columns 10 and 21, ranked in columns 11 and 22 and summarized in column 27 (Table V-8) for California and Arizona sectors. A sector by sector comparison of these magnitudes indicates the following:

1. Eight of the ten California agricultural sectors have greater value added per million gallons of water intake than their corresponding Arizona sectors.

2. Only two of the five agricultural processing sectors in California have greater value added than their corresponding Arizona counterparts.

3. Only six of the eleven California manufacturing, mining and service sectors have larger value added figures than their corresponding Arizona sectors.

4. For the California economy as a whole, 16 out of the 26 endogenous sectors have larger value added figures per million gallons of water intake than their corresponding Arizona sectors.

Note, that although these results are only based on direct value added in dollars per million gallons of direct water intake, they still warrant the general conclusion (noted in the comparison of the other measures) that California sectors are in general more efficient water users (require less water per dollar of output) than their Arizona counterparts. Although, these results are based on relative sector

to sector comparisons, the further measure of aggregate value added per million gallons of water intake for California economy as a whole as compared to the comparable measure for the Arizona economy clearly reinforces the above general conclusion.

d. Embodied Water Transfer

This section deals with the analysis of direct plus indirect water transfers from California to Arizona and from Arizona to California based on the results of the two-region model formulated in Chapter III.

Table V-9 tabulates the results of California to Arizona water transfer based on the 52 x 52 California-Arizona direct plus indirect water coefficients (W^* - Table B-12). The elements in columns 1 to 4 (Table V-9) have already been defined in Chapter III. Column 5 gives total amount of water transferred from California sectors to satisfy the 1958 final demand in the corresponding Arizona sectors. For example, the first entry in column 5 indicate that California sectors transferred (directly and indirectly) approximately 2,407 million gallons of water embodied in the products exported to meet the 1958 final demand for Arizona sector 1 (111,770 thousand dollars). Column 6 (Table V-9) gives the amount of water originating and consumed in Arizona (W^{aa}) to meet the final demand in Arizona. Column 7 tabulates the total amount of water requirements from both California and Arizona to satisfy 1958 Arizona's final demand. Column 8 shows the percentage of the total water requirements for Arizona final demand that came from California (embodied in the products that were exported from California to Arizona). The last entry in column 8 indicates that 1.66 percent of the total water required directly and indirectly to meet 1958 Arizona's final demand came from California.

TABLE V-9

Embodied Water Transfer, California to Arizona

Sector number	V_j^{*12}	V_j^{*22}	Direct plus indirect water requirements (1 + 2)	Y_1^a	W^{ca}	W^{aa}	W^a	W^{ca}	W^{aa}
	1	2	3	4	(1 x 4)	(2 x 4)	(5 + 6 or 3 x 4)	(percent) (5 ÷ 7)	(percent) (6 ÷ 7)
	1	2	3	4	5	6	7	8	9
A 1	.021537	3.213810	3.235347	111,770	2,407.2	359,207.5	361,614.7	.67	99.33
A 2	.776313	6.819656	7.595969	6,771	5,256.4	46,175.9	51,432.3	10.22	89.78
A 3	.126771	6.064158	6.190929	2,822	357.7	17,113.1	17,470.8	2.04	97.96
A 4	.019430	21.209582	21.229012	12,288	238.7	260,623.3	260,862.1	.09	99.91
A 5	.003211	4.427143	4.430354	50,481	483.2	666,200.9	666,684.1	.07	99.93
A 6	.001008	2.133146	2.134154	73,342	73.9	156,449.2	156,523.1	.05	99.95
A 7	.001581	3.316499	3.318080	1,481	2.3	4,911.7	4,914.1	.05	99.95
A 8	.002406	3.849893	3.852299	9,697	23.3	37,332.4	37,355.7	.06	99.94
A 9	.001003	15.341862	15.342865	4,495	4.5	68,961.7	68,966.2	.01	99.99
A 10	.007457	3.419714	3.427171	5,795	43.2	19,817.2	19,860.6	.22	99.78
A 11	.200054	6.276708	6.476762	9,028	1,806.1	56,666.1	58,472.2	3.09	96.91
A 12	.225234	1.943736	2.168970	46,220	10,410.3	89,839.5	100,249.8	10.38	89.62
A 13	.081742	3.020581	3.102323	38,629	3,157.6	116,682.2	119,839.6	2.63	97.37
A 14	.083732	.285073	.368805	2,031	170.1	579.0	749.0	22.70	77.30
A 15	.085734	.780940	.866674	45,421	3,894.1	35,471.1	39,365.2	9.89	90.11
A 16	.019188	.128215	.147403	23,284	446.8	2,985.4	3,432.1	13.02	86.98
A 17	.001037	.011887	.012924	1,170	1.2	13.9	15.1	8.02	91.98
A 18	.001660	.013210	.014870	63,429	105.3	838.0	943.2	11.16	88.84
A 19	.001446	.011909	.013355	69,729	100.8	830.4	931.2	10.83	89.17
A 20	.002184	.106481	.108665	95,950	209.6	10,216.9	10,426.4	2.01	97.99
A 21	.002299	.061571	.063870	104,210	239.6	6,416.3	6,655.9	3.60	96.40
A 22	.001961	.072143	.074104	227,967	447.0	16,446.2	16,893.3	2.65	97.35
A 23	.001052	.106687	.107739	107,627	113.2	11,482.4	11,595.6	.98	99.02
A 24	.001345	.012492	.013837	172,113	231.5	2,150.0	2,381.5	9.72	90.28
A 25	.001196	.012610	.013806	501,359	599.6	6,322.1	6,921.8	8.66	91.34
A 26	.004966	.025804	.030770	630,272	3,129.9	16,263.5	19,393.5	16.14	83.86
Total					33,953.1	2,009,995.9	2,043,949.0	1.66	98.34

The results for the Arizona to California embodied water transfer are given in Table V-10. Column 8 of Table V-10 (equivalent of column 8 in Table V-9) indicates the percentage of total California sectors' water requirements that was met by the transfer from Arizona sectors (in embodied form). The last entry in column 8 indicates that Arizona contributed approximately 1.15 percent of the total water required directly and indirectly to meet the aggregate 1958 California's final demand.^{9/} Note that most of the embodied water flow (approximately 2/3) from Arizona to California come from Arizona sectors 11, 12 and 13 (grain mill products, meat and poultry processing and dairy products respectively) which are dependent upon heavy water using sectors 1, 4 and 9 (meat animals and products, food and feed grains and forage, respectively).^{10/}

^{9/} If we add W^{ca} (column 5 Table V-9) and W^{cc} (column 6 Table V-10) we get the total amount of water that was used by California sectors alone. The resulting figure (8,282,500 million gallons) compares favorably with the total water intake estimates for California sectors (8,281,773 million gallons) given in Table V-4. Similarly, the aggregate water used by Arizona sectors ($W^{aa} + W^{ac} = 2,106,229$) compares with the estimated water intake figure for Arizona sectors (2,044,183) but with a three percent rounding error.

^{10/} The magnitudes of direct and indirect water coefficients in rows 1, 4 and 9 columns 11, 12 and 13 of Table B-8 indicate that there is a relatively strong interdependency among these sectors.

TABLE V-10

Embodied Water Transfer, Arizona to California

Sector number	V_j^{*21}	V_j^{*11}	Direct plus indirect water requirements (1 + 2)	Y_i^c	W^{ac}	W^{cc}	W^c	W^{ac}	W^{cc}
	1	2			(1 x 4)	(2 x 4)	(5 + 6 or 3 x 4)	(percent) (5 ÷ 7)	(percent) (6 ÷ 7)
	1	2	3	4	5	6	7	8	9
C 1	.065021	3.763725	3.828746	22,258	1,447.6	83,773.0	85,220.2	1.70	98.30
C 2	.046646	1.386341	1.432987	199,707	9,315.5	276,862.0	286,177.5	3.30	96.70
C 3	.070293	4.211387	4.281680	64,502	4,534.0	271,642.9	276,176.9	1.64	98.36
C 4	.008097	7.952044	7.960141	4,413	35.7	35,092.4	35,128.1	.01	99.99
C 5	.001837	3.497320	3.499157	297,153	545.9	1,039,239.1	1,039,785.0	.05	99.95
C 6	.000602	1.387280	1.387882	374,058	225.2	518,923.2	519,148.4	.04	99.96
C 7	.000311	2.082282	2.082593	90,792	28.2	189,054.5	189,082.8	.01	99.99
C 8	.000262	1.650736	1.650998	143,097	37.5	236,215.4	236,252.9	.02	99.98
C 9	.000398	14.962764	14.963162	3,159	1.3	47,267.4	47,268.6	.00	100.00
C 10	.004498	1.807822	1.812320	104,386	469.5	188,711.3	189,180.8	.25	99.75
C 11	.058345	1.806043	1.864388	208,160	12,145.1	375,945.9	388,091.0	3.13	96.87
C 12	.027833	1.531531	1.559364	1,110,369	30,904.9	1,700,564.5	1,731,469.4	1.78	98.22
C 13	.036040	1.948301	1.984341	680,523	24,526.0	1,325,863.6	1,350,389.7	1.82	98.18
C 14	.002784	.636589	.639373	1,587,664	4,420.1	1,010,689.4	1,015,109.5	.44	99.56
C 15	.003668	.241658	.245326	1,533,780	5,625.9	370,650.2	376,276.1	1.50	98.50
C 16	.000466	.069446	.069912	627,373	292.4	43,568.5	43,860.9	.67	99.33
C 17	.000049	.041149	.041198	1,328,130	65.1	54,651.2	54,716.3	.12	99.88
C 18	.000032	.010545	.010577	3,050,707	97.6	32,169.7	32,267.3	.30	99.70
C 19	.000012	.005035	.005047	2,149,889	25.8	10,824.7	10,850.5	.24	99.76
C 20	.000047	.018818	.018865	296,032	13.9	5,570.7	5,584.6	.25	99.75
C 21	.000102	.038518	.038620	2,781,238	283.7	107,127.7	107,411.4	.26	99.74
C 22	.000043	.070329	.070372	111,066	4.8	7,811.2	7,815.9	.06	99.94
C 23	.000012	.068609	.068621	1,157,026	13.9	79,382.4	79,396.3	.02	99.98
C 24	.000033	.011476	.011509	2,978,879	98.3	34,185.6	34,283.9	.29	99.71
C 25	.000029	.010102	.010131	8,229,067	238.6	83,130.0	83,368.7	.29	99.71
C 26	.000097	.013878	.013975	8,620,131	836.2	119,630.2	120,466.3	.69	99.31
Total					96,232.7	8,248,546.7	8,344,779.4	1.15	98.85

VI. SUMMARY AND CONCLUSIONS

Agricultural interests from both California and Arizona have shown particular concern because agricultural sectors are the major recipients of the available water. However, it is readily accepted that agricultural sectors are economically interrelated with non-agricultural sectors. Although progress has been made in quantitatively measuring economic interactions on state and national levels using input-output or interindustry analysis, considerably less progress has been made in measuring economic interdependence between two contiguous states especially when they share a common supply of a valuable and scarce resource such as water. The specific objectives of this study are:

1. To quantify the nature and extent of economic interdependence between California and Arizona with particular emphasis on agriculture.
2. To develop models for analyzing such changes as the levels of resource availability on production and trade patterns between the two states.
3. To quantify intrastate water-content matrices for California and Arizona which together with interstate trade patterns resulting in (2) are used to quantify the embodied direct and indirect interstate water transfers and thus the water balance-of-trade-equivalence of the balance of trade in international trade studies.
4. To examine, in the light of the above results, the implications of different water allocation policies for the Colorado River between California and Arizona.
5. To examine the applicability of such scheme of analysis for a more ambitious program of joint Western States water development in the future.

To meet these objectives, within the scope and limitation of existing data, an interregional non-capacity input-output model was formulated using comparable input-output tables for California and Arizona which were fused together through two gross import matrices the estimates of which were obtained from a variety of sources, published and unpublished. While the study covers only California and Arizona, it was meant to be a pilot study conducted in a manner that serves to indicate the problems encountered in connecting state economies in an input-output framework. The nature of the research conducted in this study, together with the statistical information generated throughout the course of its implementation, is additive in the sense that other interested researchers can improve and build upon it to accomplish a broader objective of analyzing joint water utilization among all the eleven Western states.

The remainder of this sector summarizes the major findings of this study, their policy implications, limitations and suggested areas for further study.

A. Summary of Major Findings

(1) Economic Interdependence

With reference to the objective of quantifying economic interdependence and trade patterns within and between California and Arizona, the following conclusions emerged:

1. Agricultural sectors in both California and Arizona are more dependent on nonagricultural sectors than the other way around (i.e., agricultural sectors purchase more inputs from nonagricultural sectors per dollar of final demand in specific former sectors than the other way around.)

2. Arizona agricultural and nonagricultural sectors are more dependent on California agricultural and nonagricultural sectors, respectively, than in the converse case. Consequently, Arizona economy as a whole is much more dependent on California economic activity than California is dependent on Arizona economic activity.

3. Most Arizona sectors have adverse balance of trade with respect to their corresponding California sectors (i.e., they import more from California than they export to California).

(ii) Water Use Patterns

With reference to the objectives of quantifying intrastate water content matrices interstate water transfers and the water balance-of-trade, the following conclusions emerged:

1. Agricultural sectors, especially crop sectors, in both California and Arizona are the most water intensive and consequently least efficient water users relative to other sectors. As a corollary to this, agricultural sectors in both California and Arizona contribute least to value added per unit of water used than the other sectors. Consequently, the ability of agricultural sectors to absorb any price increase in the primary factors especially water is less than in other sectors.

2. Arizona agricultural sectors (9 out of 10), agricultural processing sectors (four out of five), and manufacturing, mining and service sectors, are more water intensive than their corresponding California counterparts. Thus in general Arizona sectors (23 out of 26 endogenous sectors) are more water intensive than their corresponding California sectors. These findings are based on direct plus

indirect water intake coefficients and their corresponding weighted water intake multipliers. As a corollary (based on value added comparisons) Arizona sectors contribute less to the aggregate value added in dollars per million gallons of water intake than the equivalent aggregate contribution by the California sectors. Consequently, the ability of the Arizona economy to absorb price increases in primary inputs especially water would be inferior to that of the California economy.

3. From the consideration of product shipments alone, we have seen that Arizona sectors depend more on California economic activity than the other way around. However, when we consider the embodied water transfers, the results indicate that Arizona transferred more water (directly and indirectly in embodied form) to satisfy California's final demand than California transferred to meet Arizona's final demand.

B. Policy Implications

With reference to the general objective of indicating policy implications of the above results, we group them into three categories vis intrastate, interstate and multistate implications.

(1) Intrastate Water Allocation Policies

It has already been shown that agricultural sectors are less efficient (require more water per unit of output) in water use than the other sectors in both economies of California and Arizona. This implies that in general the agricultural sectors are poor competitors in the "water market" compared to nonagricultural sectors with present technology and market conditions. As a corollary to the above implication, if a uniform water pricing policy for all uses were to be maintained,

then most agricultural sectors would be less able to absorb increases in water prices as well as the other sectors since in the latter sectors, more value is added per unit of water intake (greater profit margins) than in the former sectors.

(ii) Interstate Water Allocation Policies

It was indicated in the introductory chapter that California and Arizona have been, and still are, involved in a serious conflict regarding the allocation of the Colorado River water. One of the objectives of this study was to indicate (from the results of economic interdependence and water use patterns) the policy implications of different allocation schemes of the Colorado River water between California, Arizona and other Western States.

The economic interdependence and water use patterns in both Californian and Arizona have been quantified. However, due to the limitations already discussed, the results of this study do not entirely suffice to warrant any concrete policy decisions pertaining to different allocation schemes of the Colorado River water between California and Arizona. What then is the significance of the results obtained in this study?

First, the quantification of the trade flows between California and Arizona and the embodied water transfers derived from them constitute an important step towards the formulation and assessment of different water allocation policies.

Second, the quantification of intrastate and interstate relative water use efficiencies achieved in this study likewise constitute an essential step towards the formulation and assessment of different water allocation policies.

Thus, with some improvements in the collection of interstate trade flow data and some refinements in the estimates of water coefficients as noted in the preceding chapter, the model used in this study and the results obtained therefrom could have far-reaching effects towards a more quantitative water policy formation and assessment.

(iii) Multi-State Policy Implications

With reference to the objective of examining the applicability of the scheme of analysis used in this study for a more ambitious joint Western states water development, the implications discussed with reference to interstate considerations would apply mutatis mutandis. First, such an analysis would reveal the economic interdependence among all the eleven Western states. Second, quantification of water use patterns and their comparisons would reveal the relative efficiency in water use of each state vis a vis the other states. Third, the quantification of multi-state embodied water transfers would help in assessing the consequences of different allocation schemes. Fourth, the limitations encountered in this study might help to assess the feasibility of implementing a joint 11 Western states model now under consideration using a similar method used here. These limitations are discussed in the following section below. Fifth, the desirability of coordinated efforts in constructing state tables such as those used in this study cannot be underestimated in the construction of the joint 11 states model.

C. Limitations

We now turn to the limitations that must be recognized in the interpretations of the results and implications derived from this study.

(1) Data Problem

An interregional model such as the one employed in this study requires interregional commodity flow data which are at present not available. The severity of this problem is manifested by the estimation procedures adopted for the California and Arizona import matrices. This same problem hampered the empirical implementation of the three-region model formulated in Chapter III since it would have required estimation of six different import matrices.

What is really needed to overcome the data problem? First of all, it is necessary to have commodity flow data not only by state of origin and destination, but also by sector of origin and destination. Second, there is a need for the transport cost data for each group of commodity between the areas of origins and destinations. Third, there is a real problem in estimating how much of a certain commodity transported from one region to another is actually utilized in the latter region and how much goes on through to another region. This problem is bound to persist for a long time but it may be reduced by an attempt to net out these trans-shipments from the estimates of multiregional commodity flows and thus reduce the consequent double-counting. This might be accomplished through surveys of each industry in each region or at least only those industries engaged in major shipments.

The analyses conducted in this study are based on 1958 data. Although it is generally agreed that the technical coefficients are relatively stable over a period of about five years, the trade coefficients are on the contrary relatively unstable (the more so the smaller the regions in question). Thus, if there has been a significant change in

the bilateral trade relationships between California and Arizona from 1958 to 1967, the interdependence analysis based on 1958 data (and consequently the policy implications derived from them) would not be applicable to the situation existing in 1967.

(ii) Methodological Limitations

Second, there are the methodological limitations pertaining to the use of input-output model for regional analysis. The basic assumptions of input-output models were discussed in Chapter II. Briefly these are (1) homogeneity, (2) proportionality and (3) additivity. The tests and validity of these assumptions have been discussed by other researchers. Some authors conclude that errors due to imperfect aggregation and changing input-output coefficients are counterbalanced by the ability of input-output technique in revealing interdependencies among economic units. However, these tests have so far not been performed on regional-interregional models. Given that regional economic activities are much more dependent on imports (the more so the smaller the region) than the national unit, there exists a greater potential for input-output coefficients to change more abruptly as the region develops thus increasing the margin for errors in predictive results.

Other methodological limitations include the use of non-capacity model, the assumption of proportional production functions in the estimation of water coefficients and the assumption of uniform horizontal growth for all sectors in the estimation of weighted water intake multipliers. The possible biases resulting from these limitations have been discussed in Chapter III-E, and suggested areas of further study in some of these problems are discussed below.

D. Suggested Areas for Further Study

First, in the estimation of water coefficients, the cost of supplying the implied water requirements has not been adequately handled. The OBE study for 1958 treats "water supply facilities" as a component of OBE sector 79 (State and Local Government Enterprises). However, in a study, such as the present one, emphasizing water use patterns, it appears more appropriate to define "water supply facilities" component of OBE sector 79 as a separate exogenous sector (row). The resulting estimates (in dollars) would indicate the costs of supplying implied water requirements by different sectors. These supply prices (costs to state and local government) could be transformed in water equivalents for each sector and then combined with the estimates of water intake for the corresponding sectors. The resulting water intake coefficients and the results of the comparisons based on them would probably be more meaningful than those that have been utilized in this, and other studies that the author is aware of.

Second, to overcome the biases resulting from the use of non-capacity model, it would be necessary to conduct a sector by sector study so as to determine the level of capacity restraints. Following the method used by Wonnacott for the Canadian-American Dependence study, the resulting capacity model may be used in conjunction with the non-capacity model employed in this study to test the nature and magnitude of the bias(es) resulting from the use of non-capacity model.

Third, in the estimation of weighted water multipliers an assumption of uniform horizontal growth in each sector was applied. It appears that the bias introduced by the adoption of this assumption

could be eliminated by using actual growth rates as weights for the different sectors. For example, in the case like California where two input-output tables have already been completed each representing a different base period (1954 and 1958) the actual changes in final demand output can be obtained and used to test the uniform horizontal growth hypothesis.

Fourth, it appears that smaller breakdown on sectors, especially agricultural sectors, is desirable since these are the heaviest users of water. A breakdown such as that accomplished in the California and Arizona models utilized in this study would seem to be a necessary first step especially in implementation of the 11 Western states' model now under planning stages in which various agencies and researchers are cooperating.

Fifth, the model utilized in this study may be transformed with much additional work into a linear programming model (perhaps of multi-stage) to examine alternative water investment policies.

Sixth, it appears that employment analyses could be conducted using very much the same procedures used in this study. The estimation of employment data by sectors (labor requirements) could be used in conjunction with the results of our two-region model to obtain such measures as direct, direct and indirect labor coefficients, multipliers, embodied labor content matrices and even the projection of labor requirements in some distant future.

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Summary of the Contents and Structure of the Book

CHAPTER No.	CHAPTER TITLE	CONTENTS
1.	Introduction and Objectives	<p>Chapter 1 sets out the National inter-industry approach to the subject of Canadian-American dependency. It sets the context and outlines the scope of the study. It also states the objectives of the study and the structure of the book.</p> <p>The following chapters consist of chapters 2 to 6. The remaining chapters consist of chapters 7 to 10. The remaining chapters consist of chapters 11 to 14.</p> <p>Chapter 11 sets out the objectives of the study and the structure of the book. Chapter 12 sets out the objectives of the study and the structure of the book. Chapter 13 sets out the objectives of the study and the structure of the book. Chapter 14 sets out the objectives of the study and the structure of the book.</p>
2.	Canadian and American	<p>This chapter discusses the relationship between the two countries.</p>
3.	Trade Policy	<p>This chapter discusses the trade policy of the two countries.</p>
4.	Production and Prices	<p>This chapter discusses the production and prices of the two countries.</p>
5.	Imports	<p>This chapter discusses the imports of the two countries.</p>
6.	Exports	<p>This chapter discusses the exports of the two countries.</p>

It is hoped that this summary will be of some assistance to the reader.

APPENDIX A

Reconciliation of the California and Arizona Models, 1958^{1/}

<u>Sector No.</u>	<u>Sector Title</u>	
1.	Meat Animals and Products	Arizona sector 1 included non-purchased manure as an output whereas California sector 1 did not. To make the two sectors comparable, manure was removed from Arizona sector 1. The reasoning behind removal of manure as an output of sector 1 is that manure is not really an output and most farmers incur a cost in disposing of manure from their farms which is assumed to be offset by any positive nutrient value added to soil.
2.	Poultry and Eggs	The two sectors are comparable.
3.	Farm Dairy Products	As in sector 1 above, manure had to be separated out for the same reason given above for sector 1.
4.	Food and Feed Grains	The two sectors are comparable but Arizona did not produce rye and rice in 1958.
5.	Cotton	The definitions are comparable between the two sectors. Note, however, that both California and Arizona excluded cotton

^{1/} For detailed definitions and sectoral compositions see Chapter IV.

<u>Sector No.</u>	<u>Sector Title</u>	
5.	(Continued)	linters which are a by-product of the oil mill industry (included in sector 16 -- Chemicals and Fertilizers). Both California and Arizona sector 5 assume that all cotton lint that did not go into inventory addition was exported.
6.	Vegetables	Sector definitions were comparable.
7.	Fruit and Tree Nuts (Excluding Citrus)	Sector definitions were comparable with the exception that Arizona included an additional subsector (Imported Fruits -- i.e., fruits consumed in Arizona but not produced in the state -- cherries, nectarines, avocados, bananas, cranberries and pineapples). No adjustment was necessary since there was no output for the imported fruit.
8.	Citrus Fruits	Definitions were comparable. However, Arizona and California used different pricing methods. In California the prices were adjusted from an f.o.b. packing house price to an on-farm price basis so as to maintain consistency with other agricultural sectors. Although Arizona did not make a similar adjustment no reconciliation was made since the adjustment constituted an insignificant portion of the total output of the sector.

<u>Sector No.</u>	<u>Sector Title</u>	
9.	Forage Crops	<p>Definitions were comparable except that Arizona did not include open pasture (publicly owned pasture) whereas California did. Arizona reasoned that an inclusion of publicly owned pasture would constitute double counting since grazing fees paid by ranchers and farmers (for use of State lands, BLM lands, and Forest Service Lands for grazing) were included as inputs to agricultural sectors from sector 26 -- Unallocated Services. California adjustments correspond to definitions of OBE sectors 78 and 79. The reasoning in the OBE definition is as follows: "Outputs of Federal (State) enterprises that are comparable to those of private establishments are transformed into appropriate private establishments for redistribution." The adjustment in California amounted to 0.02 percent of California sector 9 output. A similar adjustment for Arizona sector 9 was unnecessary for the purposes of the present study.</p>
10.	Miscellaneous	Sector definitions were comparable.
11.	Agriculture	Sector definitions were comparable.

<u>Sector No.</u>	<u>Sector Title</u>	
11.	Grain Mill Products	Sector definitions were comparable with the exception that Arizona included wet corn milling (SIC 2046) as a sub-component of sector 11 whereas California did not. One possible explanation is that wet corn milling is not an important operation in California. In fact, although Arizona did include wet corn milling in sector 11 the gross output (for wet corn milling) was zero.
12.	Meat and Poultry Processing	Sector definitions were comparable.
13.	Dairy Products	Sector definitions were comparable.
14.	Canning, Pre- serving and Freezing	Sector definitions were comparable. Note however that Arizona's share of the transfer-in for sector 14 was assumed to be zero due to lack of complete data and also because Arizona does not have a well developed canning, preserving and freezing industry.
15.	Miscellaneous Agricultural Processing	Sector definitions were comparable.
16.	Chemicals and Fertilizers	Sector definitions were comparable.
17.	Petroleum	Sector definitions were comparable.

<u>Sector No.</u>	<u>Sector Title</u>	
18.	Fabricated Metals and Machinery	Sector definitions were comparable.
19.	Aircraft and Parts	Sector definitions were comparable.
20.	Primary Metals	} Sector definitions were comparable.
21.	Other Manufac- turing	
22.	Mining	
23.	Utilities	
24.	Selected Services	
25.	Trade and Trans- portation	
26.	Unallocated Services	

TABLE B-2
 Technical Coefficients, California Economy, 1967

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sector number	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and petro.	Petro-leum	Metals & mach.	Air-craft		
1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.367514	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1	
2	Poultry and eggs	-0.000000	0.177392	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.031084	0.000043	0.000000	0.001499	-0.000000	-0.000000	-0.000000	-0.000000	2	
3	Farm dairy products	-0.000000	-0.000000	0.026292	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.413647	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3	
4	Food and feed grains	0.059700	0.081111	0.047297	0.027950	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.001999	0.199396	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	4	
5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	0.002323	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5	
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.003253	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6	
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	7	
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.017262	0.011499	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8	
9	Forage	0.207398	-0.000000	0.236222	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.011174	-0.000000	0.000041	-0.000000	0.034775	0.023808	0.017621	-0.000000	9	
10	Miscellaneous agriculture	0.004202	-0.000000	0.007356	0.042179	0.125818	0.057065	0.028839	0.024480	0.039798	-0.000000	-0.000000	0.011122	-0.010909	-0.000000	0.000396	0.001842	0.012524	0.001600	-0.000000	10	
11	Grain mill products	0.074629	0.270324	0.082045	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.001122	0.001781	0.037571	-0.000000	0.006423	0.009457	0.002138	-0.000000	11	
12	Meat and poultry processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.001263	0.002265	0.008334	0.006123	0.004250	12	
13	Dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.015451	0.003643	0.000959	13	
14	Canning, preserving, freezing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.002232	-0.000000	0.063403	0.046216	0.071004	14	
15	Miscellaneous agri. processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.011668	0.024675	0.022679	0.019687	0.015686	15	
16	Chemicals and fertilizers	0.001702	0.003021	0.000839	0.042857	0.024448	0.037855	0.056311	0.033861	0.022913	0.024394	0.009582	0.002373	0.001984	0.004876	0.006539	-0.000000	-0.000000	0.451561	0.001361	0.001356	16
17	Petroleum	0.000801	0.009407	0.000399	0.045845	0.011397	0.019400	0.031538	0.015451	0.024394	0.009582	0.002373	0.001984	0.004876	0.006539	-0.000000	-0.000000	0.451561	0.001361	0.001356	17	
18	Fabricated metals and machinery	0.012343	0.013241	0.010675	0.078795	0.016713	0.030457	0.046248	0.023806	0.045462	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000047	-0.000000	18	
19	Aircraft and parts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000331	0.000299	19	
20	Primary metals	0.000080	0.000077	0.000051	0.000045	0.000027	0.000058	0.000079	0.000025	0.000044	0.000044	0.000044	0.000044	0.000044	0.000044	0.000044	0.000044	0.000044	0.000044	0.000044	20	
21	Other manufacturing	0.003036	0.005705	0.002897	0.006965	0.003049	0.022870	0.027865	0.017170	0.003827	0.005988	0.002269	0.000458	0.000906	0.000895	0.000709	0.000335	0.000299	0.000481	0.000456	21	
22	Mining	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	22	
23	Utilities	0.005424	0.006717	0.006153	0.005361	0.005479	0.006699	0.010064	0.008007	0.003519	0.008738	0.003633	0.004790	0.006170	0.006351	0.005179	0.012321	0.011201	0.007117	0.004961	23	
24	Selected services	0.005203	0.005174	0.002948	0.013687	0.004462	0.008390	0.012226	0.006554	0.007954	0.005025	0.002995	0.003052	0.009011	0.005087	0.004995	0.008162	0.002898	0.002727	0.004889	24	
25	Trade and transportation	0.040631	0.063828	0.063543	0.040688	0.018342	0.021366	0.024628	0.014399	0.021697	0.021816	0.047186	0.051779	0.085190	0.084100	0.204673	0.097500	0.044678	0.047739	0.015479	25	
26	Unallocated	0.021994	0.017667	0.022953	0.091928	0.064992	0.038624	0.029263	0.016591	0.045423	0.028129	0.024373	0.052702	0.041392	0.042591	0.097520	0.069980	0.091374	0.042310	0.010787	26	

TABLE B-2 (contd.)

Sector number	Sector title	20	21	22	23	24	25	26	Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	
1	Meat animals and products	-0.000000	0.000013	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1
2	Poultry and eggs	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	2
3	Farm dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3
4	Food and feed grains	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	4
5	Cotton	-0.000000	0.000133	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	7
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8
9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	9
10	Miscellaneous agriculture	-0.000000	0.000741	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	10
11	Grain mill products	-0.000000	0.000033	-0.000000	-0.000000	-0.000000	0.000018	0.000009	11
12	Meat and poultry processing	-0.000000	0.000373	-0.000000	-0.000000	0.000041	0.000207	0.002531	12
13	Dairy products	-0.000000	0.000025	-0.000000	-0.000000	0.000028	0.000141	0.000069	13
14	Canning, preserving, freezing	-0.000000	0.000028	-0.000000	-0.000000	0.000036	0.000108	0.000053	14
15	Miscellaneous agri. processing	0.000156	0.000322	0.000005	-0.000000	0.000030	0.000108	0.000065	15
16	Chemicals and fertilizers	0.009338	0.032407	0.011853	0.000212	0.004541	0.000504	0.003562	16
17	Petroleum	0.006046	0.004884	0.017637	0.007008	0.005643	0.016509	0.003564	17
18	Fabricated metals and machinery	0.038649	0.025350	0.038357	0.006647	0.037279	0.005475	0.009001	18
19	Aircraft and parts	0.000066	0.001961	-0.000000	-0.000000	0.131656	0.001992	0.009798	19
20	Primary metals	0.158297	0.013852	0.017465	0.000717	0.000150	0.000403	0.001190	20
21	Other manufacturing	0.014056	0.194796	0.034279	0.019389	0.035064	0.009839	0.036169	21
22	Mining	0.091384	0.010459	0.086208	0.000058	0.000205	0.000240	0.001147	22
23	Utilities	0.021002	0.011511	0.021887	0.146401	0.010552	0.021604	0.014783	23
24	Selected services	0.003887	0.005245	0.001787	0.001300	0.069002	0.018514	0.014397	24
25	Trade and transportation	0.075203	0.069031	0.037800	0.012786	0.035508	0.034738	0.035907	25
26	Unallocated	0.025031	0.031910	0.048632	0.080306	0.157312	0.173028	0.128749	26

Each entry shows dollars of direct purchases from the California sector listed at the left by the California sector listed at the top per dollar of output of the latter sector.

TABLE B-3

Interdependency Coefficients, California Economy, 1955

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sector number	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Ferrous	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petro-leum	Metals & mech.	Air-craft		
1	Meat animals and products	1.000155	0.000422	0.000173	0.000210	0.000129	0.000124	0.000144	0.000084	0.000107	0.000067	0.001038	0.382038	0.000484	0.002859	0.004110	0.001321	0.000278	0.000115	0.000040	1	
2	Poultry and eggs	0.000035	1.215751	0.000039	0.000039	0.000024	0.000024	0.000024	0.000017	0.000020	0.000012	0.000276	0.064562	0.000272	0.000579	0.002545	0.000289	0.000051	0.000020	0.000007	2	
3	Farm dairy products	0.000137	0.000566	1.271757	0.000035	0.000020	0.000026	0.000036	0.000021	0.000018	0.000013	0.001680	0.001359	0.464407	0.003041	0.002274	0.000532	0.000036	0.000016	0.000004	3	
4	Food and feed grains	0.000002	0.000003	0.000002	0.000003	0.000003	0.000005	0.000006	0.000004	0.000002	0.000002	0.000007	0.000003	0.000008	0.000012	0.000005	0.000008	0.000004	0.000007	0.000004	4	
5	Cotton	0.000004	0.000011	0.000004	0.000005	0.000003	0.000003	0.000003	0.000003	0.000002	0.000002	0.000004	0.000004	0.000003	0.000004	0.000003	0.000006	0.000005	0.000003	0.000001	5	
6	Vegetables	0.000128	0.000510	0.000143	0.000065	0.000037	0.000053	1.000076	0.000046	0.000034	0.000021	0.001503	0.000090	0.001988	0.169311	0.027397	0.001238	0.000069	0.000022	0.000007	6	
7	Fruit (excluding citrus) & nuts	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000003	0.000976	0.000039	0.003056	0.000000	0.000000	0.000000	7	
8	Citrus	0.000820	0.004196	0.244022	0.000843	0.002303	0.001070	0.000571	0.000471	1.000747	0.017977	0.012467	0.080212	0.110491	0.002261	0.002339	0.000625	0.000077	0.000032	0.000011	8	
9	Forage	0.208620	0.004423	0.211993	0.045672	0.131403	0.060000	0.030682	0.025869	0.041666	1.039596	0.011714	0.006937	0.012023	0.050697	0.030849	0.011136	0.000476	0.000201	0.000044	9	
10	Miscellaneous agriculture	0.016645	0.333059	0.085458	0.000249	0.000262	0.000226	0.000258	0.000163	0.000150	0.001239	1.013353	0.046726	0.041716	0.006475	0.036821	0.003527	0.000193	0.000067	0.000021	10	
11	Grain mill products	0.075693	0.001146	0.000471	0.000570	0.000349	0.000335	0.000390	0.000228	0.000290	0.000182	0.002823	1.039512	0.001314	0.007777	0.011182	0.003592	0.000754	0.000310	0.000013	11	
12	Meat and poultry processing	0.005422	0.001325	0.000363	0.000081	0.000046	0.000061	0.000084	0.000050	0.000024	0.000029	0.000395	0.003183	1.087933	0.007123	0.005264	0.001177	0.000084	0.000018	0.000008	12	
13	Dairy products	0.000321	0.001033	0.000041	0.000046	0.000026	0.000034	0.000047	0.000028	0.000024	0.000015	0.000251	0.000035	0.000330	1.016136	0.004044	0.000624	0.000051	0.000048	0.000198	13	
14	Canning, preserving, freezing	0.000035	0.001974	0.005415	0.002014	0.001142	0.001658	0.002383	0.001427	0.001056	0.000644	0.058811	0.003337	0.077945	0.052952	1.080156	0.038305	0.021194	0.000648	0.000062	14	
15	Miscellaneous agri. processing	0.004856	0.028280	0.016900	0.061178	0.034586	0.051995	0.075380	0.045216	0.032129	0.017411	0.048383	0.012988	0.039836	0.046852	0.031922	1.253876	0.048353	0.017048	0.000004	15	
16	Chemicals and fertilizers	0.016946	0.042480	0.022119	0.091863	0.255774	0.039437	0.061589	0.030644	0.047916	0.020929	0.027244	0.017325	0.025428	0.033183	0.012982	0.007785	1.836730	0.013832	0.000004	16	
17	Petroleum	0.021035	0.045336	0.038089	0.106745	0.026733	0.043390	0.063335	0.033183	0.059928	0.024553	0.037823	0.027427	0.032940	0.153724	0.034680	0.005341	0.000416	0.010132	1.254136	17	
18	Fabricated metals and machinery	0.038245	0.007069	0.005604	0.003312	0.002799	0.003312	0.004154	0.002295	0.003281	0.002064	0.003433	0.008785	0.005599	0.005499	0.004917	0.004586	0.017164	0.008702	0.154999	0.044200	18
19	Aircraft and parts	0.003177	0.004248	0.003097	0.006084	0.015020	0.004195	0.006897	0.009827	0.005251	0.008403	0.006550	0.004480	0.006168	0.023046	0.004889	0.005865	0.002666	0.005210	0.027231	19	
20	Primary metals	0.005612	0.034787	0.017000	0.025257	0.012652	0.037340	0.045299	0.027408	0.013514	0.012773	0.056189	0.019934	0.063254	0.090917	0.038689	0.004977	0.014197	0.027129	0.017484	0.000125	20
21	Other manufacturing	0.015876	0.002985	0.001597	0.003994	0.001418	0.002382	0.003251	0.001802	0.002150	0.001114	0.004860	0.001880	0.003532	0.005610	0.002771	0.018001	0.028926	0.033364	0.019357	0.010517	21
22	Mining	0.001529	0.019213	0.014458	0.018370	0.011763	0.013224	0.018050	0.010657	0.006976	0.013381	0.012492	0.015642	0.021565	0.021471	0.018852	0.014264	0.017154	0.012277	0.007820	0.003250	22
23	Utilities	0.012388	0.015148	0.020408	0.020473	0.008251	0.012213	0.016657	0.009109	0.011410	0.007485	0.010994	0.042126	0.020215	0.015852	0.014264	0.017154	0.012277	0.007820	0.003250	0.003250	23
24	Selected services	0.011659	0.123084	0.091574	0.070544	0.033283	0.039659	0.047982	0.027831	0.037230	0.027776	0.088622	0.094543	0.167104	0.137311	0.249130	0.150110	0.109839	0.085654	0.032495	24	
25	Trade and transportation	0.064604	0.087796	0.073998	0.147542	0.094384	0.068256	0.064585	0.036649	0.073616	0.047054	0.083536	0.112771	0.121260	0.111624	0.126616	0.138730	0.224226	0.085645	0.029717	25	
26	Unallocated	0.066678																			26	

B-3(contd.)

Sector number	Sector title	26	27	28	29	30	31	32	33	Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located		
1	Meat animals and products	0.000103	0.000328	0.000117	0.000124	0.000254	0.000259	0.001152		1
2	Poultry and eggs	0.000019	0.000056	0.000021	0.000028	0.000044	0.000044	0.000196		2
3	Farm dairy products	0.000018	0.000047	0.000016	0.000008	0.000032	0.000078	0.000051		3
4	Food and feed grains	0.000027	0.000078	0.000028	0.000016	0.000038	0.000040	0.000135		4
5	Cotton	0.000005	0.000167	0.000007	0.000005	0.000009	0.000003	0.000007		5
6	Vegetables	0.000003	0.000008	0.000002	0.000001	0.000005	0.000013	0.000008		6
7	Fruit (excluding citrus) & nuts	0.000028	0.000072	0.000025	0.000007	0.000024	0.000031	0.000030		7
8	Citrus	0.000000	0.000001	0.000000	0.000000	0.000000	0.000001	0.000000		8
9	Forage	0.000030	0.000107	0.000033	0.000029	0.000064	0.000074	0.000164		9
10	Miscellaneous agriculture	0.000205	0.001475	0.000235	0.000059	0.000165	0.000070	0.000205		10
11	Grain mill products	0.000076	0.000207	0.000077	0.000028	0.000075	0.000078	0.000132		11
12	Meat and poultry processing	0.000278	0.000848	0.000316	0.000335	0.000689	0.000704	0.000120		12
13	Dairy products	0.000043	0.000109	0.000038	0.000018	0.000074	0.000183	0.000077		13
14	Canning, preserving, freezing	0.000027	0.000078	0.000023	0.000012	0.000049	0.000123	0.000103		14
15	Miscellaneous agri. processing	0.000061	0.000210	0.000074	0.000188	0.000377	0.000385	0.000248		15
16	Chemicals and fertilizers	0.018886	0.052688	0.020926	0.002902	0.011366	0.003577	0.010545		16
17	Petroleum	0.022323	0.016514	0.039582	0.017110	0.016461	0.033860	0.017764		17
18	Fabricated metals and machinery	0.065651	0.044440	0.057115	0.012872	0.066198	0.012422	0.017959		18
19	Aircraft and parts	0.003275	0.006405	0.002634	0.002371	0.018458	0.003040	0.005474		19
20	Primary metals	1.199898	0.027416	0.031388	0.003498	0.014908	0.023461	0.056075		20
21	Other manufacturing	0.035334	1.252723	0.056192	0.034893	0.064483	0.001579	0.002912		21
22	Mining	0.121051	0.017950	1.099026	0.001248	0.003163	0.030924	0.023279		22
23	Utilities	0.038410	0.023573	0.034133	1.175198	0.021933	0.008821	0.009761		23
24	Selected services	0.009260	0.011217	0.005641	0.004291	1.079776	0.023935	0.019761		24
25	Trade and transportation	0.110917	0.105090	0.060589	0.024790	0.062505	0.172978	1.167007		25
26	Unallocated	0.071851	0.076410	0.086414	0.117056	0.217706				26

Each entry shows dollars of direct plus indirect requirements for products of the California sector listed at the left per dollar of final output for products of the California sector listed at the top.

TABLE B-4
Direct and Indirect Water Requirements, California Economy, 1958

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	(Milk, freezing, preserving)	Misc. agri. proc.	Chem. and fort.	Petro-leum	Metals & mech.	Air-craft			
1	Meat animals and products	0.041807	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
2	Poultry and eggs	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
3	Farm dairy products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
4	Food and feed grains	0.588691	1.298838	3.516573	7.866246	0.001964	0.001132	0.000892	0.000628	0.000786	0.013442	1.591876	0.294306	0.240361	0.014661	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	Cotton	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
6	Vegetables	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
7	Fruit (excluding citrus) & nuts	0.000259	0.001731	0.000289	0.000132	0.000075	0.000108	2.022038	0.000092	0.000069	0.000042	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
8	Citrus	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
9	Forage	3.105600	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
10	Miscellaneous agriculture	0.024407	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
11	Grain mill products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
12	Meat and poultry processing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
13	Dairy products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
14	Canning, preserving, freezing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
15	Miscellaneous agri. processing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
16	Chemicals and fertilizers	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
17	Petroleum	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
18	Fabricated metals and machinery	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
19	Aircraft and parts	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
20	Primary metals	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
21	Other manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
22	Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
23	Utilities	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
24	Selected services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
25	Trade and transportation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
26	Unallocated	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
TOTAL		3.767703	1.386261	4.211361	7.952334	3.497317	1.387277	2.082280	1.650734	14.962763	1.807820	1.804992	1.531499	1.948209	1.836581	1.241656	0.069466	0.041148	0.010544	0.009834	TOTAL		

TABLE B-4 (contd.)

Sector number	Sector title	20	21	22	23	24	25	26	Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located	
1	Meat animals and products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1
2	Poultry and eggs	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2
3	Farm dairy products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3
4	Food and feed grains	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4
5	Cotton	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5
6	Vegetables	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6
7	Fruit (excluding citrus) & nuts	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7
8	Citrus	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8
9	Forage	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9
10	Miscellaneous agriculture	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10
11	Grain mill products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11
12	Meat and poultry processing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12
13	Dairy products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13
14	Canning, preserving, freezing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14
15	Miscellaneous agri. processing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15
16	Chemicals and fertilizers	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16
17	Petroleum	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17
18	Fabricated metals and machinery	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18
19	Aircraft and parts	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19
20	Primary metals	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20
21	Other manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21
22	Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22
23	Utilities	0.000000	0.000000	0.000000	0.000000				

TABLE B-5
Interindustry Flows of Goods and Services by Sector of Origin and Destination, Arizona Economy, 1950⁽¹⁾

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sector number
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petro- leum	Metals & mach.	Air- craft	
1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1
2	Poultry and eggs	-0.	870.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2
3	Farm dairy products	-0.	-0.	678.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3
4	Food and feed grains	3276.	1442.	3224.	765.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	20640.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4
5	Cotton	-0.	-0.	-0.	-0.	189.	-0.	-0.	-0.	-0.	-0.	296.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5
6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	291.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	8
9	Forage	23342.	-0.	4520.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	9
10	Miscellaneous agriculture	638.	-0.	116.	688.	14428.	682.	34.	601.	447.	328.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	10
11	Grain mill products	1584.	2974.	1847.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	11
12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	12
13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	13
14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	14
15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	15
16	Chemicals and fertilizers	36.	7.	12.	1029.	2462.	873.	34.	149.	315.	112.	521.	30.	188.	88.	1056.	2347.	27.	147.	16	
17	Petroleum	6.	4.	-0.	60.	93.	32.	3.	11.	28.	7.	2.	3.	7.	2.	26.	8.	7.	11.	17	
18	Fabricated metals and machinery	87.	5.	23.	324.	312.	135.	7.	34.	160.	166.	13.	10.	27.	2.	44.	8.	9408.	9588.	18	
19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	19
20	Primary metals	2.	26.	11.	34.	95.	882.	15.	59.	17.	37.	292.	65.	77.	77.	228.	-0.	452.	18892.	20	
21	Other manufacturing	55.	26.	11.	34.	95.	882.	15.	59.	17.	37.	292.	65.	77.	77.	228.	-0.	452.	18892.	21	
22	Mining	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	22
23	Utilities	812.	61.	225.	165.	1542.	402.	17.	67.	115.	161.	103.	363.	346.	31.	327.	804.	41.	898.	23	
24	Selected services	314.	12.	63.	35.	110.	47.	4.	15.	17.	41.	249.	385.	18.	207.	3.	245.	297.	29.	24	
25	Trade and transportation	1775.	3.	1385.	31.	188.	50.	6.	20.	24.	298.	1023.	4499.	3670.	326.	1757.	2511.	166.	5162.	25	
26	Unallocated	5050.	117.	717.	1966.	8094.	1706.	94.	360.	1161.	876.	617.	2169.	2083.	193.	3249.	2010.	121.	5123.	26	
27	Scrap and by-products	763.	163.	28.	-0.	-0.	725.	27.	73.	-0.	11.	1548.	2667.	-0.	-0.	12686.	-0.	42.	18.	27	
28	Net imports	70594.	922.	869.	6852.	11844.	8048.	304.	1206.	2973.	2219.	3790.	9126.	4055.	1345.	7407.	1927.	28735.	12287.	28	
29	Maintenance construction	500.	21.	104.	189.	857.	236.	12.	44.	143.	49.	61.	109.	214.	23.	109.	4.	144.	281.	29	
30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30
	Households and government	33990.	1490.	11932.	16004.	110578.	59731.	1143.	7251.	28862.	20465.	7479.	187.	9128.	1676.	25964.	5988.	332.	46302.	46539.	
	GROSS OUTLAY	142824.	8117.	25735.	28162.	150795.	73841.	1700.	9899.	34260.	26889.	23273.	51608.	46142.	4161.	50453.	18953.	2652.	98948.	98989.	6.0.

TABLE B-5 (contd.)

Sector number	Sector title	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal- located	Scrap and by-prod.	Net exports	Maint. const.	Gov. const.	State & local gov.	Federal gov.	Inventory addit'n	Inventory deplet'n	Grain pri. exp. for	All Amer- holds	Domestic output	Value added	
1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1
2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2
3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3
4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4
5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5
6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	8
9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	9
10	Miscellaneous agriculture	-0.	2182.	-0.	-0.	-0.	-0.	-0.	59.	4625.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	10
11	Grain mill products	-0.	1.	-0.	-0.	3.	16.	416.	172.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	11
12	Meat and poultry processing	-0.	29.	-0.	-0.	18.	77.	2008.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	12
13	Dairy products	-0.	3.	-0.	-0.	16.	71.	1825.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	13
14	Canning, preserving, freezing	-0.	1.	-0.	-0.	2.	9.	228.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	14
15	Miscellaneous agri. processing	-0.	11.	-0.	-0.	17.	77.	1997.	9.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	15
16	Chemicals and fertilizers	552.	762.	3557.	19.	400.	99.	504.	10599.	-0.	1423.	1025.	401.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	16
17	Petroleum	22.	31.	91.	55.	45.	328.	105.	2.	9935.	5041.	27616.	671.	-0.	-1826.	11737.	13037.	98648.	98648.	17	
18	Fabricated metals and machinery	2140.	1017.	653.	1127.	3602.	837.	5952.	738.	9935.	5041.	27616.	671.	-0.	-1826.	11737.	13037.	98648.	98648.	18	
19	Aircraft and parts	4.	178.	-0.	-0.	2042.	797.	5694.	216.	72002.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	19
20	Primary metals	52559.	848.	3025.	257.	56.	252.	1441.	1438.	84145.	2359.	7416.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	20
21	Other manufacturing	1346.	26680.	4047.	728.	2824.	2710.	25511.	297.	222711.	1018.	4403.	2.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	21
22	Mining	14676.	3046.	68376.	44.	8.	42.	30840.	-0.	30840.	285.	1500.	3201.	3691.	-0.	-0.	-0.	-0.	-0.	-0.	22
23	Utilities	4080.	2743.	8827.	19290.	3622.	16762.	16603.	-0.	55695.	174.	1858.	841.	10034.	-0.	-0.	-0.	-0.	-0.	-0.	23
24	Selected services	258.	913.	344.	11540.	295.	11198.	344.	-0.	55695.	174.	1858.	841.	10034.	-0.	-0.	-0.	-0.	-0.	-0.	24
25	Trade and transportation	9060.	11660.	11612.	3862.	13805.	21743.	30911.	-0.	22975.	11646.	44391.	3014.	15608.	-0.	-0.	-0.	-0.	-0.	-0.	25
26	Unallocated	4527.	10359.	21790.	25728.	24224.	92829.	140128.	-0.	5438.	1544.	24459.	103271.	26300.	-0.	-0.	-0.	-0.	-0.	-0.	26
27	Scrap and by-products	1620.	25.	55.	-0.	246.	135.	55.	-0.	7859.	22.	118.	397.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	27
28	Net imports	21764.	35915.	41557.	15922.	32092.	24445.	51724.	-0.	-0.	17904.	65972.	12383.	34080.	-0.	-0.	-0.	-0.	-0.	-0.	28
29	Maintenance construction	104.	331.	422.	6697.	2211.	11806.	56448.	-0.	9.	-0.	55.	44613.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	29
30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30
	Households and government	51704.	79056.	150164.	113478.	113065.	448999.	641750.	-0.	-0.	81876.	137059.	141838.	390248.	-0.	-0.	-0.	-0.			

TABLE B-6
Technical Coefficients, Arizona Economy, 1956

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sector number
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. prod.	Chem. and fert.	Petroleum	Metals & mach.	Aircraft	
1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000000	0.567315	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1
2	Poultry and eggs	-0.000000	0.107182	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.001725	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	2
3	Farm dairy products	-0.000000	-0.000000	0.026345	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.011000	-0.000000	0.447315	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3
4	Food and feed grains	0.022937	0.177652	3.125277	0.027164	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	4
5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	7
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8
9	Forage	0.163432	-0.000000	0.175636	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	9
10	Miscellaneous agriculture	0.004467	-0.000000	0.004507	0.024430	0.095680	0.009236	0.020000	0.060713	0.013047	0.012190	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	10
11	Grain mill products	0.011091	0.366392	0.071770	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	11
12	Meat and poultry processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	12
13	Dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	13
14	Canning, preserving, freezing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	14
15	Miscellaneous agri. processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	15
16	Chemicals and fertilizers	0.000252	0.000862	0.000466	0.036539	0.016327	0.011823	0.020000	0.015052	0.009194	0.004160	0.012890	-0.000000	0.001560	0.020871	0.021000	0.000500	-0.000000	-0.000000	-0.000000	16
17	Petroleum	0.000042	0.000493	-0.000000	0.002131	0.000617	0.001828	0.004118	0.003435	0.004470	0.006170	0.000086	0.000058	0.000152	0.000240	0.000178	0.000667	0.002262	0.000111	0.000000	17
18	Fabricated metals and machinery	0.000009	0.000618	0.000084	0.002131	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	18
19	Aircraft and parts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	19
20	Primary metals	0.000014	-0.000000	0.000039	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	20
21	Other manufacturing	0.000385	0.003233	0.000427	0.001207	0.000630	0.011945	0.008824	0.005960	0.006498	0.001871	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	21
22	Mining	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	22
23	Utilities	0.000568	0.007515	0.008743	0.035859	0.010224	0.005444	0.010000	0.006748	0.003357	0.005988	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	23
24	Selected services	0.002199	0.001478	0.001671	0.001243	0.000729	0.000637	0.001515	0.000430	0.000632	0.000426	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	24
25	Trade and transportation	0.012428	0.000370	0.053818	0.001101	0.001247	0.000677	0.003529	0.002020	0.000701	0.011083	0.002621	0.000425	0.079537	0.079537	0.079537	0.079537	0.079537	0.079537	0.079537	25
26	Unallocated	0.035358	0.214414	0.027861	0.070521	0.053676	0.023104	0.055294	0.036367	0.033888	0.032578	0.043957	0.026511	0.042028	0.045143	0.046383	0.044397	0.051801	0.045626	0.053796	26

TABLE B-6 (contd.)

Sector number	Sector title	20	21	22	23	24	25	26	Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	
1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1
2	Poultry and eggs	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	2
3	Farm dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3
4	Food and feed grains	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	4
5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	7
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8
9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	9
10	Miscellaneous agriculture	-0.000000	0.012412	-0.000000	-0.000000	-0.000014	-0.000025	0.000418	10
11	Grain mill products	-0.000000	0.000006	-0.000000	-0.000000	0.000076	0.000122	0.002019	11
12	Meat and poultry processing	-0.000000	0.000165	-0.000000	-0.000000	0.000076	0.000112	0.001836	12
13	Dairy products	-0.000000	0.000017	-0.000000	-0.000000	0.000076	0.000112	0.000229	13
14	Canning, preserving, freezing	-0.000000	0.000006	-0.000000	-0.000000	0.000010	0.000122	0.002008	14
15	Miscellaneous agri. processing	-0.000000	0.000063	-0.000000	-0.000000	0.000081	0.000157	0.000507	15
16	Chemicals and fertilizers	-0.000000	0.000335	0.011309	0.000101	0.001906	0.000519	0.000106	16
17	Petroleum	0.003357	0.000174	0.000289	0.000293	0.000214	0.000122	0.000985	17
18	Fabricated metals and machinery	0.000134	0.000785	0.000206	0.000611	0.017166	0.001323	0.000725	18
19	Aircraft and parts	0.013016	0.001013	-0.000000	-0.000000	0.009732	0.000398	0.001449	19
20	Primary metals	0.000024	0.000824	0.000618	0.001371	0.000267	0.000285	0.025651	20
21	Other manufacturing	0.319671	0.151771	0.012867	0.003883	0.013458	0.000013	0.000042	21
22	Mining	0.008187	0.017327	0.217398	0.000235	0.000005	0.026501	0.016694	22
23	Utilities	0.089261	0.015604	0.028065	0.102879	0.017262	0.016598	0.011259	23
24	Selected services	0.001569	0.005194	0.001094	0.001573	0.054997	0.034376	0.031081	24
25	Trade and transportation	0.055104	0.066329	0.036920	0.020597	0.065791	0.146766	0.140897	25
26	Unallocated	0.027534	0.058928	0.069280	0.137215	0.115445			26

Each entry shows dollars of direct purchases from the Arizona sector listed at the top per dollar of output of the latter sector.

TABLE B-7
Interdependency Coefficients, Arizona Economy, 1952

Table with 20 columns (Sector number, Sector title, Meat animals, Poultry and eggs, Farm dairy prod., Grains, Cotton, Veg., Fruit and nuts, Citrus, Forage, Misc. agr., Grain mill prod., Poultry prod., Dairy prod., Preserving freezing, Agr. prod., and fert., Petro-chem, Metals & non-fert., Air-craft) and 20 rows of data.

TABLE B-7 (contd.)

Table with 10 columns (Sector number, Sector title, Primary metals, Other mfg., Mining, Utilities, Selected services, Trade and trans., Non-located) and 26 rows of data.

Each entry shows dollars of direct and indirect requirements of the Arizona sector listed at the left per dollar of the final demand for products of the Arizona sector listed at the top.

TABLE B-6
Direct and Indirect Water Requirements, Arizona Summary, 1995

Table with 20 columns (Sector number, Sector title, Meat animals, Poultry and eggs, Farm dairy prod., Grains, Cotton, Veg., Fruit and nuts, Citrus, Forage, Misc. agri., Grain mill prod., Meat & poultry proc., Dairy prod., Canning, preserving, freezing, Misc. agri. proc., Chem. and fert., Petroleum, Non-metals & synth., Air-craft) and a 21st column for Sector number. Includes a TOTAL row at the bottom.

TABLE B-6 (contd.)

Table with 9 columns (Sector number, Sector title, Primary metals, Other mfg., Mining, Utilities, Selected services, Trade and trans., Unallocatd) and a 10th column for Sector number. Includes a TOTAL row at the bottom.

Each entry shows the million gallons of water intake required by Arizona sector listed at the left per \$1,000 of final demand for products of Arizona sector listed at the top.

TABLE 3-3
Interindustry Flows of Goods and Services by Sector and Region of Origin and Destination, California-Arizona Economy, 1958¹

Sector number	Sector title	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	C 13	C 14	C 15	C 16	C 17	C 18	C 19	Sector number	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Other farm	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and petr.	Petro- leum	Wholesale & retail	Auto parts		
		thousand dollars																				
C 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	452644.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 1	
C 2	Poultry and eggs	-0.	57836.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	62910.	33.	6.	2634.	-0.	-0.	-0.	-0.	C 2	
C 3	Farm dairy products	-0.	-0.	10401.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	319831.	-0.	-0.	-0.	-0.	-0.	C 3	
C 4	Food and feed grains	28412.	26445.	18710.	4948.	-0.	-0.	-0.	-0.	-0.	479.	87879.	-0.	-0.	-0.	4967.	-0.	-0.	-0.	-0.	C 4	
C 5	Cotton	-0.	-0.	-0.	-0.	697.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 5	
C 6	Vegetables	-0.	-0.	-0.	-0.	-0.	1783.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 6	
C 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	171683.	-0.	-0.	-0.	-0.	-0.	C 7	
C 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	268344.	46259.	180.	-0.	-0.	-0.	C 8	
C 9	Forage	98703.	-0.	93447.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	15616.	-0.	-0.	-0.	-0.	-0.	C 9	
C 10	Miscellaneous agriculture	2000.	-0.	2910.	7467.	37754.	31280.	11697.	3884.	8221.	12725.	-0.	-0.	50.	56768.	48252.	10954.	-0.	-0.	C 10		
C 11	Grain mill products	35517.	88135.	32456.	-0.	-0.	-0.	-0.	-0.	-0.	384.	4808.	-0.	305.	6268.	60810.	2299.	-0.	-0.	-0.	C 11	
C 12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	785.	46273.	-0.	10425.	17681.	3073.	-0.	-0.	-0.	C 12	
C 13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1438.	3233.	61815.	9938.	7961.	988.	-0.	-0.	-0.	C 13	
C 14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	25403.	6811.	516.	-0.	-0.	-0.	C 14	
C 15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	23020.	-0.	48787.	75014.	132756.	48324.	868.	C 15	
C 16	Chemicals and fertilizers	810.	985.	332.	7587.	7336.	20750.	22840.	5378.	4733.	3994.	10875.	3300.	15149.	25460.	33708.	285841.	61937.	10772.	5064.	C 16	
C 17	Petroleum	381.	3067.	158.	8116.	3420.	10634.	12792.	2454.	5039.	3280.	1046.	2444.	3752.	5039.	-0.	1431637.	3752.	17018.	4848.	C 17	
C 18	Fabricated metals and machinery	5874.	4317.	4223.	13949.	5015.	16695.	18755.	3781.	9391.	5672.	3466.	5985.	4629.	170714.	34019.	26223.	57208.	832824.	188945.	C 18	
C 19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	67.	-0.	24464.	719662.	18995.	C 19
C 20	Primary metals	38.	25.	20.	8.	8.	32.	32.	4.	9.	9.	-0.	-0.	23.	16.	1547.	1103.	10537.	944.	531754.	18911.	C 20
C 21	Other manufacturing	1445.	1860.	1146.	1233.	915.	12536.	11302.	2727.	791.	2043.	15232.	4519.	25719.	81586.	31588.	40448.	15191.	150112.	47681.	C 21	
C 22	Mining	-0.	-0.	-0.	15.	8.	58.	26.	7.	10.	19.	1000.	564.	697.	1452.	11979.	39473.	3293.	-0.	412.	C 22	
C 23	Utilities	2572.	2190.	2434.	949.	1644.	3672.	4082.	954.	727.	2991.	1601.	5900.	4748.	10312.	9684.	17708.	35355.	35687.	16278.	C 23	
C 24	Selected services	2476.	1687.	1166.	2423.	1339.	4599.	4959.	1041.	1643.	1720.	1320.	37816.	6934.	8236.	8592.	11731.	9147.	13644.	3888.	C 24	
C 25	Trade and transportation	19337.	20810.	25137.	7203.	5504.	11712.	9989.	2287.	4482.	6219.	20796.	63772.	65552.	136503.	382674.	140134.	147336.	248824.	55958.	C 25	
C 26	Unallocated	10467.	5760.	9080.	16274.	19502.	21172.	11869.	2635.	9383.	9629.	10742.	64909.	31850.	69130.	107545.	100593.	288415.	211680.	38498.	C 26	
C 27	Scrap and by-products	13782.	14306.	5771.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7428.	55425.	26766.	48187.	69272.	1202.	13194.	6597.	1889.	C 27	
C 28	Net trade from outside	217533.	81596.	53140.	13481.	7782.	25334.	25594.	5811.	7492.	7291.	61477.	250356.	40929.	165317.	146004.	182890.	94098.	855623.	172134.	C 28	
C 29	Maintenance construction	5806.	4261.	4126.	3937.	3390.	7798.	10470.	2283.	2678.	3490.	1029.	14.	3195.	7924.	7906.	2299.	3860.	6009.	3873.	C 29	
C 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 30
	Households and government	28984.	12368.	129338.	89301.	205630.	379958.	261084.	125550.	151913.	276319.	180500.	171455.	108221.	246277.	707496.	547001.	957466.	2022672.	2231017.		
A 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	128.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 1	
A 2	Poultry and eggs	-0.	13.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	15.	-0.	-0.	1.	-0.	-0.	-0.	-0.	A 2	
A 3	Farm dairy products	-0.	-0.	15.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	463.	-0.	-0.	-0.	-0.	-0.	A 3	
A 4	Food and feed grains	358.	333.	236.	62.	-0.	-0.	-0.	-0.	-0.	-0.	1107.	-0.	-0.	-0.	63.	-0.	-0.	-0.	-0.	A 4	
A 5	Cotton	-0.	-0.	-0.	-0.	42.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 5	
A 6	Vegetables	-0.	-0.	-0.	-0.	-0.	7.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	694.	-0.	-0.	-0.	-0.	-0.	A 6	
A 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 7	
A 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	234.	-0.	-0.	-0.	-0.	-0.	A 8	
A 9	Forage	1368.	-0.	1295.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	82.	70.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 9	
A 10	Miscellaneous agriculture	3.	-0.	4.	11.	55.	46.	17.	8.	12.	19.	-0.	-0.	-0.	83.	70.	16.	-0.	-0.	-0.	A 10	
A 11	Grain mill products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 11
A 12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 12
A 13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 13
A 14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 14
A 15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 15
A 16	Chemicals and fertilizers	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 16
A 17	Petroleum	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 17
A 18	Fabricated metals and machinery	23.	17.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 18
A 19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 19
A 20	Primary metals	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 20
A 21	Other manufacturing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 21
A 22	Mining	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 22
A 23	Utilities	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 23
A 24	Selected services	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 24
A 25	Trade and transportation	18.	20.	24.	7.	5.	11.	9.	2.	6.	6.	20.	60.	82.	129.	362.	132.	139.	235.	33.	A 25	
A 26	Unallocated	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 26
A 27	Scrap and by-products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 27
A 28	Net trade with outside	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 28
A 29	Maintenance construction	6.	4.	4.	4.	3.	7.	10.	2.	3.	3.	1.	-0.	3.	8.	-0.	-0.	-0.	-0.	-0.	A 29	
A 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 30
	Households and government	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	
GROSS OUTLAY		475913.	326035.	395590.	177030.	300069.	548150.	405601.	158825.	206568.	342311.	440725.	1231629.	769476.	1623105.	1869689.	1437277.	3156416.	5003122.	3569819.	G.T.	

(Continued on next page.)

Table B-9 continued.

Sector group	Sector title	C 20	C 21	C 22	C 23	C 24	C 25	C 26	C 27	C 28	C 29	C 30	C 31	C 32	C 33	C 34	C 35	C 36	Sector number		
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	Scrap and by-prod.	Net trade to outside	Maint. constr.	New constr.	State & local gov.	Federal gov.	Inventory addit'n	Inventory deplet'n	Gross pri. cap. form.	All households			
		thousand dollars								thousand dollars											
C 1	Meat animals and products	-0.	67.	-0.	-0.	-0.	-0.	-0.	212.	-13026.	-0.	-0.	-0.	-0.	19669.	-0.	-0.	3320.	C 1		
C 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-19358.	-0.	-0.	-0.	-0.	1743.	-0.	-0.	201364.	C 2		
C 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	51465.	-212.	-0.	-0.	-0.	-0.	2928.	-0.	-0.	10964.	C 3		
C 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-2109.	-0.	-0.	-0.	-0.	9190.	-0.	-0.	-0.	C 4		
C 5	Cotton	-0.	670.	-0.	-0.	-0.	-0.	-0.	26211.	284242.	-0.	-0.	-0.	-0.	-0.	-11751.	-0.	-0.	C 5		
C 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2475.	126369.	-0.	-0.	-0.	2796.	69.	-0.	-0.	242948.	C 6		
C 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	53899.	-0.	-0.	-0.	-0.	-0.	-706.	-0.	-0.	35077.	C 7	
C 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	104024.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	38740.	C 8	
C 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 9	
C 10	Miscellaneous agriculture	-0.	3732.	-0.	-0.	-0.	-0.	-0.	-0.	49893.	-0.	-0.	-0.	-0.	-0.	-1985.	-0.	-0.	56493.	C 10	
C 11	Grain mill products	-0.	15.	-0.	-0.	-0.	-0.	-0.	2583.	-5488.	-0.	-0.	1933.	-0.	1760.	-0.	-0.	203128.	C 11		
C 12	Meat and poultry processing	-0.	1879.	-0.	-0.	158.	2306.	35289.	15488.	-0.	-0.	1818.	8420.	-0.	4904.	-0.	-0.	1083131.	C 12		
C 13	Dairy products	-0.	126.	-0.	-0.	106.	1566.	969.	-0.	-0.	-0.	-0.	5807.	-0.	3064.	-0.	-0.	672466.	C 13		
C 14	Canning, preserving, freezing	-0.	139.	-0.	-0.	77.	1164.	741.	-0.	1023180.	-0.	-0.	12436.	-0.	6462.	-0.	-0.	475325.	C 14		
C 15	Miscellaneous agri. processing	191.	1621.	2.	-0.	139.	1196.	8431.	8329.	-34215.	-0.	-0.	10598.	-0.	7051.	-0.	-0.	1511322.	C 15		
C 16	Chemicals and fertilizers	11411.	163245.	4682.	471.	17310.	5603.	49668.	24284.	-15977.	93217.	51374.	53937.	-0.	102.	-0.	-0.	406620.	C 16		
C 17	Petroleum	7388.	24603.	6967.	15578.	21510.	183465.	49698.	3186.	391021.	46258.	113091.	59504.	-0.	-0.	-26712.	-0.	-0.	739299.	C 17	
C 18	Fabricated metals and machinery	47231.	127697.	15152.	14774.	142103.	60841.	125501.	70288.	-63433.	122006.	736102.	128791.	-0.	-73152.	940959.	1133144.	1133144.	C 18		
C 19	Aircraft and parts	81.	9879.	-0.	-0.	501860.	22140.	136615.	39386.	2074241.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4530.	4530.	C 19	
C 20	Primary metals	193444.	69780.	6899.	1593.	573.	4475.	16597.	34552.	-14141.	44160.	228630.	-0.	-0.	-9122.	-0.	-0.	1432.	1432.	C 20	
C 21	Other manufacturing	17177.	981267.	13541.	43098.	133659.	109334.	504302.	35937.	-22305.	101274.	640438.	88186.	-0.	-1262.	93024.	-0.	-0.	1809430.	C 21	
C 22	Mining	111675.	52688.	34054.	128.	783.	2665.	15999.	-0.	3537.	1610.	8203.	21803.	-0.	-2841.	-0.	-0.	28434.	28434.	C 22	
C 23	Utilities	25665.	57987.	8646.	325422.	40224.	240093.	206122.	-0.	-3070.	3991.	22441.	95420.	41423.	-0.	-0.	24720.	971255.	971255.	C 23	
C 24	Selected services	4750.	26423.	706.	2890.	263031.	205750.	200739.	-0.	481913.	33140.	7235.	25054.	-0.	-0.	1129.	-0.	-0.	1891063.	C 24	
C 25	Trade and transportation	91901.	347737.	14932.	28422.	135355.	386059.	500644.	21969.	-13072.	202484.	789771.	99734.	201668.	-0.	-0.	295460.	6573771.	6573771.	C 25	
C 26	Unallocated	30589.	160746.	19199.	178506.	599660.	1478380.	1795134.	-0.	-0.	26143.	402475.	220479.	296422.	-0.	-0.	88513.	7609534.	7609534.	C 26	
C 27	Scrap and by-products	42232.	10264.	671.	18586.	9916.	10156.	-0.	-0.	-0.	1643.	8973.	-0.	-0.	-0.	-0.	-29668.	657.	657.	C 27	
C 28	Net trade from outside	177414.	252671.	24461.	121975.	209598.	288549.	591699.	-1944.	-0.	180166.	909066.	172849.	37057.	-123.	1000.	465368.	-12465.	-12465.	C 28	
C 29	Maintenance construction	5486.	8355.	432.	528808.	29159.	185218.	729446.	-0.	-12272.	135.	860.	580644.	118268.	-0.	-0.	-0.	4994.	4994.	C 29	
C 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-36803.	-0.	-0.	1097368.	334846.	-0.	-0.	5138191.	-0.	-0.	-0.	C 30
C 31	Households and government	454781.	2734773.	244500.	941976.	1705970.	7923378.	8973479.	-0.	-0.	1404199.	2626266.	2344207.	5653978.	-0.	-0.	-0.	-0.	-0.	-0.	C 31
A 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.	-0.	-0.	-0.	1.	A 1	
A 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	47.	A 2	
A 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	75.	-0.	-0.	-0.	-0.	-0.	4.	-0.	-0.	16.	A 3		
A 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	63.	-0.	-0.	-0.	-0.	A 4	
A 5	Cotton	-0.	40.	-0.	-0.	-0.	-0.	-0.	1563.	16950.	-0.	-0.	-0.	-0.	-0.	-701.	-0.	-0.	-0.	A 5	
A 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	10.	511.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	982.	A 6		
A 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 7	
A 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1567.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	581.	A 8		
A 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 9	
A 10	Miscellaneous agriculture	-0.	5.	-0.	-0.	-0.	-0.	-0.	-0.	73.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	83.	A 10		
A 11	Grain mill products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 11	
A 12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 12	
A 13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 13	
A 14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 14	
A 15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 15	
A 16	Chemicals and fertilizers	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 16	
A 17	Petroleum	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 17	
A 18	Fabricated metals and machinery	185.	501.	59.	58.	558.	239.	493.	276.	-0.	479.	2890.	506.	-0.	-0.	-287.	3694.	4448.	4448.	A 18	
A 19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 19	
A 20	Primary metals	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 20	
A 21	Other manufacturing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 21	
A 22	Mining	342.	161.	104.	-0.	2.	8.	49.	-0.	130.	57.	25.	67.	-0.	-0.	-0.	-0.	87.	87.	A 22	
A 23	Utilities	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 23	
A 24	Selected services	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 24	
A 25	Trade and transportation	87.	329.	14.	27.	128.	365.	473.	21.	46.	191.	747.	94.	191.	-0.	-0.	279.	6215.	6215.	A 25	
A 26	Unallocated	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 26	
A 27	Scrap and by-products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 27	
A 28	Net trade with outside	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 28	
A 29	Maintenance construction	5.	8.	-0.	505.	28.	177.	697.	-0.	-0.	-0.	1.	555.	113.	-0.	-0.	4795.	-0.	-0.	A 29	
A 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 30	
A 31	Households and government	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 31
GROSS OUTLAY		1222035.	5037408.	395021.	2222817.	3811907.	11113323.	13942913.	336366.	4387937.	2276253.	6570406.	5029416.	7230948.	55883.	-130665.	7860083.	25788490.	G.O.		

Table B-9 continued.

Sector number	Sector title	A 1	A 2	A 3	A 4	A 5	A 6	A 7	A 8	A 9	A 10	A 11	A 12	A 13	A 14	A 15	A 16	A 17	A 18	A 19	Sector number	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petroleum	Metals & mach.	Aircraft		
C 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2670.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 1	
C 2	Poultry and eggs	-0.	2075.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	212.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 2	
C 3	Farm dairy products	-0.	-0.	6.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	170.	-0.	-0.	-0.	-0.	-0.	-0.	C 3	
C 4	Food and feed grains	245.	108.	241.	57.	-0.	-0.	-0.	-0.	-0.	22.	496.	-0.	-0.	-0.	7.	-0.	-0.	-0.	-0.	C 4	
C 5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 5	
C 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 6	
C 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	163.	-0.	-0.	-0.	-0.	C 7	
C 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 8	
C 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 9	
C 10	Miscellaneous agriculture	5.	-0.	1.	5.	114.	5.	5.	4.	3.	-0.	-0.	-0.	-0.	6.	-0.	-0.	-0.	-0.	-0.	C 10	
C 11	Grain mill products	374.	701.	436.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	175.	-0.	7.	6.	1172.	100.	-0.	-0.	-0.	C 11	
C 12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 12	
C 13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 13	
C 14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	460.	545.	153.	-0.	-0.	-0.	C 14	
C 15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	203.	-0.	49.	32.	714.	555.	-0.	-0.	-0.	C 15	
C 16	Chemicals and fertilizers	15.	3.	5.	422.	1010.	358.	14.	61.	129.	46.	214.	12.	77.	36.	433.	963.	11.	60.	22.	C 16	
C 17	Petroleum	6.	4.	-0.	57.	88.	30.	3.	10.	27.	7.	2.	3.	7.	1.	25.	6.	10.	7.	7.	C 17	
C 18	Fabricated metals and machinery	56.	3.	15.	208.	201.	87.	5.	22.	103.	107.	8.	6.	17.	14.	30.	4.	6050.	3591.	-0.	C 18	
C 19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 19	
C 20	Primary metals	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7.	20.	517.	265.	-0.	C 20	
C 21	Other manufacturing	7.	3.	1.	4.	12.	112.	2.	7.	2.	5.	37.	11.	100.	10.	48.	41.	247.	198.	-0.	C 21	
C 22	Mining	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 22	
C 23	Utilities	13.	1.	4.	3.	25.	7.	-0.	1.	2.	3.	2.	6.	6.	1.	5.	13.	1.	15.	14.	C 23	
C 24	Selected services	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 24
C 25	Trade and transportation	175.	-0.	136.	3.	19.	5.	1.	2.	2.	29.	101.	462.	361.	32.	370.	247.	16.	518.	246.	C 25	
C 26	Unallocated	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 26
C 27	Scrap and by-products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 27
C 28	Net trade from outside	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 28
C 29	Maintenance construction	47.	2.	18.	80.	22.	1.	4.	13.	5.	6.	10.	20.	2.	27.	10.	-0.	14.	19.	-0.	C 29	
C 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 30
C 30	Households and government	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 30
A 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	29278.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 1	
A 2	Poultry and eggs	-0.	870.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	89.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 2	
A 3	Farm dairy products	-0.	-0.	678.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	20640.	-0.	-0.	-0.	-0.	-0.	-0.	A 3	
A 4	Food and feed grains	3276.	1442.	3224.	765.	-0.	-0.	-0.	-0.	296.	6632.	-0.	-0.	-0.	100.	-0.	-0.	-0.	-0.	-0.	A 4	
A 5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 5	
A 6	Vegetables	-0.	-0.	-0.	-0.	-0.	291.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	71.	-0.	-0.	-0.	-0.	-0.	A 6	
A 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	168.	-0.	-0.	-0.	-0.	-0.	A 7	
A 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1847.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 8	
A 9	Forage	23342.	-0.	4520.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 9	
A 10	Miscellaneous agriculture	638.	-0.	116.	688.	14428.	682.	34.	601.	447.	328.	-0.	-0.	-0.	25.	4971.	424.	-0.	-0.	-0.	A 10	
A 11	Grain mill products	1584.	2974.	1847.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	741.	-0.	28.	16.	394.	162.	-0.	-0.	-0.	A 11	
A 12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	25.	2431.	-0.	16.	246.	100.	-0.	-0.	-0.	A 12	
A 13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	65.	112.	4504.	22.	32.	9.	-0.	-0.	-0.	A 13	
A 14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	72.	47.	1053.	818.	-0.	-0.	A 14	
A 15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	300.	-0.	72.	47.	1056.	2347.	27.	147.	53.	A 15	
A 16	Chemicals and fertilizers	36.	7.	12.	1029.	2462.	873.	34.	149.	315.	112.	521.	30.	188.	88.	9.	26.	6.	11.	7.	A 16	
A 17	Petroleum	6.	4.	-0.	60.	93.	32.	3.	11.	28.	7.	2.	3.	7.	1.	21.	46.	6.	9408.	5585.	A 17	
A 18	Fabricated metals and machinery	87.	5.	23.	324.	312.	135.	7.	34.	160.	166.	13.	10.	27.	2.	-0.	1.	-0.	452.	18892.	A 18	
A 19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6012.	3079.	A 19	
A 20	Primary metals	2.	-0.	1.	-0.	3.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7.	377.	322.	9.	1948.	1560.	A 20	
A 21	Other manufacturing	55.	26.	11.	34.	95.	882.	15.	59.	17.	37.	292.	85.	792.	75.	1.	155.	10.	15.	-0.	A 21	
A 22	Mining	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.	327.	804.	41.	898.	878.	A 22	
A 23	Utilities	812.	61.	225.	165.	1542.	402.	17.	67.	115.	161.	103.	363.	346.	31.	327.	149.	3.	245.	29.	A 23	
A 24	Selected services	314.	12.	43.	35.	110.	47.	4.	15.	15.	17.	61.	249.	385.	18.	3757.	2511.	166.	5262.	2503.	A 24	
A 25	Trade and transportation	1775.	3.	1385.	31.	188.	50.	6.	20.	24.	298.	1023.	4699.	3670.	326.	3249.	2010.	121.	5323.	7046.	A 25	
A 26	Unallocated	5050.	117.	717.	1986.	8094.	1706.	94.	360.	1161.	876.	617.	2169.	2083.	193.	-0.	-0.	-0.	-0.	-0.	A 26	
A 27	Scrap and by-products	763.	163.	28.	-0.	-0.	725.	27.	73.	-0.	11.	1548.	2667.	-0.	-0.	12686.	-0.	-0.	42.	10.	A 27	
A 28	Net trade with outside	69652.	-1978.	15.	6074.	10295.	7421.	279.	1093.	2691.	1994.	2547.	5732.	3241.	757.	3977.	7814.	1888.	21304.	7845.	A 28	
A 29	Maintenance construction	500.	21.	104.	189.	857.	236.	12.	44.	49.	49.	61.	109.	216.	23.	291.	109.	4.	148.	201.	A 29	
A 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	A 30
A 30	Households and government	33990.	1490.	11932.	16004.	110578.	59731.	1143.	7251.	28862.	20465.	7479.	187.	9128.	1676.	25964.	5968.	332.	40302.	46539.	G.O.	
GROSS OUTLAY		142825.	8117.	25736.	28161.	150795.	73840.	1701.	9898.	34260.	26891.	23274.	51606.	46142.	4163.	50453.	38954.	2652.	98948.	98589.		

(Continued on next page.)

Table B-9 continued.

Sector number	Sector title	A 20 - A 26								A 27 - A 30								A 31 - A 35				Sector number	
		Primary metals	Other mfg.	Food	Utilities	Selected services	Trade and trans.	Unal-	Scrap and by-prod.	Net trade with outside	Maint. constr.	New const.	State & local gov.	Federal gov.	Inventory stock's	Inventory cons't's	Invest. pers. cap.	All house-holds					
		thousand dollars								thousand dollars													
C 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	9858.	-0.	-0.	-0.	-0.	-0.	288.	-0.	-0.	209.	475911.	C 1	
C 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	339.	-0.	-0.	16732.	326035.	C 2		
C 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	22.	-0.	-0.	-0.	-0.	4.	-0.	-0.	11.	395500.	C 3			
C 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	766.	-0.	-0.	-0.	1.	-0.	159.	-0.	3.	177030.	C 4		
C 5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	300069.	C 5		
C 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	19.	548150.	C 6		
C 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	677.	-0.	-0.	-0.	1.	-0.	-0.	-0.	1700.	405600.	C 7		
C 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	340.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	97.	188225.	C 8		
C 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	205408.	C 9		
C 10	Miscellaneous agriculture	-0.	17.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	36.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	10.	942310.	C 10		
C 11	Grain mill products	-0.	-0.	-0.	-0.	1.	4.	98.	41.	-0.	-0.	-0.	-0.	-0.	59.	-0.	-0.	-0.	2335.	440727.	C 11		
C 12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1231630.	C 12	
C 13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	749477.	C 13	
C 14	Canning, preserving, freezing	-0.	17.	-0.	-0.	34.	153.	3882.	-0.	-0.	-0.	-0.	-0.	-0.	289.	-0.	-0.	-0.	-0.	64487.	1623104.	C 14	
C 15	Miscellaneous agri. processing	-0.	7.	-0.	-0.	12.	52.	1354.	6.	-0.	-0.	-0.	-0.	-0.	61.	-0.	-0.	-0.	-0.	31165.	1849686.	C 15	
C 16	Chemicals and fertilizers	226.	313.	1459.	8.	164.	41.	207.	4347.	-0.	584.	420.	164.	-0.	-0.	-0.	-0.	-0.	-0.	4139.	1437278.	C 16	
C 17	Petroleum	21.	29.	87.	52.	43.	312.	100.	2.	-0.	81.	192.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1252.	3156418.	C 17	
C 18	Fabricated metals and machinery	1376.	654.	420.	725.	2316.	538.	3827.	475.	6388.	3241.	17758.	431.	-0.	-0.	-0.	-1174.	7547.	8383.	5003122.	C 18		
C 19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3569819.	C 19	
C 20	Primary metals	4520.	73.	260.	22.	124.	22.	124.	124.	7237.	203.	638.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4.	1222036.	C 20	
C 21	Other manufacturing	171.	3385.	513.	92.	358.	344.	3237.	38.	956.	6725.	195.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	285.	5076.	C 21	
C 22	Mining	337.	1569.	1.	-0.	-0.	-0.	1.	-0.	5111.	23.	101.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	395021.	C 22	
C 23	Utilities	67.	45.	145.	316.	59.	274.	272.	-0.	505.	5.	25.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1107.	2222019.	C 23	
C 24	Selected services	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 24	
C 25	Trade and transportation	892.	1148.	1143.	380.	1359.	2140.	3042.	-0.	2261.	1146.	4369.	297.	1536.	-0.	-0.	-0.	-0.	-0.	1083.	30720.	C 25	
C 26	Unallocated	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	C 26	
C 27	Scrap and by-products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	336365.	C 27	
C 28	Net trade from outside	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5031423.	C 28	
C 29	Maintenance construction	10.	31.	40.	628.	207.	1107.	5291.	-0.	-0.	-0.	-0.	-0.	-0.	4182.	460.	-0.	-0.	-0.	-0.	2276253.	C 29	
C 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1931.	-0.	-0.	-0.	-0.	6570405.	C 30	
C 30	Households and government	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	43840257.	C 30	
A 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	107956.	-0.	-0.	-0.	-0.	-0.	3161.	-0.	-0.	2294.	142824.	A 1		
A 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-76.	-0.	-0.	-0.	-0.	-0.	142.	-0.	-0.	-0.	7014.	8117.	A 2	
A 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2667.	-573.	-0.	-0.	-0.	-0.	450.	-0.	-0.	-0.	1900.	25735.	A 3	
A 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	8016.	-0.	-0.	-0.	10.	-0.	-0.	-0.	44.	28162.	A 4		
A 5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	13098.	49775.	-0.	-0.	-0.	49.	-0.	-0.	-0.	-0.	150795.	A 5		
A 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	58911.	-0.	-0.	-0.	-0.	24.	-0.	-0.	-0.	-0.	12329.	71841.	A 6	
A 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	452.	-0.	-0.	-0.	-0.	1.	-0.	-0.	-0.	-0.	1138.	9898.	A 7	
A 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5171.	-0.	-0.	-0.	-0.	3.	-0.	-0.	-0.	-0.	2145.	14281.	A 8	
A 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1979.	-0.	-0.	-0.	-0.	30.	-0.	-0.	-0.	-0.	-0.	1253.	26889.	A 9
A 10	Miscellaneous agriculture	-0.	2182.	-0.	-0.	-0.	-0.	-0.	-0.	4125.	-0.	-0.	-0.	-0.	3.	-0.	-0.	-0.	-0.	-0.	9902.	23273.	A 10
A 11	Grain mill products	-0.	1.	-0.	-0.	3.	16.	416.	172.	-0.	-0.	-0.	-0.	-0.	251.	-0.	-0.	-0.	-0.	46260.	51600.	A 11	
A 12	Meat and poultry processing	-0.	29.	-0.	-0.	-0.	77.	2008.	-0.	-0.	-0.	-0.	-0.	-0.	79.	-0.	-0.	-0.	-0.	38661.	46142.	A 12	
A 13	Dairy products	-0.	3.	-0.	-0.	16.	71.	1826.	-0.	-0.	-0.	-0.	-0.	-0.	512.	-0.	-0.	-0.	-0.	3799.	4161.	A 13	
A 14	Canning, preserving, freezing	-0.	1.	-0.	-0.	2.	9.	228.	-0.	-0.	-0.	-0.	-0.	-0.	17.	-0.	-0.	-0.	-0.	45955.	56451.	A 14	
A 15	Miscellaneous agri. processing	-0.	11.	-0.	-0.	17.	77.	1997.	9.	-0.	-0.	-0.	-0.	-0.	61.	-0.	-0.	-0.	-0.	18090.	38953.	A 15	
A 16	Chemicals and fertilizers	552.	762.	3557.	19.	400.	99.	504.	10599.	-0.	1423.	1025.	401.	-0.	36.	-0.	-0.	-0.	-0.	1117.	2452.	A 16	
A 17	Petroleum	22.	31.	91.	55.	45.	328.	105.	2.	-0.	85.	202.	63.	-0.	-0.	-0.	-0.	-0.	-0.	11737.	19037.	A 17	
A 18	Fabricated metals and machinery	2140.	1017.	653.	1127.	3602.	837.	5952.	738.	-9706.	5041.	27616.	671.	-0.	-0.	-0.	-1826.	11737.	1031.	98989.	A 18		
A 19	Aircraft and parts	4.	178.	-0.	-0.	2042.	797.	5694.	216.	72002.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1031.	158.	A 19	
A 20	Primary metals	52559.	848.	3025.	56.	257.	292.	1441.	1438.	84145.	2359.	7416.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	73.	164418.	A 20	
A 21	Other manufacturing	1346.	2680.	4047.	728.	2824.	2710.	25511.	297.	449.	7538.	53002.	1536.	-0.	176.	-0.	-0.	-0.	-0.	2249.	40007.	A 21	
A 22	Mining	14676.	3046.	48376.	44.	1.	8.	42.	-0.	221503.	1018.	4483.	2.	-0.	-0.	-0.	-0.	-0.	-0.	1066.	47634.	A 22	
A 23	Utilities	4080.	2743.	8827.	19290.	3622.	16762.	14603.	-0.	30840.	285.	1500.	3201.	3691.	-0.	-0.	-0.	-0.	-0.	104225.	289831.	A 23	
A 24	Selected services	258.	913.	344.	295.	11540.	10498.	55695.	-0.	55695.	11198.	1858.	841.	10034.	-0.	-0.	-0.	-0.	-0.	11006.	393508.	A 24	
A 25	Trade and transportation	9060.	11660.	11612.	3862.	13805.	21743.	30911.	-0.	12468.	11646.	44391.	3014.	15608.	-0.	-0.	-0.	-0.	-0.	3526.	467446.	A 25	
A 26	Unallocated	4527.	10359.	21790.	25728.	24224.	92829.	140128.	-0.	5438.	1544.	24459.	103271.	26300.	-0.	-0.	-0.	-0.	-0.	-0.	994541.	A 26	
A 27	Scrap and by-products	1620.	25.	55.	-0.	246.	135.	55.	-0.	7859.	22.	118.	397.	-0.	-0.	-0.	-0.	-0.	-0.	20.	29295.	A 27	
A 28	Net trade with outside	14164.	30126.	37922.	13698.	27534.	19458.	30289.	-5054.	-0.	11664.	35739.	6609.	10092.	-1576.	1203.	-10834.	273090.	-0.	666743.	A 28		
A 29	Maintenance construction	104.	331.	422.	6697.	2211.	11806.	56448.	-0.	-2175.	9.	55.	44613.	4911.	-0.	-0.	-0.	-0.	-0.	-0.	130925.	A 29	
A 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-6123.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	240958.	A 30	
A 30	Households and government	51704.	79056.	150164.	113478.	113065.	448999.	641750.	-0.	-0.	81876.	137059.	141838.	390248.	-0.	-0.	-0.	-0.	-0.	-0.	2770258.	A 30	
GROSS OUTLAY		164416.	175791.	316521.	187502.	209831.	632498.	994541.	29296.	741439.	130924.	369076.	313249.	497985.	77204.	-5129.	300421.	1718392.	12687635.	G.V.			

Each entry shows the value of goods and services produced by California or Arizona sector listed at the left that were purchased by the California or Arizona sector listed at the top.

Note column and row totals do not add up exactly due to rounding.

TABLE B-10

Technical and Trade Coefficients, California-Arizona Economy, 1955

Sector number	Sector title	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	C 13	C 14	C 15	C 16	C 17	C 18	C 19	Sector number
C 1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 1
C 2	Poultry and eggs	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 2
C 3	Farm dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 3
C 4	Food and feed grains	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 4
C 5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 5
C 6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 6
C 7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 7
C 8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 8
C 9	Miscellaneous agriculture	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 9
C 10	Grain mill products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 10
C 11	Meat and poultry processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 11
C 12	Dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 12
C 13	Canning, preserving, freezing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 13
C 14	Miscellaneous agri. processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 14
C 15	Chemicals and fertilizers	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 15
C 16	Fabricated metals and machinery	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 16
C 17	Struct. and parts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 17
C 18	Primary metals	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 18
C 19	Metal manufacturing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 19
C 20	Textile manufacturing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 20
C 21	Chem. manufacturing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 21
C 22	Electric power	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 22
C 23	Transportation	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 23
C 24	Services	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 24
C 25	Government	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 25
C 26	Unallocated	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	A 26

(Continued on next page.)

Table B-10 continued.

Sector number	Sector title	C 20	C 21	C 22	C 23	C 24	C 25	C 26	A 1	A 2	A 3	A 4	A 5	A 6	A 7	A 8	A 9	A 10	A 11	A 12	Sector number		
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat poultry proc.			
C 1	Meat animals and products	-0.000000	0.000013	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.051738	C 1	
C 2	Poultry and eggs	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.255636	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.004188	C 2	
C 3	Farm dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000233	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 3
C 4	Food and feed grains	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.001715	0.013305	0.009365	0.002024	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.021312	C 4
C 5	Cotton	-0.000000	0.000133	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 5
C 6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 6
C 7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 7
C 8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 8
C 9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 9
C 10	Miscellaneous agriculture	-0.000000	0.000741	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000035	-0.000000	0.000039	0.000178	0.000756	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 10
C 11	Grain mill products	-0.000000	0.000003	-0.000000	-0.000000	-0.000000	0.000018	0.000009	0.052619	0.086362	0.016942	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.007519	C 11
C 12	Meat and poultry processing	-0.000000	0.000373	-0.000000	-0.000000	0.000041	0.000207	0.000531	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 12
C 13	Dairy products	-0.000000	0.000025	-0.000000	-0.000000	0.000028	0.000141	0.000069	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 13
C 14	Canning, preserving, freezing	-0.000000	0.000308	-0.000000	-0.000000	0.000020	0.000105	0.000053	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 14
C 15	Miscellaneous agri. processing	0.000156	0.000322	0.000005	-0.000000	0.000036	0.000108	0.000605	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 15
C 16	Chemicals and fertilizers	0.009338	0.032407	0.011853	0.000212	0.004541	0.000504	0.003562	0.000105	0.000370	0.000194	0.014985	0.006698	0.004648	0.008235	0.006162	0.003765	0.001711	0.009195	0.000231	-0.000000	0.000231	C 16
C 17	Petroleum	0.006046	0.004884	0.017637	0.007008	0.005643	0.016509	0.003564	0.000042	0.000493	-0.000000	0.002024	0.000584	0.000406	0.001765	0.000788	0.000266	0.000084	0.000084	0.000084	0.000051	-0.000000	C 17
C 18	Fabricated metals and machinery	0.038649	0.025350	0.038357	0.006647	0.037279	0.005475	0.009001	0.000392	0.000370	0.000583	0.007386	0.001333	0.001178	0.002222	0.003006	0.003979	0.000344	0.000344	0.000344	0.000344	-0.000000	C 18
C 19	Aircraft and parts	0.000066	0.001961	-0.000000	-0.000000	0.131656	0.001992	0.009798	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 19
C 20	Primary metals	0.158297	0.013852	0.017465	0.000717	0.000150	0.000403	0.001190	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 20
C 21	Other manufacturing	0.014056	0.194796	0.034279	0.019389	0.035064	0.009838	0.036169	0.000049	0.000370	0.000039	0.000142	0.000080	0.001517	0.001176	0.000707	0.000058	0.000184	0.001590	0.000213	-0.000000	-0.000000	C 21
C 22	Mining	0.091384	0.010459	0.086208	0.000058	0.000205	0.000240	0.001147	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 22
C 23	Utilities	0.021002	0.011511	0.021887	0.146401	0.018552	0.021604	0.014783	0.000091	0.000123	0.000155	0.000107	0.000166	0.000095	0.000101	0.000058	0.000112	0.000086	0.000116	0.000116	-0.000000	-0.000000	C 23
C 24	Selected services	0.003887	0.005245	0.001787	0.001300	0.069002	0.018514	0.014397	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 24
C 25	Trade and transportation	0.075203	0.069031	0.037800	0.012786	0.035508	0.034738	0.035907	0.001225	-0.000000	0.005285	0.000107	0.000126	0.000068	0.000588	0.000202	0.000058	0.001079	0.004340	0.008952	-0.000000	-0.000000	C 25
C 26	Unallocated	0.025031	0.031910	0.048602	0.080306	0.157312	0.133028	0.128749	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 26

(Continued on next page)

Table B-10 continued.

Sector number	Sector title	A 13	A 14	A 15	A 16	A 17	A 18	A 19	A 20	A 21	A 22	A 23	A 24	A 25	A 26	Sector number
		Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petro-leum	Fab. metals & mach.	Air-craft	Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located	
C 1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 1
C 2	Poultry and eggs	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 2
C 3	Farm dairy products	0.003684	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 3
C 4	Food and feed grains	-0.000000	-0.000000	0.000139	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 4
C 5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 5
C 6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 6
C 7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	0.003231	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 7
C 8	Citrus	-0.000000	0.001923	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 8
C 9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 9
C 10	Miscellaneous agriculture	-0.000000	-0.000000	0.000119	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 10
C 11	Grain mill products	0.000152	0.001442	0.023230	-0.002567	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 11
C 12	Meat and poultry processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 12
C 13	Dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 13
C 14	Canning, preserving, freezing	0.000000	0.110550	0.010802	0.003928	-0.000000	-0.000000	-0.000000	-0.000000	0.000000	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 14
C 15	Miscellaneous agri. processing	0.001062	0.007690	0.014152	0.014248	-0.000000	-0.000000	-0.000000	-0.000000	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 15
C 16	Chemicals and fertilizers	0.001669	0.008652	0.008582	0.247222	0.004148	0.000606	0.000223	0.001375	0.001781	0.000165	0.000277	0.000205	0.000493	0.000101	C 16
C 17	Petroleum	0.000152	0.000240	0.000178	0.000642	0.002262	0.000101	0.000071	0.000128	0.000128	0.000165	0.000165	0.000165	0.000165	0.000165	C 17
C 18	Fabricated metals and machinery	0.000368	0.000240	0.000277	0.000770	0.001508	0.061143	0.036424	0.008369	0.003720	0.003320	0.003320	0.003320	0.003320	0.003320	C 18
C 19	Aircraft and parts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 19
C 20	Primary metals	-0.000000	0.000240	0.000139	0.000513	-0.000000	0.005225	0.002688	0.027491	0.000415	0.000415	0.000415	0.000415	0.000415	0.000415	C 20
C 21	Other manufacturing	0.002167	0.002403	0.000951	0.001033	0.000377	0.002496	0.002008	0.001040	0.019256	0.001631	0.000491	0.001706	0.000544	0.003255	C 21
C 22	Mining	-0.000000	-0.000000	-0.000000	0.000103	-0.000000	-0.000000	-0.000000	0.002050	0.000398	0.000398	0.000398	0.000398	0.000398	0.000398	C 22
C 23	Utilities	0.000130	0.000240	0.000099	0.000334	0.000377	0.000152	0.000142	0.000408	0.000256	0.000256	0.000256	0.000256	0.000256	0.000256	C 23
C 24	Selected services	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 24
C 25	Trade and transportation	0.007824	0.007690	0.007334	0.006341	0.006033	0.005235	0.002495	0.005425	0.006530	0.006530	0.006530	0.006530	0.006530	0.006530	C 25
C 26	Unallocated	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	C 26

Each entry shows dollars of direct purchases from the California or Arizona sector listed at the left by the California or Arizona sector listed at the top per dollar of output of the latter sector.

TABLE B-11

Direct and Indirect Requirements Per Dollar of Final Demand, California-Arizona Economy, 1958

Sector number	Sector title	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Sector number
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry prod.	Dairy prod.	Canning, preserving, freezing	Misc. agri. prod.	Chem. and fert.	Petro-leum	Metals & mach.	Air-craft	
C 1	Meat animals and products	1.000155	0.000422	0.000173	0.000210	0.000129	0.000124	0.000144	0.000084	0.000107	0.000067	0.001039	0.382038	0.000484	0.002860	0.004110	0.001321	0.000278	0.000115	0.000040	C 1
C 2	Poultry and eggs	0.300035	1.215768	0.000039	0.000039	0.000024	0.000024	0.000028	0.000017	0.000020	0.000012	0.000276	0.044567	0.000272	0.000579	0.002548	0.000289	0.000051	0.000020	0.000007	C 2
C 3	Farm dairy products	0.000137	0.000566	1.927157	0.000035	0.000020	0.000026	0.000036	0.000021	0.000018	0.000013	0.001680	0.001359	0.464407	0.001041	0.002247	0.000502	0.000036	0.000016	0.000006	C 3
C 4	Food and feed grains	0.077002	0.169896	0.067570	1.028895	0.000257	0.000148	0.000117	0.000082	0.000103	0.000178	0.208221	0.038524	0.031448	0.001918	0.011124	0.000074	0.000049	0.000025	0.000008	C 4
C 5	Cotton	0.000002	0.000005	0.000202	0.000001	1.002330	0.000005	0.000006	0.000004	0.000002	0.000002	0.000007	0.000003	0.000008	0.000012	0.000005	0.000008	0.000007	0.000007	0.000004	C 5
C 6	Vegetables	0.000004	0.000011	0.000004	0.000005	0.000003	1.003267	0.000005	0.000003	0.000003	0.000002	0.000027	0.000004	0.000035	0.107832	0.000429	0.000004	0.000005	0.000003	0.000001	C 6
C 7	Fruit (excluding citrus) & nuts	0.000128	0.000510	0.000143	0.000065	0.000037	0.000053	1.000076	0.000046	0.000034	0.000021	0.001503	0.000090	0.201988	0.169311	0.027197	0.001208	0.000049	0.000022	0.000007	C 7
C 8	Citrus	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002	0.000000	0.000000	0.000003	0.000004	0.000000	0.000000	0.000000	0.000000	C 8
C 9	Forage	0.208620	0.004197	0.244022	0.000843	0.002303	0.001070	0.000571	0.000471	1.000747	0.017977	0.012467	0.080212	0.110491	0.002261	0.000625	0.000077	0.000012	0.000011	0.000011	C 9
C 10	Miscellaneous agriculture	0.016646	0.008424	0.021194	0.045672	0.131404	0.060000	0.036882	0.025869	0.041666	1.039556	0.011715	0.006937	0.012024	0.050698	0.030840	0.001136	0.000476	0.000201	0.000048	C 10
C 11	Grain mill products	0.075693	0.333070	0.085459	0.000249	0.000262	0.000226	0.000258	0.000163	0.000150	0.001239	1.013354	0.046730	0.041728	0.006475	0.036221	0.000191	0.000047	0.000021	0.000011	C 11
C 12	Meat and poultry processing	0.000422	0.001146	0.000471	0.000570	0.000349	0.000335	0.000390	0.000228	0.000290	0.000182	0.002824	1.039511	0.001314	0.007777	0.011182	0.003592	0.000194	0.000310	0.000109	C 12
C 13	Dairy products	0.000321	0.001325	0.000363	0.000081	0.000046	0.000061	0.000084	0.000050	0.000042	0.000029	0.003935	0.003183	1.087933	0.007123	0.005264	0.001177	0.000084	0.000038	0.000013	C 13
C 14	Canning, preserving, freezing	0.000337	0.000104	0.000042	0.000047	0.000024	0.000047	0.000047	0.000028	0.000024	0.000015	0.002253	0.000035	0.000031	1.016137	0.004046	0.000625	0.000051	0.000025	0.000009	C 14
C 15	Miscellaneous agri. processing	0.004858	0.019778	0.005418	0.000215	0.001142	0.001659	0.002384	0.001428	0.001056	0.004644	0.058815	0.003339	0.077948	0.052953	1.080157	0.038305	0.002194	0.000448	0.000198	C 15
C 16	Chemicals and fertilizers	0.016982	0.028328	0.016937	0.061187	0.034589	0.051796	0.075381	0.045217	0.032130	0.017433	0.048440	0.013005	0.039858	0.046899	0.031926	1.253677	0.048355	0.017051	0.005843	C 16
C 17	Petroleum	0.021045	0.042491	0.022128	0.091865	0.025190	0.039438	0.036644	0.047917	0.020300	0.037665	0.027596	0.017330	0.029434	0.031885	0.012983	0.007786	1.836731	0.013833	0.005805	C 17
C 18	Fabricated metals and machinery	0.038283	0.045380	0.038129	0.106787	0.026744	0.043406	0.063357	0.033195	0.059948	0.024563	0.037665	0.027449	0.032967	0.153779	0.034695	0.034033	0.047927	1.212747	0.003310	C 18
C 19	Aircraft and parts	0.003177	0.004249	0.003097	0.006084	0.002799	0.003312	0.002295	0.003312	0.002064	0.004113	0.008785	0.008599	0.005499	0.004838	0.005341	0.005416	0.001132	1.254136	0.000211	C 19
C 20	Primary metals	0.005620	0.007677	0.005611	0.015030	0.004197	0.006900	0.069833	0.005254	0.008408	0.003676	0.006559	0.004484	0.006173	0.023060	0.011767	0.008706	0.195017	0.042207	0.000211	C 20
C 21	Other manufacturing	0.015882	0.034795	0.017007	0.025262	0.012654	0.037342	0.045302	0.027410	0.013516	0.012774	0.056198	0.019938	0.063260	0.090924	0.036867	0.028669	0.056867	0.005218	0.000211	C 21
C 22	Mining	0.001530	0.002987	0.001599	0.003995	0.001619	0.002383	0.003252	0.001803	0.002150	0.001114	0.004861	0.001881	0.003593	0.005612	0.002772	0.014198	0.027130	0.017486	0.005126	C 22
C 23	Utilities	0.012390	0.019216	0.014461	0.015371	0.011764	0.013225	0.018050	0.010657	0.008976	0.013382	0.012495	0.015443	0.021567	0.021473	0.018002	0.026926	0.033365	0.019359	0.010510	C 23
C 24	Selected services	0.011660	0.015150	0.010209	0.026474	0.008251	0.012213	0.016657	0.009109	0.011410	0.007485	0.013096	0.042127	0.020216	0.019853	0.014264	0.017154	0.012278	0.007421	0.003250	C 24
C 25	Trade and transportation	0.064616	0.123100	0.091587	0.070553	0.039662	0.047986	0.027833	0.037234	0.047986	0.037234	0.064638	0.094550	0.167118	0.137323	0.249134	0.150113	0.109843	0.085668	0.032900	C 25
C 26	Unallocated	0.066688	0.087809	0.074008	0.147547	0.094386	0.068257	0.064587	0.036651	0.073618	0.047055	0.083549	0.112776	0.121269	0.111830	0.126619	0.138732	0.224028	0.084452	0.027728	C 26
A 1	Meat animals and products	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000104	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	A 1
A 2	Poultry and eggs	0.000000	0.000054	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 2
A 3	Farm dairy products	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 3
A 4	Food and feed grains	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 4
A 5	Cotton	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 5
A 6	Vegetables	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 6
A 7	Fruit (excluding citrus) & nuts	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 7
A 8	Citrus	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 8
A 9	Forage	0.002898	0.006083	0.003396	0.000017	0.000046	0.000021	0.000011	0.000009	0.000015	0.000254	0.003179	0.001132	0.011654	0.000038	0.000037	0.000010	0.000001	0.000001	0.000000	A 9
A 10	Miscellaneous agriculture	0.000088	0.000069	0.000098	0.000078	0.000090	0.000046	0.000062	0.000044	0.000062	0.000084	0.003087	0.000038	0.000055	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 10
A 11	Grain mill products	0.000001	0.000022	0.000004	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 11
A 12	Meat and poultry processing	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 12
A 13	Dairy products	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 13
A 14	Canning, preserving, freezing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 14
A 15	Miscellaneous agri. processing	0.000002	0.000003	0.000002	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 15
A 16	Chemicals and fertilizers	0.000068	0.000089	0.000069	0.000016	0.000004	0.000001	0.000001	0.000001	0.000001	0.000001	0.000108	0.000032	0.000003	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	A 16
A 17	Petroleum	0.000005	0.000005	0.000005	0.000001	0.000000	0.000000	0.000000	0.0000												

Table B-11 continued.

Sector number	Sector title	C 20	C 21	C 22	C 23	C 24	C 25	C 26	A 1	A 2	A 3	A 4	A 5	A 6	A 7	A 8	A 9	A 10	A 11	A 12	Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry prod.	
C 1	Meat animals and products	0.000103	0.000328	0.000117	0.000124	0.000254	0.000259	0.001152	0.000015	0.000305	0.000850	0.000049	0.000026	0.000016	0.000030	0.000022	0.000015	0.000013	0.000162	0.094328	C 1
C 2	Poultry and eggs	0.000019	0.000056	0.000021	0.000021	0.000044	0.000044	0.000196	0.000003	0.000153	0.000011	0.000010	0.000007	0.000003	0.000006	0.000004	0.000003	0.000004	0.000043	0.000177	C 2
C 3	Farm dairy products	0.000018	0.000047	0.000016	0.000008	0.000032	0.000032	0.000051	0.000007	0.000354	0.000264	0.000013	0.000007	0.000004	0.000008	0.000004	0.000004	0.000003	0.000061	0.000028	C 3
C 4	Food and feed grains	0.000027	0.000078	0.000028	0.000016	0.000038	0.000040	0.000135	0.000256	0.094913	0.015697	0.002237	0.000121	0.000032	0.000060	0.000086	0.000032	0.000091	0.025207	0.000694	C 4
C 5	Cotton	0.000005	0.000167	0.000007	0.000005	0.000009	0.000003	0.000007	0.000000	0.000003	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000000	C 5
C 6	Vegetables	0.000003	0.000008	0.000002	0.000001	0.000005	0.000013	0.000008	0.000026	0.000057	0.000040	0.000060	0.000040	0.000020	0.000030	0.000023	0.000024	0.000024	0.000072	0.000051	C 6
C 7	Fruit (excluding citrus) & nuts	0.000028	0.000072	0.000025	0.000007	0.000024	0.000031	0.000040	0.000054	0.000052	0.000124	0.000135	0.000082	0.000045	0.000089	0.000064	0.000045	0.000045	0.000045	0.000055	C 7
C 8	Citrus	0.000000	0.000001	0.000000	0.000000	0.000000	0.000001	0.000001	0.000002	0.000005	0.000004	0.000005	0.000004	0.000002	0.000004	0.000003	0.000002	0.000002	0.000007	0.000007	C 8
C 9	Forage	0.000030	0.000107	0.000033	0.000029	0.000064	0.000074	0.000256	0.000041	0.002500	0.000305	0.000025	0.000024	0.000028	0.000012	0.000018	0.000008	0.000007	0.000179	0.011381	C 9
C 10	Miscellaneous agriculture	0.000205	0.001475	0.000235	0.000059	0.000165	0.000070	0.000164	0.000223	0.005045	0.000936	0.000530	0.000919	0.000153	0.000142	0.000639	0.000189	0.000212	0.001708	0.000003	C 10
C 11	Grain mill products	0.000076	0.000077	0.000028	0.000028	0.000075	0.000078	0.000206	0.000200	0.000717	0.000891	0.000079	0.000036	0.000026	0.000045	0.000033	0.000021	0.000016	0.000214	0.000004	C 11
C 12	Meat and poultry processing	0.000278	0.000848	0.000316	0.000335	0.000689	0.000704	0.003132	0.000016	0.000814	0.000864	0.000029	0.000014	0.000009	0.000016	0.000012	0.000008	0.000006	0.000110	0.000000	C 12
C 13	Dairy products	0.000043	0.000109	0.000038	0.000018	0.000074	0.000183	0.000120	0.000248	0.000539	0.000374	0.000563	0.000375	0.000189	0.000395	0.000281	0.000219	0.000222	0.000680	0.000477	C 13
C 14	Canning, preserving, freezing	0.000027	0.000078	0.000024	0.000022	0.000049	0.000125	0.000078	0.000242	0.016603	0.002287	0.001469	0.000770	0.000472	0.000829	0.000623	0.000397	0.000274	0.011823	0.000000	C 14
C 15	Miscellaneous agri. processing	0.000861	0.002121	0.000747	0.000188	0.000577	0.000385	0.001063	0.002042	0.027386	0.007876	0.021211	0.009430	0.006761	0.011422	0.008676	0.005240	0.003141	0.021445	0.002819	C 15
C 16	Chemicals and fertilizers	0.018990	0.052689	0.020929	0.002902	0.011366	0.003577	0.008249	0.000208	0.019891	0.002854	0.004466	0.001359	0.000919	0.003563	0.002119	0.001605	0.000908	0.004300	0.000000	C 16
C 17	Petroleum	0.022333	0.016515	0.003958	0.017111	0.016461	0.003860	0.010545	0.000208	0.024949	0.006146	0.012147	0.003338	0.002329	0.005256	0.004219	0.004678	0.000469	0.000278	0.004914	C 17
C 18	Fabricated metals and machinery	0.065675	0.004455	0.057136	0.012876	0.066220	0.012426	0.017771	0.002419	0.001869	0.000359	0.000226	0.000083	0.000066	0.000123	0.000092	0.000071	0.000090	0.000450	0.000004	C 18
C 19	Aircraft and parts	0.003276	0.006405	0.002634	0.002371	0.0181458	0.008821	0.017959	0.000666	0.004057	0.001800	0.001986	0.000611	0.000467	0.000933	0.000736	0.000734	0.000968	0.001510	0.000000	C 19
C 20	Primary metals	1.199905	0.027420	0.031394	0.003499	0.014914	0.003641	0.005475	0.000392	0.019479	0.002132	0.002503	0.001223	0.000287	0.000302	0.000204	0.000849	0.001695	0.005750	0.000214	C 20
C 21	Other manufacturing	0.035339	1.252725	0.056196	0.034893	0.064485	0.023462	0.056075	0.000891	0.001763	0.000306	0.000514	0.000193	0.000171	0.000222	0.000164	0.000184	0.000184	0.000540	0.000000	C 21
C 22	Mining	0.121055	0.017951	0.099029	0.001248	0.003164	0.001580	0.002912	0.000095	0.001763	0.000000	0.000106	0.000673	0.000411	0.000548	0.000527	0.000341	0.000440	0.001832	0.001817	C 22
C 23	Utilities	0.038412	0.023574	0.034134	1.175198	0.021934	0.030924	0.023280	0.000384	0.000872	0.001168	0.000106	0.000673	0.000411	0.000548	0.000198	0.000129	0.000150	0.001170	0.001018	C 23
C 24	Selected services	0.009260	0.011217	0.005642	0.004291	1.079777	0.023935	0.019761	0.000162	0.006315	0.000125	0.000478	0.000196	0.000149	0.000268	0.000198	0.000129	0.000150	0.013685	0.014583	C 24
C 25	Trade and transportation	0.110925	0.105094	0.006345	0.024791	0.062510	1.048648	0.052050	0.002598	0.051924	0.010934	0.004960	0.002352	0.001724	0.003462	0.002394	0.001515	0.002530	0.013685	0.006870	C 25
C 26	Unallocated	0.071855	0.076412	0.086417	0.117057	0.217709	0.172978	1.167008	0.001297	0.040384	0.005972	0.004281	0.001707	0.001267	0.002430	0.001779	0.001218	0.001330	0.009144	0.000000	C 26

(Continued on next page.)

Table B-11 continued.

Sector number	Sector title	A 13	A 14	A 15	A 16	A 17	A 18	A 19	A 20	A 21	A 22	A 23	A 24	A 25	A 26	Sector number
		Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petro-leum	Metals & mach.	Air-craft	Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located	
C 1	Meat animals and products	0.000051	0.000065	0.000032	0.000363	0.000022	0.000027	0.000027	0.000029	0.000042	0.000034	0.000027	0.000035	0.000035	0.000156	C 1
C 2	Poultry and eggs	0.000012	0.000115	0.000108	0.000081	0.000004	0.000004	0.000004	0.000004	0.000004	0.000004	0.000004	0.000005	0.000005	0.000022	C 2
C 3	Farm dairy products	0.004342	0.000393	0.000144	0.000084	0.000005	0.000005	0.000005	0.000006	0.000007	0.000008	0.000007	0.000007	0.000007	0.000029	C 3
C 4	Food and feed grains	0.008154	0.000964	0.007965	0.001304	0.000026	0.000017	0.000017	0.000024	0.000039	0.000039	0.000028	0.000026	0.000026	0.000119	C 4
C 5	Cotton	0.000001	0.000002	0.000001	0.000001	0.000000	0.000001	0.000001	0.000001	0.000001	0.000001	0.000000	0.000001	0.000000	0.000001	C 5
C 6	Vegetables	0.000063	0.012066	0.001268	0.000530	0.000038	0.000044	0.000056	0.000064	0.000064	0.000063	0.000081	0.000093	0.000199	0.000507	C 6
C 7	Fruit (excluding citrus) & nuts	0.000177	0.019225	0.005773	0.001365	0.000073	0.000077	0.000096	0.000084	0.000114	0.000120	0.000136	0.000159	0.000183	0.000890	C 7
C 8	Citrus	0.000006	0.003029	0.000116	0.000049	0.000033	0.000004	0.000004	0.000004	0.000004	0.000004	0.000007	0.000009	0.000010	0.000046	C 8
C 9	Forage	0.001160	0.000360	0.000488	0.000167	0.000008	0.000008	0.000008	0.000010	0.000015	0.000013	0.000008	0.000011	0.000011	0.000048	C 9
C 10	Miscellaneous agriculture	0.000650	0.006165	0.001862	0.001124	0.000081	0.000063	0.000060	0.000083	0.000024	0.000124	0.000054	0.000077	0.000070	0.000314	C 10
C 11	Grain mill products	0.009768	0.003054	0.025794	0.004213	0.000080	0.000046	0.000046	0.000071	0.000074	0.000119	0.000053	0.000073	0.000073	0.000320	C 11
C 12	Meat and poultry processing	0.000085	0.001017	0.000391	0.000329	0.000030	0.000041	0.000033	0.000044	0.000045	0.000043	0.000014	0.000027	0.000018	0.000067	C 12
C 13	Dairy products	0.000060	0.000863	0.000280	0.000165	0.000011	0.000010	0.000009	0.000013	0.000013	0.000014	0.000008	0.000012	0.000011	0.000045	C 13
C 14	Canning, preserving, freezing	0.000592	0.113698	0.011948	0.006499	0.000355	0.000410	0.000526	0.000428	0.000600	0.000593	0.000763	0.000879	0.001026	0.004777	C 14
C 15	Miscellaneous agri. processing	0.002806	0.015574	0.019749	0.018537	0.000494	0.000314	0.000316	0.000467	0.000505	0.000745	0.000349	0.000473	0.000460	0.002106	C 15
C 16	Chemicals and fertilizers	0.006524	0.018485	0.016724	0.034830	0.005891	0.002897	0.001966	0.005200	0.004559	0.008556	0.000444	0.001777	0.001449	0.001194	C 16
C 17	Petroleum	0.002408	0.005136	0.002829	0.002481	0.004609	0.001859	0.001379	0.002277	0.001377	0.001457	0.000929	0.001121	0.001281	0.000014	C 17
C 18	Fabricated metals and machinery	0.005224	0.019839	0.006325	0.006495	0.003197	0.005302	0.002925	0.002124	0.008667	0.004770	0.007347	0.018114	0.003238	0.000287	C 18
C 19	Aircraft and parts	0.000283	0.000841	0.000429	0.000371	0.000129	0.000832	0.000613	0.000420	0.000312	0.000168	0.000110	0.000254	0.000386	0.000169	C 19
C 20	Primary metals	0.000970	0.003619	0.001470	0.002133	0.000584	0.021265	0.014775	0.051597	0.002715	0.002902	0.001358	0.002796	0.000633	0.001617	C 20
C 21	Other manufacturing	0.000652	0.015796	0.006654	0.005478	0.001709	0.009278	0.008005	0.006308	0.000337	0.005058	0.002371	0.004881	0.002252	0.000854	C 21
C 22	Mining	0.000323	0.000990	0.000551	0.000864	0.000238	0.002667	0.001866	0.005581	0.001382	0.007505	0.000215	0.000413	0.000310	0.000315	C 22
C 23	Utilities	0.001432	0.003707	0.001934	0.002126	0.001043	0.002417	0.001854	0.003453	0.001605	0.001682	0.002597	0.001194	0.000393	0.001092	C 23
C 24	Selected services	0.000748	0.002385	0.001249	0.001580	0.000307	0.000872	0.000634	0.000849	0.000592	0.000383	0.000172	0.000384	0.000178	0.000320	C 24
C 25	Trade and transportation	0.016908	0.029209	0.019824	0.017864	0.008410	0.015206	0.010592	0.017112	0.012847	0.008425	0.004266	0.010471	0.005386	0.006769	C 25
C 26	Unallocated	0.005712	0.017927	0.009543	0.008609	0.002707	0.008436	0.006151	0.007098	0.004496	0.003374	0.001627	0.003299	0.001481	0.000199	C 26

a/ Each entry shows dollars of direct and indirect requirements of the California or Arizona sector listed at the left per dollar of the final demand for products of California or Arizona sector listed at the top.

Table B-12 continued.

Sector number	Sector title	A 13	A 14	A 15	A 16	A 17	A 18	A 19	A 20	A 21	A 22	A 23	A 24	A 25	A 26	Sector number
		Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petro-leum	Metals & mach.	Air-craft	Primary metals	Other xfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located	
C 1	Meat animals and products	0.000002	0.000025	0.000025	0.000016	0.000001	0.000001	0.000001	0.000001	0.000002	0.000001	0.000001	0.000001	0.000001	0.000007	C 1
C 2	Poultry and eggs	0.000000	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	C 2
C 3	Farm dairy products	0.000116	0.000011	0.000004	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	C 3
C 4	Food and feed grains	0.062336	0.007367	0.060897	0.009972	0.000196	0.000127	0.000131	0.000183	0.000299	0.000296	0.000151	0.000201	0.000200	0.000911	C 4
C 5	Cotton	0.000003	0.000007	0.000003	0.000002	0.000001	0.000004	0.000003	0.000003	0.000013	0.000002	0.000001	0.000002	0.000001	0.000003	C 5
C 6	Vegetables	0.000080	0.015367	0.001615	0.000676	0.000048	0.000055	0.000071	0.000058	0.000081	0.000080	0.000103	0.000119	0.000139	0.000666	C 6
C 7	Fruit (excluding citrus) & nuts	0.000358	0.038871	0.011672	0.002759	0.000148	0.000155	0.000194	0.000170	0.000230	0.000242	0.000275	0.000321	0.000370	0.001719	C 7
C 8	Citrus	0.000009	0.004852	0.001886	0.000078	0.000006	0.000006	0.000008	0.000007	0.000009	0.000009	0.000012	0.000014	0.000016	0.000074	C 8
C 9	Forage	0.017266	0.005356	0.007259	0.002481	0.000122	0.000125	0.000123	0.000145	0.000223	0.000186	0.000123	0.000164	0.000161	0.000719	C 9
C 10	Miscellaneous agriculture	0.000954	0.009060	0.002730	0.001619	0.000119	0.000092	0.000088	0.000122	0.000331	0.000184	0.000079	0.000113	0.000103	0.000460	C 10
C 11	Grain mill products	0.000024	0.000007	0.000063	0.000010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	C 11
C 12	Meat and poultry processing	0.000001	0.000013	0.000005	0.000004	0.000000	0.000001	0.000000	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000001	C 12
C 13	Dairy products	0.000001	0.000017	0.000006	0.000003	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	C 13
C 14	Canning, preserving, freezing	0.000006	0.001162	0.000122	0.000051	0.000004	0.000004	0.000005	0.000004	0.000006	0.000006	0.000008	0.000009	0.000010	0.000049	C 14
C 15	Miscellaneous agri. processing	0.000039	0.000218	0.000276	0.000259	0.000007	0.000004	0.000004	0.000007	0.000007	0.000010	0.000005	0.000007	0.000006	0.000029	C 15
C 16	Chemicals and fertilizers	0.000145	0.000410	0.000371	0.000773	0.000131	0.000044	0.000044	0.000115	0.000101	0.000190	0.000010	0.000039	0.000010	0.000326	C 16
C 17	Petroleum	0.000042	0.000089	0.000049	0.000043	0.000080	0.000032	0.000024	0.000039	0.000024	0.000025	0.000016	0.000019	0.000022	0.000014	C 17
C 18	Fabricated metals and machinery	0.000017	0.000065	0.000021	0.000016	0.000010	0.000027	0.000026	0.000070	0.000028	0.000016	0.000024	0.000059	0.000011	0.000027	C 18
C 19	Aircraft and parts	0.000000	0.000001	0.000001	0.000001	0.000000	0.000001	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	C 19
C 20	Primary metals	0.000005	0.000018	0.000007	0.000011	0.000003	0.0000105	0.000073	0.000255	0.000013	0.000014	0.000007	0.000014	0.000003	0.000008	C 20
C 21	Other manufacturing	0.000138	0.000359	0.000151	0.000124	0.000039	0.000211	0.000182	0.000143	0.000063	0.000115	0.000054	0.000111	0.000051	0.000156	C 21
C 22	Mining	0.000019	0.000057	0.000032	0.000050	0.000014	0.000155	0.000108	0.000557	0.000080	0.000046	0.000012	0.000024	0.000008	0.000018	C 22
C 23	Utilities	0.000080	0.000208	0.000107	0.000119	0.000059	0.000136	0.000104	0.000194	0.000090	0.000095	0.000146	0.000067	0.000054	0.000056	C 23
C 24	Selected services	0.000003	0.000010	0.000005	0.000005	0.000001	0.000004	0.000003	0.000004	0.000003	0.000002	0.000001	0.000002	0.000001	0.000001	C 24
C 25	Trade and transportation	0.000073	0.000126	0.000085	0.000077	0.000036	0.000066	0.000046	0.000074	0.000055	0.000036	0.000018	0.000045	0.000023	0.000029	C 25
C 26	Unallocated	0.000025	0.000075	0.000041	0.000037	0.000012	0.000036	0.000027	0.000031	0.000019	0.000015	0.000007	0.000014	0.000006	0.000011	C 26
A 1	Meat animals and products	0.000029	0.000338	0.000670	0.000382	0.000016	0.000017	0.000021	0.000018	0.000036	0.000027	0.000031	0.000036	0.000041	0.000192	A 1
A 2	Poultry and eggs	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 2
A 3	Farm dairy products	0.042431	0.000239	0.000237	0.000130	0.000007	0.000008	0.000010	0.000008	0.000010	0.000012	0.000015	0.000017	0.000020	0.000093	A 3
A 4	Food and feed grains	1.583608	0.058926	0.688874	0.094755	0.001570	0.001058	0.001189	0.001465	0.005043	0.002443	0.001504	0.001904	0.001999	0.009231	A 4
A 5	Cotton	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	A 5
A 6	Vegetables	0.000002	0.036135	0.000035	0.000015	0.000001	0.000001	0.000002	0.000001	0.000002	0.000002	0.000002	0.000003	0.000003	0.000017	A 6
A 7	Fruit (excluding citrus) & nuts	0.000019	0.000087	0.007170	0.000163	0.000003	0.000002	0.000002	0.000003	0.000003	0.000004	0.000003	0.000003	0.000004	0.000043	A 7
A 8	Citrus	0.000005	0.147909	0.000107	0.000044	0.000003	0.000004	0.000005	0.000004	0.000005	0.000005	0.000007	0.000008	0.000009	0.000043	A 8
A 9	Forage	1.375071	0.017623	0.038221	0.013456	0.000651	0.000991	0.001141	0.000918	0.016675	0.001241	0.001221	0.001557	0.001588	0.007191	A 9
A 10	Miscellaneous agriculture	0.012175	0.066940	0.035592	0.004049	0.000230	0.000819	0.000805	0.000589	0.031138	0.000707	0.000321	0.000646	0.000338	0.001114	A 10
A 11	Grain mill products	0.000242	0.000050	0.000053	0.000091	0.000001	0.000001	0.000001	0.000001	0.000001	0.000002	0.000001	0.000001	0.000001	0.000005	A 11
A 12	Meat and poultry processing	0.000001	0.000017	0.000034	0.000019	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000002	0.000008	A 12
A 13	Dairy products	0.000001	0.000020	0.000020	0.000011	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000004	A 13
A 14	Canning, preserving, freezing	0.000000	0.014031	0.000010	0.000004	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000001	0.000003	0.000016	A 14
A 15	Miscellaneous agri. processing	0.000018	0.000080	0.006594	0.000150	0.000003	0.000002	0.000002	0.000002	0.000003	0.000004	0.000004	0.000004	0.000004	0.000010	A 15
A 16	Chemicals and fertilizers	0.000101	0.000240	0.000265	0.010476	0.000109	0.000023	0.000014	0.000074	0.000059	0.000155	0.000003	0.000003	0.000002	0.000003	A 16
A 17	Petroleum	0.000003	0.000003	0.000002	0.000005	0.000003	0.000003	0.000003	0.000002	0.000002	0.000009	0.000005	0.000005	0.000005	0.000009	A 17
A 18	Fabricated metals and machinery	0.000004	0.000002	0.000002	0.000003	0.000003	0.001053	0.000076	0.000022	0.000002	0.000002	0.000002	0.000002	0.000002	0.000012	A 18
A 19	Aircraft and parts	0.000002	0.000001	0.000001	0.000001	0.000001	0.000010	0.001722	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000020	A 19
A 20	Primary metals	0.000071	0.000208	0.000196	0.000612	0.000048	0.000682	0.003932	0.009707	0.000615	0.001173	0.000222	0.000044	0.000033	0.000104	A 20
A 21	Other manufacturing	0.000080	0.000073	0.000043	0.000041	0.000020	0.000086	0.000084	0.000059	0.003341	0.000048	0.000032	0.000047	0.000024	0.000065	A 21
A 22	Mining	0.000041	0.000053	0.000042	0.000331	0.000246	0.000590	0.000387	0.000884	0.001113	0.061340	0.000049	0.000241	0.000313	0.000257	A 22
A 23	Utilities	0.002056	0.001336	0.001314	0.002734	0.001949	0.001740	0.001783	0.004713	0.002458	0.004168	0.102326	0.004411	0.000086	0.000063	A 23
A 24	Selected services	0.000062	0.000032	0.000028	0.000037	0.000014	0.000024	0.000013	0.000024	0.000039	0.000018	0.000020	0.000243	0.000133	0.000183	A 24
A 25	Trade and transportation	0.000541	0.000380	0.000386	0.000335	0.000290	0.000305	0.000199	0.000409	0.000369	0.000243	0.000133	0.000341	0.000342	0.000183	A 25
A 26	Unallocated	0.000487	0.000339	0.000444	0.000371	0.000295	0.000386	0.000518	0.000375	0.000442	0.000519	0.000776	0.000688	0.000783	0.004911	A 26
TOTAL																

APPENDIX CRelationship Between California, Arizona and OBE Sectors

<u>Sector No.</u>	<u>California or Arizona Sector</u>	<u>OBE Equivalent</u>
1.	Meat Animals and Products	} 1
2.	Poultry and Eggs	
3.	Farm Dairy Products	
4.	Food and Feed Grains	} 2
5.	Cotton	
6.	Vegetables	} 2
7.	Fruit and Nuts	
8.	Citrus	
9.	Forage	} 2 part, 3, 4
10.	Miscellaneous Agriculture	
11.	Grain Mill Products	} 14
12.	Meat and Poultry Processing	
13.	Dairy Products	
14.	Canning, Preserving and Freezing	
15.	Miscellaneous Agricultural Processing	15, 88, 89 and 90 (part)
16.	Chemicals and Fertilizers	27 through 30 and 90 (part)
17.	Petroleum	8 and 31
18.	Fabricated Metal and Machinery	19 through 59 and 61
19.	Aircraft and Parts	60
20.	Primary Metals	37 and 38

<u>Sector No.</u>	<u>California or Arizona Sector</u>	<u>OBE Equivalent</u>
21.	Other Manufacturing	16 through 26, 32 through 36 and 62-64
22.	Mining	5, 6, 7, 9 and 10
23.	Utilities	66, 68 and 83A
24.	Selected Services	72, 74, 75 and 76
25.	Trade and Transportation	65 and 69
26.	Unallocated Services	13, 67, 70, 71, 73, 77 through 79, 81, 82
27.	Scrap and By-products	This is a dummy sector
28.	Net Exports and Imports	N.A.
29.	Maintenance Construction	12
30.	New Construction	11
31.	State and Local Government	79
32.	Federal Government	78
33.	Inventory Addition	87
34.	Inventory Depletion	
35.	Gross Private Capital Formation	N.A.
36-37.	All Households	86

APPENDIX D

The North-South California Model

TABLE D-1

Interindustry Flow of Goods and Services by Sector of Origin and Destination, Northern California Economy, 1958¹

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sector number	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Foreign	Misc. agri.	Grain mill prod.	Meat & poultry prod.	Dairy prod.	Canning, preserving, freezing	Misc. agri. prod.	Chem. and fert.	Petro-ium	Metals & mech.	Air-craft		
1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	176277.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1	
2	Poultry and eggs	-0.	32944.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30887.	19.	5.	1480.	-0.	-0.	-0.	-0.	-0.	2	
3	Farm dairy products	-0.	-0.	6171.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	174950.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3	
4	Food and feed grains	24456.	21273.	15728.	6029.	-0.	-0.	-0.	-0.	-0.	329.	72349.	-0.	-0.	3940.	-0.	-0.	-0.	-0.	-0.	4	
5	Cotton	-0.	-0.	-0.	-0.	630.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5	
6	Vegetables	-0.	-0.	-0.	-0.	-0.	1153.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6	
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	134136.	-0.	-0.	-0.	-0.	-0.	-0.	7	
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	204657.	25919.	-0.	-0.	-0.	-0.	-0.	8	
9	Forage	61064.	-0.	56461.	-0.	-0.	-0.	-0.	-0.	-0.	2912.	2999.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	9	
10	Miscellaneous agriculture	1068.	-0.	1517.	5643.	24959.	17768.	9695.	804.	5719.	5410.	-0.	21.	-0.	38945.	23740.	3959.	-0.	-0.	-0.	10	
11	Grain mill products	24783.	57467.	22115.	-0.	-0.	-0.	-0.	-0.	-0.	3207.	-0.	196.	-0.	5620.	39107.	1085.	-0.	-0.	-0.	11	
12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	511.	25391.	-0.	9128.	11106.	1418.	-0.	-0.	-0.	-0.	12	
13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	849.	1607.	35333.	-0.	7883.	4528.	-0.	-0.	-0.	-0.	13	
14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	19847.	3816.	212.	-0.	-0.	-0.	-0.	14	
15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	16441.	-0.	33745.	72002.	91383.	20390.	468.	16.	15	
16	Chemicals and fertilizers	463.	524.	186.	6128.	6220.	12593.	20227.	1190.	3519.	1014.	5931.	1517.	4002.	18665.	17722.	110390.	25496.	13022.	55.	16	
17	Petroleum	232.	1742.	94.	6985.	3091.	6879.	12074.	578.	3992.	1586.	608.	1197.	2112.	7151.	-0.	-0.	627771.	6034.	54.	17	
18	Fabricated metals and machinery	3071.	2119.	2158.	10301.	3913.	9268.	15191.	770.	6392.	2162.	1743.	2513.	2234.	114515.	16361.	9268.	21544.	252690.	1882.	18	
19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4.	-0.	-0.	1288.	1243.	19
20	Primary metals	24.	14.	11.	4.	9.	23.	34.	2.	4.	8.	-0.	12.	11.	1283.	657.	4602.	439.	199323.	971.	20	
21	Other manufacturing	749.	909.	587.	919.	708.	6992.	9193.	552.	567.	894.	7636.	1912.	12477.	54916.	19256.	14348.	5738.	45709.	476.	21	
22	Mining	-0.	-0.	-0.	13.	7.	38.	25.	2.	8.	9.	581.	276.	392.	4134.	742.	4331.	17317.	1160.	5.	22	
23	Utilities	1796.	1426.	1660.	939.	1705.	2725.	4424.	258.	665.	1661.	1071.	3315.	3069.	9247.	6228.	8367.	17800.	14443.	217.	23	
24	Selected services	1460.	930.	671.	2023.	1174.	2887.	4542.	238.	1263.	806.	744.	17871.	3788.	6258.	4671.	4685.	3894.	4679.	44.	24	
25	Trade and transportation	11660.	11726.	14803.	6150.	4934.	7515.	9353.	3522.	2987.	11993.	30971.	36608.	105788.	212678.	57213.	64113.	67223.	644.	25		
26	Unallocated	5769.	2965.	4888.	12764.	15982.	12421.	10158.	566.	6738.	422.	5663.	28815.	16258.	48980.	54640.	37548.	114734.	67836.	405.	26	
27	Scrap and by-products	6516.	6321.	2664.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3359.	21104.	11719.	29280.	30186.	385.	4501.	1813.	9.	27	
28a	Imports from S. California	2150.	1930.	1115.	896.	4235.	2616.	1561.	123.	862.	800.	1081.	6833.	3764.	13800.	1293.	1929.	8730.	7114.	20a		
28b	Imports from outside	17317.	33482.	14822.	13381.	9713.	20879.	30050.	1687.	7427.	4279.	13930.	168536.	20813.	148053.	68787.	84908.	57041.	347150.	2354.	28b	
29	Maintenance construction	-0.	2421.	2450.	3389.	3064.	5045.	9883.	538.	2122.	1690.	598.	7.	1799.	4430.	346.	1893.	2124.	44.	29		
30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30	
30	Households and government	17619.	7026.	76778.	76861.	185828.	245795.	246437.	25592.	120345.	133794.	104943.	83942.	60927.	192416.	396410.	225147.	420346.	714883.	25880.	30	
GROSS OUTLAY		183726.	185219.	224879.	152370.	271172.	354597.	382847.	37435.	163645.	165746.	256237.	603004.	433216.	1266132.	1647587.	591588.	1384724.	1768103.	41401.	0.0.	

TABLE D-1 (contd.)

Sector number	Sector title	20	21	22	23	24	25	26	27	28a	28b	29	30	31	32	33	34	35	35-37	GROSS DOMESTIC PRODUCT ²	Sector number	
		Primary metals	Other mfg.	Misc.	Utilities	Selected services	Fruit and nuts	Unal-located	Scrap and by-prod.	Exports to S. Calif.	Imports to outside	Maint. constr.	New constr.	State & local gov.	Federal gov.	Inventory addit'ns	Inventory deplet'ns	Gross pri. emp. form.	All house-holds			
1	Meat animals and products	-0.	19.	-0.	-0.	-0.	-0.	-0.	64.	-0.	-0.	-0.	-0.	-0.	-0.	4299.	-0.	-0.	1063.	183726.	1	
2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	31226.	-0.	-0.	-0.	-0.	-0.	706.	-0.	-0.	18954.	185221.	2	
3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30535.	-0.	-0.	-0.	-0.	-0.	-0.	1737.	-0.	-0.	6505.	224998.	3	
4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3797.	-0.	-0.	-0.	-0.	-0.	4467.	-0.	-0.	-0.	152368.	4	
5	Cotton	-0.	232.	-0.	-0.	-0.	-0.	-0.	23687.	-0.	257243.	-0.	-0.	-0.	-0.	-0.	-10619.	-0.	-0.	271173.	5	
6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1601.	-0.	10704.	-0.	-0.	-0.	1173.	45.	-0.	-0.	354597.	6		
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	75718.	56447.	-0.	-0.	-0.	-0.	-0.	-666.	-0.	15697.	382847.	7	
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	8890.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	16344.	37435.	8	
9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	37481.	-0.	-0.	-0.	-0.	-0.	2726.	-0.	-0.	-0.	163643.	9	
10	Miscellaneous agriculture	-0.	1133.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-844.	-0.	-0.	165748.	10		
11	Grain mill products	-0.	5.	-0.	-0.	-0.	96.	54.	983.	-0.	-0.	-0.	-0.	944.	-0.	670.	-0.	-0.	99696.	256240.	11	
12	Meat and poultry processing	-0.	728.	-0.	-0.	-0.	1104.	14965.	7583.	4601.	-0.	-0.	920.	4017.	-0.	2401.	-0.	-0.	519070.	403005.	12	
13	Dairy products	-0.	44.	-0.	-0.	-0.	38.	372.	-0.	85302.	-0.	-0.	-0.	2510.	-0.	1725.	-0.	-0.	201933.	43216.	13	
14	Canning, preserving, freezing	-0.	48.	-0.	-0.	-0.	27.	497.	-0.	1029812.	-0.	280.	-0.	5294.	-0.	5049.	-0.	-0.	203249.	1268131.	14	
15	Miscellaneous agri. processing	89.	693.	1.	-0.	62.	628.	3918.	4478.	-0.	-0.	-0.	-0.	5542.	-0.	3791.	-0.	-0.	793446.	1647589.	15	
16	Chemicals and fertilizers	4045.	52935.	1982.	217.	5733.	2246.	17634.	6692.	-0.	39504.	21759.	21544.	-0.	28.	-0.	-0.	163604.	591587.	16		
17	Petroleum	2792.	8503.	3146.	7661.	7593.	78358.	18806.	1398.	-0.	160454.	20881.	51049.	25331.	-0.	-0.	-11710.	-0.	326101.	1384718.	17	
18	Fabricated metals and machinery	15327.	37891.	5877.	6238.	43066.	22308.	48771.	14877.	-0.	47284.	285279.	47075.	-0.	-0.	-0.	-0.	419218.	1768106.	18		
19	Aircraft and parts	5.	509.	-0.	-0.	26389.	1409.	7700.	68.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-11.	2515.	284.	41433.	19	
20	Primary metals	77540.	25578.	3303.	832.	215.	2027.	6660.	8168.	-0.	21142.	109468.	-0.	-0.	-0.	-0.	-1211.	-0.	651.	441809.	20	
21	Other manufacturing	5591.	292220.	5271.	18260.	40657.	40237.	164430.	6858.	-0.	39397.	256881.	32343.	-0.	-0.	-241.	31756.	626775.	1740923.	21		
22	Mining	42202.	18209.	15379.	63.	276.	1138.	6054.	-0.	36162.	-0.	-0.	8355.	-0.	-0.	-1283.	-0.	-0.	178392.	1740923.	22	
23	Utilities	11130.	23000.	4482.	183689.	16297.	117695.	89521.	-0.	-0.	-0.	2067.	11626.	46623.	20238.	-0.	-0.	11241.	474955.	1093182.	23	
24	Selected services	1742.	8861.	309.	90095.	85268.	1379.	90095.	-0.	1379.	14515.	37306.	-0.	-0.	10349.	224669.	-0.	-0.	764475.	1365001.	24	
25	Trade and transportation	34448.	119206.	6688.	13865.	47394.	161553.	187912.	9307.	-0.	90662.	393620.	42114.	85165.	-0.	-0.	118114.	2796040.	446654.	5206040.	25	
26	Unallocated	10481.	5037.	7864.	79606.	191955.	512574.	615978.	-0.	-0.	-0.	9882.	144749.	85110.	114428.	-0.	-0.	31804.	2889894.	5206040.	26	
27	Scrap and by-products	12412.	2759.	236.	7109.	2722.	3374.	-0.	-0.	-0.	-0.	577.	3150.	-0.	-0.	-0.	-0.	-9141.	219.	141274.	27	
28a	Imports from S. California	3907.	5093.	132.	2187.	154687.	12952.	47781.	465.	-0.	-0.	1348.	3890.	659.	7565.	-0.	-182.	12718.	50920.	370775.	28a	
28b	Imports from outside	66162.	315937.	13110.	48744.	105834.	177182.	307886.	24506.	-0.	-0.	97969.	510743.	90027.	25197.	6186.	-11248.	247498.	1591308.	4482110.	28b	
29	Maintenance construction	2073.	2887.	195.	260068.	10293.	79107.	276022.	-0.	44791.	-0.	61.	388.	241180.	50347.	-0.	-0.	2126.	1627802.	1627802.	29	
30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	320436.	-0.	-0.	-0.	467150.	142544.	-0.	-0.	2635751.	-0.	2945861.	17490304.	30
30	Households and government	171862.	774067.	110416.	463264.	602207.</																

TABLE D-2
Technical Coefficients, Northern California Economy, 1958^{a/}

Table with 20 columns representing different economic sectors and 26 rows of data. Columns include: Meat animals, Poultry and eggs, Farm dairy prod., Grains, Cotton, Veg., Fruit and nuts, Citrus, Forage, Misc. agri., Grain mill prod., Meat & poultry proc., Dairy prod., Canning, preserving, freezing, Misc. agri. proc., Chem. and fert., Petro- leum, Pub. metals & mach., Air- craft. Rows list various products like 'Meat animals and products', 'Poultry and eggs', 'Food and feed grains', etc.

TABLE D-2 (contd.)

Table with 8 columns representing different economic sectors and 26 rows of data. Columns include: Primary metals, Other mfg., Mining, Utilities, Selected services, Trade and trans., Unal- located. Rows list various products like 'Meat animals and products', 'Poultry and eggs', 'Food and feed grains', etc.

^{a/} Each entry shows dollars of direct purchases from the N. California sector listed at the left by the N. California sector listed at the top per dollar of output of the latter sector.

TABLE D-3
Interdependency Coefficients, Southern California Economy, 1958

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sector number
1	Meat animals and products	1.0000237	0.000442	0.0000175	0.0001170	0.0001103	0.0000099	0.0000116	0.0000068	0.0000055	0.0000054	0.0000081	0.305353	0.000494	0.002386	0.003740	0.001181	0.000224	0.000089	0.000025	1
2	Poultry and eggs	0.0000069	0.000442	0.0000051	0.0000040	0.0000029	0.0000024	0.0000029	0.0000017	0.0000020	0.0000013	0.0000020	0.0000018	0.0000018	0.0000021	0.0000017	0.0000013	0.0000022	0.0000020	0.000006	2
3	Poultry and products	0.0000254	0.000673	0.0000051	0.0000034	0.0000044	0.0000028	0.0000034	0.0000021	0.0000017	0.0000012	0.0000025	0.0000018	0.0000018	0.0000021	0.0000017	0.0000013	0.0000022	0.0000020	0.000006	3
4	Food and feed grains	0.179079	0.256441	0.103200	1.041404	0.000330	0.0000008	0.0000015	0.0000003	0.0000005	0.0000004	0.0000006	0.0000004	0.0000004	0.0000005	0.0000004	0.0000003	0.0000004	0.0000002	0.0000001	4
5	Cotton	0.0000003	0.0000004	0.0000002	0.0000003	0.0000003	0.0000002	0.0000002	0.0000003	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	5
6	Vegetables	0.0000007	0.0000015	0.0000005	0.0000005	0.0000004	0.0000005	0.0000004	0.0000003	0.0000003	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	6
7	Fruit (excluding citrus) & nuts	0.0000284	0.0000731	0.0000210	0.0000072	0.0000040	0.0000056	0.0000008	0.0000002	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	0.0000001	7
8	Citrus	0.0000001	0.0000001	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	8
9	Miscellaneous agriculture	0.025430	0.11019	0.020932	0.040363	0.011419	0.002059	0.0000021	0.0000042	0.0000023	0.0000014	0.0000003	0.0000003	0.0000003	0.0000003	0.0000003	0.0000003	0.0000003	0.0000003	0.0000003	9
10	Miscellaneous agr. processing	0.137181	0.10782	0.102092	0.000288	0.000282	0.000253	0.0000397	0.000184	0.000189	0.000184	0.000184	0.000189	0.000184	0.000184	0.000184	0.000184	0.000184	0.000184	0.000184	10
11	Meat and poultry processing	0.000681	0.001510	0.000558	0.000582	0.000551	0.000559	0.000081	0.000021	0.000021	0.000021	0.000021	0.000021	0.000021	0.000021	0.000021	0.000021	0.000021	0.000021	0.000021	11
12	Dairy products	0.000096	0.000447	0.000047	0.000079	0.000044	0.000059	0.000044	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	12
13	Canning, preserving, freezing	0.010887	0.028450	0.008061	0.002332	0.001302	0.0000032	0.000273	0.000167	0.000167	0.000167	0.000167	0.000167	0.000167	0.000167	0.000167	0.000167	0.000167	0.000167	0.000167	13
14	Miscellaneous agr. processing	0.028197	0.032316	0.018526	0.025238	0.013508	0.004758	0.001118	0.000440	0.000440	0.000440	0.000440	0.000440	0.000440	0.000440	0.000440	0.000440	0.000440	0.000440	0.000440	14
15	Chemicals and fertilizers	0.038367	0.045761	0.026291	0.036237	0.021716	0.009517	0.0052097	0.002743	0.002743	0.002743	0.002743	0.002743	0.002743	0.002743	0.002743	0.002743	0.002743	0.002743	0.002743	15
16	Petrochemicals and machinery	0.005610	0.005582	0.000392	0.000686	0.000308	0.000368	0.000466	0.000469	0.000469	0.000469	0.000469	0.000469	0.000469	0.000469	0.000469	0.000469	0.000469	0.000469	0.000469	16
17	Other manufacturing	0.005187	0.007558	0.003217	0.005677	0.003657	0.00670	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	0.000645	17
18	Primary metals	0.021827	0.032117	0.015491	0.019728	0.013433	0.00295	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	0.003677	18
19	Other manufacturing	0.002481	0.002410	0.001708	0.003705	0.001275	0.00256	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	0.001574	19
20	Mining	0.002342	0.024108	0.018109	0.01792	0.01161	0.01486	0.002958	0.012104	0.012104	0.012104	0.012104	0.012104	0.012104	0.012104	0.012104	0.012104	0.012104	0.012104	0.012104	20
21	Utilities	0.01879	0.016411	0.01878	0.01792	0.01730	0.01196	0.015774	0.008609	0.008609	0.008609	0.008609	0.008609	0.008609	0.008609	0.008609	0.008609	0.008609	0.008609	0.008609	21
22	Selected services	0.104742	0.131033	0.097379	0.067888	0.037395	0.037395	0.055250	0.026261	0.026261	0.026261	0.026261	0.026261	0.026261	0.026261	0.026261	0.026261	0.026261	0.026261	0.026261	22
23	Trade and transportation	0.106773	0.096539	0.073279	0.130772	0.082799	0.058680	0.054946	0.031199	0.031199	0.031199	0.031199	0.031199	0.031199	0.031199	0.031199	0.031199	0.031199	0.031199	0.031199	23

TABLE D-3 (cont.)

Sector number	Sector title	20	21	22	23	24	25	26	Sector number
1	Meat animals and products	0.000083	0.000242	0.000092	0.000100	0.000198	0.000214	0.001013	1
2	Poultry and eggs	0.000019	0.000053	0.000021	0.000022	0.000043	0.000046	0.000218	2
3	Poultry and products	0.000016	0.000043	0.000015	0.000017	0.000030	0.000031	0.000051	3
4	Food and feed grains	0.000047	0.0000125	0.0000046	0.000028	0.0000083	0.0000072	0.0000260	4
5	Cotton	0.000004	0.0000161	0.000006	0.000004	0.000007	0.000002	0.000006	5
6	Vegetables	0.000003	0.000008	0.000002	0.000001	0.000005	0.000003	0.000008	6
7	Fruit (excluding citrus) & nuts	0.000031	0.000076	0.000027	0.000007	0.000024	0.000032	0.000045	7
8	Citrus	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	8
9	Miscellaneous agriculture	0.000036	0.000116	0.000039	0.000036	0.000076	0.000093	0.000355	9
10	Miscellaneous agr. processing	0.000168	0.001225	0.000187	0.000187	0.000121	0.000057	0.000143	10
11	Meat and poultry processing	0.000093	0.000238	0.000090	0.000090	0.000087	0.000098	0.000346	11
12	Dairy products	0.000042	0.000101	0.000036	0.000017	0.000070	0.000184	0.000121	12
13	Canning, preserving, freezing	0.000026	0.000072	0.000022	0.000011	0.000045	0.000123	0.000076	13
14	Miscellaneous agr. processing	0.001006	0.002368	0.000839	0.000205	0.000609	0.000442	0.001268	14
15	Chemicals and fertilizers	0.017336	0.046696	0.039348	0.002404	0.009242	0.003644	0.01268	15
16	Petrochemicals and machinery	0.017736	0.015507	0.002368	0.017327	0.009242	0.003644	0.01268	16
17	Other manufacturing	0.004979	0.000661	0.000285	0.000264	0.001026	0.002110	0.004615	17
18	Primary metals	0.000370	0.0047210	0.000285	0.000264	0.001026	0.002110	0.004615	18
19	Other manufacturing	0.029054	0.027044	0.032044	0.003284	0.009608	0.002110	0.004615	19
20	Mining	0.009570	0.017267	0.008283	0.002913	0.009454	0.0018654	0.004567	20
21	Utilities	0.041569	0.025579	0.039597	0.001145	0.023246	0.035749	0.026559	21
22	Selected services	0.008796	0.009687	0.003152	0.003968	0.022808	0.018704	0.018704	22
23	Trade and transportation	0.109621	0.098097	0.075066	0.15874	0.114703	0.049545	0.14703	23
24	Unallocated	0.063303	0.029190	0.075066	0.15874	0.114703	0.049545	0.14703	24
25	Unallocated	0.063303	0.029190	0.075066	0.15874	0.114703	0.049545	0.14703	25
26	Unallocated	0.063303	0.029190	0.075066	0.15874	0.114703	0.049545	0.14703	26

* Each entry shows dollars of direct plus indirect purchases from N. California sector listed at the left by the N. California sector listed at the top per dollar of output of the latter sector.

TABLE D-5

Interindustry Flow of Goods and Services by Sector of Origin and Destination, Southern California Economy, 1958^{a/}

Sector number	Sector title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sector number	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veget.	Fruit and nuts	Citrus	Forage	Misc. agric.	Grain mill prod.	Meat & poultry prod.	Dairy prod.	Canning, preserving, freezing	Misc. agri. prod.	Chem. and fert.	Petro-chem	Metals & mech.	Air-craft		
1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	119471.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1	
2	Poultry and eggs	-0.	20401.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	26229.	11.	1.	945.	-0.	-0.	-0.	-0.	2	
3	Farm dairy products	-0.	-0.	3814.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	126132.	-0.	-0.	-0.	-0.	-0.	-0.	3	
4	Food and feed grains	3893.	3990.	2656.	241.	-0.	-0.	-0.	-0.	-0.	87.	12852.	-0.	-0.	-0.	762.	-0.	-0.	-0.	-0.	4	
5	Cotton	-0.	-0.	-0.	-0.	67.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5	
6	Vegetables	-0.	-0.	-0.	-0.	-0.	430.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	37547.	-0.	-0.	-0.	-0.	6	
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	11561.	4700.	24.	-0.	-0.	7	
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3415.	-0.	-0.	-0.	-0.	8	
9	Forage	20126.	-0.	19745.	-0.	-0.	-0.	-0.	-0.	-0.	1545.	1104.	-0.	-0.	3556.	-0.	-0.	-0.	-0.	-0.	9	
10	Miscellaneous agriculture	784.	-0.	1182.	1040.	3638.	11345.	656.	2972.	1706.	6564.	-0.	26.	-0.	12415.	21216.	6445.	-0.	-0.	-0.	10	
11	Grain mill products	11918.	32572.	11293.	-0.	-0.	-0.	-0.	-0.	-0.	169.	1722.	-0.	113.	1173.	22800.	1157.	-0.	-0.	-0.	11	
12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	297.	21346.	-0.	2041.	7030.	1435.	-0.	-0.	-0.	12	
13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	475.	1303.	21285.	1712.	2758.	458.	-0.	-0.	-0.	13	
14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2995.	304.	-0.	-0.	-0.	14	
15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7815.	-0.	17291.	13306.	47141.	19242.	199.	20.	-0.	15	
16	Chemicals and fertilizers	337.	448.	143.	1117.	747.	7746.	1355.	4347.	1040.	2177.	4812.	1782.	6599.	9887.	15672.	117828.	3676.	2644.	5292.	16	
17	Petroleum	149.	1325.	64.	1131.	329.	3755.	718.	1876.	1047.	1692.	438.	1247.	1440.	2002.	-0.	-0.	803466.	11004.	4792.	17	
18	Fabricated metals and machinery	2534.	2061.	1889.	2134.	533.	6473.	1156.	3193.	2145.	3220.	1606.	3351.	2219.	41016.	16429.	16952.	39270.	591587.	205162.	18	
19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	19816.	71314.	19	
20	Primary metals	14.	10.	6.	1.	1.	2.	2.	5.	1.	8.	-0.	-0.	-0.	-0.	477.	6064.	520.	137440.	76574.	20	
21	Other manufacturing	614.	880.	512.	189.	96.	4859.	696.	2279.	189.	1158.	7000.	2539.	12331.	19573.	15245.	26118.	9140.	158485.	51444.	21	
22	Mining	-0.	-0.	-0.	2.	1.	20.	1.	5.	2.	10.	619.	288.	305.	114.	985.	1048.	22156.	1121.	407.	22	
23	Utilities	897.	840.	680.	117.	141.	1153.	204.	648.	136.	1373.	553.	19199.	1036.	140.	1778.	4903.	5134.	8822.	3843.	23	
24	Selected services	971.	729.	474.	338.	129.	1624.	278.	792.	341.	887.	8739.	32549.	28446.	29853.	168262.	82455.	82708.	160890.	55309.	24	
25	Trade and transportation	7582.	8988.	10213.	1003.	530.	4136.	566.	1748.	931.	3208.	4797.	35337.	14445.	16128.	90441.	63143.	172687.	144005.	40589.	25	
26	Unallocated	4378.	2652.	3935.	2419.	2004.	7976.	710.	2159.	2079.	5298.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	26	
27	Scrap and by-products	5404.	6179.	2345.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3109.	28289.	11497.	16538.	30459.	707.	7426.	4244.	983.	27	
28a	Imports from N. California	18252.	5203.	17704.	56.	11.	20.	60.	19.	1459.	3080.	4302.	5451.	45636.	16819.	257.	75.	115.	136.	136.	28a	
28b	Imports from outside	27089.	47420.	22892.	1903.	555.	7208.	1184.	3659.	1180.	3467.	49134.	243162.	33773.	33597.	75060.	98464.	98419.	491356.	148329.	28b	
29	Maintenance construction	2198.	1776.	1618.	529.	315.	2658.	567.	1885.	537.	1738.	416.	1.	1348.	1673.	3356.	1104.	2032.	1750.	3781.	29	
30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30
	Households and government	11365.	5342.	52550.	12440.	19802.	134163.	14647.	95958.	31568.	142923.	75557.	87508.	47291.	53861.	311086.	321860.	537426.	1307980.	2203137.	30	
GROSS OUTLAY		118505.	140816.	157909.	24660.	28897.	193553.	22794.	121390.	42923.	176565.	184488.	628621.	336261.	354473.	822101.	845697.	1771697.	7235019.	3527618.	0.0.	

TABLE D-5 (contd.)

Sector number	Sector title	20	21	22	23	24	25	26	27	28a	28b	29	30	31	32	33	34	35	36-37	GROSS DOMESTIC OUTPUT b/	Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located	Scrap and by-prod.	Exports to N. Calif.	Exports to outside	Maint. constr.	New constr.	State & local gov.	Federal gov.	Inventory add't'n	Inventory deplet'n	Gross pri. cap. form.	All house-holds		
1	Meat animals and products	-0.	23.	-0.	-0.	-0.	-0.	-0.	28.	-0.	-0.	-0.	-0.	-0.	-0.	2553.	-0.	-0.	-0.	411.	118506.
2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	437.	-0.	-0.	-0.	92789.	140813.
3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	18870.	-0.	-0.	-0.	-0.	-0.	-0.	1074.	-0.	-0.	-0.	4020.	153910.
4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	179.	-0.	-0.	-0.	24660.	24660.
5	Cotton	-0.	438.	-0.	-0.	-0.	-0.	-0.	2524.	-0.	26599.	-0.	-0.	-0.	-0.	-0.	-1132.	-0.	-0.	28496.	28496.
6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	874.	-0.	16732.	-0.	-0.	-0.	-0.	1583.	-0.	-0.	-0.	136163.	193553.
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	95579.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4479.	22755.
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	365.	-0.	-0.	-0.	22396.	121390.
9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-1024.	-0.	-0.	32237.	176563.
10	Miscellaneous agriculture	-0.	2442.	-0.	-0.	-0.	-0.	95.	-0.	23014.	50105.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	99496.	184487.	
11	Grain mill products	-0.	7.	-0.	-0.	-0.	-0.	67.	526.	-0.	-0.	-0.	-0.	949.	-0.	360.	-0.	-0.	560365.	628620.	
12	Meat and poultry processing	-0.	-0.	-0.	-0.	92.	1193.	19826.	6375.	-0.	-0.	-0.	-0.	4371.	-0.	2018.	-0.	-0.	303304.	336259.	
13	Dairy products	-0.	1111.	-0.	-0.	54.	706.	475.	-0.	-0.	-0.	-0.	-0.	2628.	-0.	1039.	-0.	-0.	272076.	354974.	
14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	50.	667.	461.	-0.	-0.	64219.	-0.	-0.	7142.	-0.	1413.	-0.	-0.	701633.	822100.	
15	Miscellaneous agri. processing	-0.	91.	-0.	-0.	50.	667.	461.	-0.	-0.	-0.	-0.	-0.	4935.	-0.	1963.	-0.	-0.	245583.	645677.	
16	Chemicals and fertilizers	7504.	112950.	2712.	252.	11841.	3395.	32644.	10781.	-0.	-0.	54101.	29800.	32752.	-0.	45.	-0.	-0.	411198.	1771697.	
17	Petroleum	4596.	16100.	3821.	7917.	105107.	30892.	30892.	1788.	-0.	233089.	25377.	62042.	34173.	-0.	-0.	-0.	-0.	624168.	704553.	
18	Fabricated metals and machinery	32285.	91806.	7132.	8247.	100999.	38289.	85704.	34829.	-0.	73531.	443633.	81260.	-0.	-0.	-0.	-0.	-0.	25733.	3527618.	
19	Aircraft and parts	50.	6465.	-0.	-0.	324703.	12684.	84920.	38929.	236540.	2074241.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	803.	760219.	
20	Primary metals	118100.	44814.	3712.	796.	363.	2515.	10124.	12444.	-0.	-0.	23775.	123100.	-0.	-0.	-0.	-0.	-0.	1187163.	3296482.	
21	Other manufacturing	11720.	704536.	8151.	24025.	94083.	68722.	343926.	16534.	-0.	-0.	6411.	10155.	4500.	-0.	-0.	-0.	-0.	16242.	216630.	
22	Mining	69473.	34479.	18675.	65.	507.	1527.	9945.	-0.	-0.	-0.	-0.	1946.	10946.	48730.	21152.	-0.	-0.	682.	1099086.	
23	Utilities	14196.	33741.	4216.	147059.	23141.	122311.	113932.	-0.	-0.	-0.	41152.	14389.	312363.	18181.	-0.	-0.	-0.	178399.	3754938.	
24	Selected services	2955.	17291.	387.	170181.	117874.	117874.	311200.	-0.	-0.	49176.	110883.	423268.	57277.	115829.	-0.	-0.	-0.	57012.	471807.	
25	Trade and transportation	57172.	227559.	8189.	14444.	87575.	221173.	311200.	12586.	-0.	-0.	14128.	235535.	135068.	181596.	-0.	-0.	-0.	-0.	-0.	25
26	Unallocated	20296.	112213.	11234.	96769.	413873.	903485.	1190321.	-0.												

TABLE D-6
Technical Coefficients, Southern California Economy, 1958^{1/}

Sector number	Sector title	1 Meat animals	2 Poultry and eggs	3 Farm dairy prod.	4 Grains	5 Cotton	6 Veg.	7 Fruit and nuts	8 Citrus	9 Forage	10 Misc. agri.	11 Grain mill prod.	12 Meat & poultry proc.	13 Dairy prod.	14 Canning, preserving, freezing	15 Misc. agri. proc.	16 Chem. and ferr.	17 Petroleum	18 Non-metals & mach.	19 Aircraft	Sector number
1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.183489	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1	
2	Poultry and eggs	-0.000000	0.144877	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.041725	0.000000	0.000000	0.000000	0.000000	-0.000000	-0.000000	-0.000000	2	
3	Farm dairy products	-0.000000	-0.000000	0.024781	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.175101	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3	
4	Food and feed grains	0.032851	0.028335	0.017257	0.004773	-0.000000	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.004663	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	4	
5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	0.002319	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5	
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	0.003255	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6	
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.038274	0.005717	0.000000	-0.000000	-0.000000	-0.000000	7	
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8	
9	Forage	0.169832	-0.000000	0.128290	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.005384	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	9	
10	Miscellaneous agriculture	0.004616	-0.000000	0.007680	0.042174	0.172826	0.057065	0.028830	0.024483	0.039722	0.037174	-0.000000	0.000041	-0.000000	-0.000000	0.034974	0.025807	0.007621	-0.000000	10	
11	Grain mill products	0.100570	0.231309	0.073310	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.009334	-0.000000	0.000000	0.000000	0.000000	-0.000000	-0.000000	11	
12	Meat and poultry processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.001610	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	12	
13	Dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.002575	0.002299	0.004823	0.003355	0.003562	-0.000000	-0.000000	13	
14	Canning, preserving, freezing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	14	
15	Miscellaneous agri. processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.042360	-0.000000	0.051421	0.037489	0.057588	0.000000	-0.000000	15	
16	Chemicals and fertilizers	0.002844	-0.003181	0.009229	0.045294	0.025850	0.040020	0.059550	0.035810	0.024222	0.012330	0.026083	0.002435	0.020814	0.016584	0.019043	0.210274	0.020748	0.008259	16	
17	Petroleum	0.001257	0.014636	0.000000	0.006537	0.018443	0.033443	0.052804	0.024364	0.049973	0.012330	0.008705	0.003331	0.006959	0.115547	0.019984	0.020045	0.019907	0.102470	17	
18	Fabricated metals and machinery	0.021383	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	18	
19	Aircraft and parts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	19	
20	Primary metals	0.000118	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20	
21	Other manufacturing	0.000181	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	21	
22	Mining	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	22	
23	Utilities	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23	
24	Selected services	0.000194	0.005177	0.003080	0.013706	0.044664	0.008391	0.012218	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	24	
25	Trade and transportation	0.063980	0.063828	0.066357	0.046673	0.018341	0.021369	0.024611	0.014400	0.021650	0.018189	0.047185	0.051778	0.008190	0.084099	0.206673	0.097499	0.046678	0.049714	25	
26	Unallocated	0.036944	0.018833	0.025547	0.098094	0.049390	0.041209	0.031203	0.011788	0.048436	0.030804	0.020002	0.054214	0.044147	0.045434	0.061356	0.074664	0.097470	0.045133	26	

TABLE D-6 (contd.)

Sector number	Sector title	20 Primary metals	21 Other mfg.	22 Mining	23 Utilities	24 Selected services	25 Trade and trans.	26 Unallocated	Sector number
1	Meat animals and products	-0.000000	0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1
2	Poultry and eggs	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	2
3	Farm dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3
4	Food and feed grains	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	4
5	Cotton	-0.000000	0.000133	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	7
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8
9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	9
10	Miscellaneous agriculture	-0.000000	0.000741	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	10
11	Grain mill products	-0.000000	0.000002	-0.000000	-0.000000	-0.000000	0.000015	0.000008	11
12	Meat and poultry processing	-0.000000	0.000337	-0.000000	-0.000000	-0.000000	0.000187	0.002288	12
13	Dairy products	-0.000000	0.000020	-0.000000	-0.000000	-0.000000	0.000111	0.000055	13
14	Canning, preserving, freezing	-0.000000	0.000028	-0.000000	-0.000000	-0.000000	0.000105	0.000053	14
15	Miscellaneous agri. processing	0.000126	0.000261	0.000005	-0.000000	0.000030	0.000087	0.000490	15
16	Chemicals and fertilizers	0.000871	0.034264	0.012519	0.000223	0.004801	0.000533	0.003767	16
17	Petroleum	0.000046	0.004884	0.017638	0.007098	0.005643	0.016509	0.003564	17
18	Fabricated metals and machinery	0.042468	0.027850	0.042155	0.007301	0.040952	0.006614	0.009889	18
19	Aircraft and parts	0.000064	0.001961	-0.000000	-0.000000	0.131656	0.001992	0.009798	19
20	Primary metals	0.155350	0.013594	0.017135	0.000705	0.000147	0.000395	0.001168	20
21	Other manufacturing	0.015417	0.213724	0.037626	0.021268	0.038472	0.010794	0.039683	21
22	Mining	0.001386	0.010459	0.086206	0.000058	0.000206	0.000240	0.001147	22
23	Utilities	0.000674	0.010235	0.019462	0.130181	0.009381	0.019211	0.013146	23
24	Selected services	0.003887	0.005245	0.001786	0.001300	0.069002	0.018514	0.014397	24
25	Trade and transportation	0.075205	0.069031	0.037802	0.012746	0.035509	0.034738	0.035907	25
26	Unallocated	0.026698	0.034040	0.051858	0.085664	0.167811	0.141905	0.137341	26

^{1/} Each entry shows dollars of direct purchases from the S. California sector listed at the left by the S. California sector listed at the top per dollar of output of the latter sector.

TABLE D-7
Interdependency Coefficients, Southern California Economy, 1956^{1/}

Sector number	Sector title																			Sector number		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		19	
		Meat animals	Poultry and eggs	From dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. prod.	Chem. and fert.	Petro-leum	Mch. metals & mech.	Air-craft		
1	Meat animals and products	1.000089	0.000149	0.000066	0.000100	0.000062	0.000060	0.000270	0.000041	0.000052	0.000032	0.000498	0.190214	0.000185	0.001267	0.001824	0.000596	0.000134	0.000057	0.000020	1	
2	Poultry and eggs	0.000030	1.169479	0.000023	0.000029	0.000018	0.000018	0.000021	0.000012	0.000015	0.000015	0.000179	0.050529	0.000172	0.000196	0.001915	0.000200	0.000030	0.000016	0.000006	2	
3	From dairy products	0.000125	0.000319	1.025505	0.000025	0.000014	0.000019	0.000026	0.000015	0.000013	0.000009	0.001151	0.000924	0.410764	0.002100	0.001536	0.000344	0.000024	0.000012	0.000004	3	
4	Food and feed grains	0.040390	0.052729	0.023235	1.009912	0.000085	0.000047	0.000036	0.000026	0.000033	0.000033	0.001208	0.009974	0.009523	0.000508	0.001314	0.000261	0.000019	0.000007	0.000002	4	
5	Cotton	0.000003	0.000004	0.000002	0.000004	1.002326	0.000006	0.000007	0.000004	0.000002	0.000002	0.000008	0.000003	0.000009	0.000009	0.000013	0.000006	0.000000	0.000000	0.000000	0.000004	5
6	Vegetables	0.000004	0.000008	0.000003	0.000005	0.000003	1.003269	0.000005	0.000003	0.000003	0.000003	0.000021	0.000003	0.000028	0.107828	0.000423	0.000004	0.000004	0.000003	0.000001	0.000001	6
7	Fruit (excluding citrus) & nuts	0.000031	0.000077	0.000023	0.000013	0.000008	0.000011	1.000016	0.000009	0.000007	0.000004	0.000276	0.000012	0.000159	0.039059	0.000234	0.000014	0.000003	0.000005	0.000002	7	
8	Citrus	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000002	0.000000	0.000003	0.000003	0.000038	0.000004	0.000001	0.000000	0.000000	8	
9	Forage	0.170616	0.001729	0.132162	0.000424	0.001193	0.000552	0.000292	0.000242	1.000385	0.009342	0.006317	0.032640	0.052994	0.000931	0.000954	0.000261	0.000031	0.000013	0.000005	9	
10	Miscellaneous agriculture	0.015988	0.002922	0.014865	0.044838	0.131376	0.060003	0.030699	0.025865	0.041659	1.039196	0.005047	0.003288	0.007892	0.044323	0.029362	0.011015	0.000495	0.000018	0.000076	10	
11	Grain mill products	0.101727	0.273495	0.076037	0.000202	0.000219	0.000188	0.000215	0.000136	0.000125	0.001051	1.010973	0.031248	0.032590	0.005051	0.030721	0.000153	0.000055	0.000017	0.000017	11	
12	Meat and poultry processing	0.000483	0.000812	0.000361	0.000543	0.000338	0.000325	0.000378	0.000221	0.000281	0.000173	0.002381	1.039520	0.001064	0.006891	0.009929	0.003239	0.000129	0.000107	0.000109	12	
13	Dairy products	0.000326	0.000830	0.000245	0.000064	0.000037	0.000049	0.000068	0.000040	0.000025	0.000023	0.002992	0.002402	1.067937	0.005459	0.003993	0.000893	0.000068	0.000031	0.000011	13	
14	Canning, preserving, freezing	0.000040	0.000072	0.000031	0.000047	0.000027	0.000036	0.000048	0.000029	0.000025	0.000015	0.000282	0.000027	0.000264	1.016094	0.003983	0.000606	0.000052	0.000025	0.000009	14	
15	Miscellaneous agri. processing	0.005082	0.012898	0.003757	0.001700	0.000979	0.001427	0.002050	0.001227	0.000909	0.000532	0.046710	0.001845	0.060769	0.042013	1.063734	0.031029	0.001856	0.000571	0.000177	15	
16	Chemicals and fertilizers	0.017570	0.020387	0.011323	0.064788	0.037222	0.055853	0.081259	0.044733	0.034688	0.018427	0.042782	0.009680	0.038204	0.039992	0.031605	1.272233	0.052230	0.018978	0.005736	16	
17	Petroleum	0.018302	0.030567	0.012957	0.090457	0.025597	0.039565	0.061794	0.030746	0.020479	0.014668	0.014668	0.011857	0.020189	0.025222	0.010890	0.007856	1.836942	0.014183	0.004010	17	
18	Fabricated metals and machinery	0.047465	0.035352	0.030788	0.117914	0.030249	0.048979	0.017476	0.037656	0.067466	0.027012	0.026046	0.022309	0.029371	0.163152	0.036093	0.040961	0.054217	1.238072	0.094119	18	
19	Aircraft and parts	0.004118	0.003441	0.002627	0.006286	0.002952	0.003472	0.004350	0.002403	0.003465	0.002119	0.002680	0.008363	0.005256	0.005215	0.004810	0.005606	0.005758	0.010486	1.254272	19	
20	Primary metals	0.006859	0.005478	0.004459	0.016182	0.004624	0.007579	0.010802	0.005810	0.009208	0.003962	0.004873	0.003669	0.005601	0.023697	0.006635	0.017714	0.009436	0.155002	0.044587	20	
21	Other manufacturing	0.023004	0.032221	0.016453	0.029307	0.010504	0.042682	0.051810	0.031227	0.016205	0.014556	0.059189	0.019594	0.067757	0.096360	0.041925	0.065176	0.033492	0.063652	0.031231	21	
22	Mining	0.001803	0.002364	0.001247	0.004185	0.001531	0.002560	0.003471	0.001940	0.002298	0.001172	0.004443	0.001631	0.003369	0.005547	0.002758	0.014528	0.027323	0.017634	0.005229	22	
23	Utilities	0.014818	0.014449	0.011641	0.013627	0.010504	0.011837	0.016140	0.009512	0.008141	0.011747	0.009137	0.012182	0.017582	0.017057	0.024044	0.029602	0.017405	0.009392	0.003378	23	
24	Selected services	0.014985	0.012140	0.008333	0.020459	0.008422	0.012411	0.016887	0.007251	0.011580	0.007444	0.008191	0.040220	0.018627	0.013812	0.013681	0.017515	0.012666	0.008144	0.003378	24	
25	Trade and transportation	0.089670	0.107433	0.087166	0.071242	0.034131	0.040960	0.049672	0.028819	0.038330	0.027945	0.077235	0.085174	0.155969	0.130826	0.244410	0.151607	0.115378	0.088123	0.033528	25	
26	Unallocated	0.087529	0.071171	0.065642	0.157639	0.102181	0.074499	0.070406	0.040354	0.080149	0.050156	0.067527	0.108519	0.117840	0.111684	0.131831	0.151005	0.242212	0.094456	0.032889	26	

TABLE D-7 (contd.)

Sector number	Sector title								Sector number
		20	21	22	23	24	25	26	
		Primary metal	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	
1	Meat animals and products	0.000049	0.000157	0.000057	0.000059	0.000123	0.000123	0.000525	1
2	Poultry and eggs	0.000014	0.000042	0.000016	0.000016	0.000033	0.000033	0.000141	2
3	From dairy products	0.000013	0.000034	0.000012	0.000012	0.000006	0.000006	0.000036	3
4	Food and feed grains	0.000007	0.000021	0.000008	0.000004	0.000010	0.000010	0.000033	4
5	Cotton	0.000005	0.000171	0.000009	0.000005	0.000010	0.000010	0.000008	5
6	Vegetables	0.000003	0.000009	0.000003	0.000003	0.000001	0.000001	0.000008	6
7	Fruit (excluding citrus) & nuts	0.000006	0.000015	0.000005	0.000002	0.000005	0.000007	0.000008	7
8	Citrus	0.000000	0.000001	0.000000	0.000000	0.000000	0.000001	0.000001	8
9	Forage	0.000012	0.000046	0.000014	0.000011	0.000026	0.000029	0.000096	9
10	Miscellaneous agriculture	0.000216	0.001528	0.000251	0.000063	0.000178	0.000071	0.000160	10
11	Grain mill products	0.000061	0.000167	0.000062	0.000021	0.000057	0.000057	0.000137	11
12	Meat and poultry processing	0.000268	0.000804	0.000309	0.000321	0.000669	0.000667	0.002856	12
13	Dairy products	0.000034	0.000088	0.000031	0.000015	0.000050	0.000126	0.000078	13
14	Canning, preserving, freezing	0.000028	0.000080	0.000024	0.000012	0.000507	0.000325	0.000879	14
15	Miscellaneous agri. processing	0.000730	0.001836	0.000650	0.000165	0.002792	0.004077	0.009264	15
16	Chemicals and fertilizers	0.020524	0.058039	0.022879	0.003335	0.012792	0.004077	0.009264	16
17	Petroleum	0.022381	0.016998	0.039746	0.016938	0.018765	0.033973	0.010713	17
18	Fabricated metals and machinery	0.073653	0.051246	0.064450	0.014490	0.074854	0.014230	0.020370	18
19	Aircraft and parts	0.003434	0.006713	0.002829	0.002501	0.181827	0.009050	0.018207	19
20	Primary metals	1.196517	0.028247	0.031753	0.003690	0.015850	0.027282	0.005834	20
21	Other manufacturing	0.040201	1.284926	0.063854	0.039066	0.073804	0.027069	0.063794	21
22	Mining	0.120805	0.018473	1.099183	0.001326	0.003411	0.001689	0.003066	22
23	Utilities	0.033683	0.021311	0.030111	1.153075	0.019680	0.027281	0.020036	23
24	Selected services	0.009409	0.011665	0.005860	0.004412	1.080186	0.024184	0.003378	24
25	Trade and transportation	0.111710	0.108626	0.081966	0.025199	0.064498	1.049516	0.053272	25
26	Unallocated	0.077723	0.084934	0.093868	0.124277	0.235744	0.186479	1.180428	26

^{1/} Each entry shows dollars of direct plus indirect requirements for products of the S. California sector listed at the left per dollar of final demand for products of the S. California sector listed at the top.

TABLE D-2
Direct and Indirect Water Requirements, Southern California Economy, 1992

Sector number	Sector title	Sector																			Sector number
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
		Meat animals	Poultry and eggs	Parm dairy prod.	Grains	Cotton	Veg.	fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry prod.	Dairy prod.	Canning, preserving, freezing	Misc. agri. prod.	Chem. and fert.	Petro-leum	Fab. metals & mech.	Air-craft	
1	Meat animals and products	0.041808	0.000006	0.000003	0.000004	0.000003	0.000003	0.000003	0.000002	0.000002	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	1
2	Poultry and eggs	0.000000	0.005589	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2
3	Parm dairy products	0.000004	0.000009	0.028698	0.000001	0.000000	0.000001	0.000001	0.000000	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	3
4	Food and feed grains	0.308496	0.403132	0.177640	7.721199	0.000646	0.000361	0.000273	0.000195	0.000250	0.004534	0.544419	0.076256	0.072808	0.003881	0.025334	0.001999	0.000143	0.000054	0.000018	4
5	Cotton	0.000010	0.000014	0.000007	0.000013	3.265285	0.000019	0.000022	0.000014	0.000007	0.000006	0.000026	0.000009	0.000029	0.000042	0.000018	0.000028	0.000015	0.000028	0.000014	5
6	Vegetables	0.000005	0.000010	0.000004	0.000006	0.000004	1.277822	0.000007	0.000004	0.000003	0.000002	0.000002	0.000004	0.000036	0.137335	0.000538	0.000082	0.000007	0.000003	0.000001	6
7	Fruit (excluding citrus) & nuts	0.000003	0.000156	0.000047	0.000027	0.000016	0.000022	2.021918	0.000019	0.000014	0.000004	0.000004	0.000024	0.000025	0.078973	0.012605	0.000478	0.000028	0.000010	0.000003	7
8	Citrus	0.000001	0.000001	0.000000	0.000001	0.000000	0.000001	1.601713	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.015657	0.000041	0.000009	0.000000	0.000000	0.000000	8
9	Forage	2.539968	0.025742	1.967500	0.006310	0.017761	0.008223	0.004348	0.003604	14.892787	0.139068	0.094042	0.485907	0.788927	0.013853	0.014264	0.003881	0.000469	0.000201	0.000071	9
10	Miscellaneous agriculture	0.023443	0.004285	0.021798	0.065748	0.192640	0.087984	0.045615	0.037955	0.061086	1.523804	0.007400	0.004821	0.011572	0.067925	0.043055	0.016152	0.000726	0.000120	0.000111	10
11	Grain mill products	0.000248	0.000666	0.000185	0.000000	0.000001	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000012	0.000005	0.000000	0.000000	0.000000	0.000000	11
12	Meat and poultry processing	0.000006	0.000010	0.000004	0.000007	0.000004	0.000004	0.000005	0.000003	0.000003	0.000002	0.000029	0.012734	0.000012	0.000085	0.000122	0.000040	0.000009	0.000001	0.000001	12
13	Dairy products	0.000007	0.000017	0.000005	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	13
14	Canning, preserving, freezing	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14
15	Miscellaneous agri. processing	0.000071	0.000180	0.000053	0.000024	0.000014	0.000020	0.000029	0.000017	0.000013	0.000007	0.000063	0.000026	0.000050	0.000087	0.014871	0.000434	0.000026	0.000008	0.000002	15
16	Chemicals and fertilizers	0.000390	0.000452	0.000251	0.001438	0.000826	0.001239	0.001803	0.000233	0.000710	0.000409	0.000949	0.000215	0.000848	0.000087	0.000701	0.028230	0.001159	0.000421	0.000127	16
17	Petroleum	0.000316	0.000527	0.000224	0.001561	0.000442	0.000683	0.001666	0.000431	0.000829	0.000353	0.000253	0.000205	0.000348	0.000435	0.000187	0.000136	0.001694	0.000245	0.000104	17
18	Fabricated metals and machinery	0.000155	0.000115	0.000101	0.000385	0.000099	0.000160	0.000123	0.000220	0.000088	0.000085	0.000073	0.000096	0.000096	0.000533	0.000118	0.000134	0.000177	0.000464	0.000107	18
19	Aircraft and parts	0.000007	0.000006	0.000005	0.000011	0.000005	0.000006	0.000008	0.000004	0.000006	0.000005	0.000005	0.000015	0.000009	0.000009	0.000008	0.000010	0.000010	0.000018	0.000174	19
20	Primary metals	0.000034	0.000022	0.000002	0.000008	0.000023	0.000037	0.000053	0.000029	0.000045	0.000020	0.000024	0.000018	0.000028	0.000017	0.000033	0.000087	0.000047	0.000765	0.000220	20
21	Other manufacturing	0.000063	0.000088	0.000045	0.000080	0.000040	0.000116	0.000141	0.000085	0.000044	0.000040	0.000161	0.000093	0.000185	0.000263	0.000114	0.000178	0.000091	0.000173	0.000085	21
22	Mining	0.000105	0.000137	0.000072	0.000243	0.000089	0.000149	0.000202	0.000113	0.000137	0.000068	0.000258	0.000095	0.000196	0.000322	0.000160	0.000844	0.001587	0.001024	0.000304	22
23	Utilities	0.000832	0.000812	0.000654	0.000765	0.000590	0.000665	0.000907	0.000534	0.000457	0.000660	0.000513	0.000664	0.000948	0.000958	0.000858	0.001351	0.001663	0.000978	0.000528	23
24	Selected services	0.000065	0.000052	0.000036	0.000088	0.000036	0.000054	0.000073	0.000040	0.000050	0.000032	0.000055	0.000174	0.000000	0.000060	0.000059	0.000059	0.000035	0.000015	0.000015	24
25	Trade and transportation	0.000387	0.000464	0.000376	0.000307	0.000147	0.000177	0.000214	0.000124	0.000165	0.000121	0.000333	0.000368	0.000673	0.000565	0.001045	0.000654	0.000481	0.000380	0.000145	25
26	Unallocated	0.000378	0.000307	0.000283	0.000680	0.000441	0.000322	0.000306	0.000174	0.000346	0.000291	0.000468	0.000509	0.000482	0.000569	0.000652	0.001045	0.000468	0.000142	0.000142	26
TOTAL		2.916860	0.442806	2.198012	7.798980	3.479112	1.378068	2.076628	1.646367	14.957234	1.669447	0.652641	0.590490	0.912099	0.333588	0.114999	0.055519	0.039444	0.009125	0.004375	TOTAL

TABLE D-3 (contd.)

Sector number	Sector title	Sector								Sector number
		20	21	22	23	24	25	26		
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located		
1	Meat animals and products	0.000002	0.000007	0.000002	0.000002	0.000005	0.000005	0.000022	1	
2	Poultry and eggs	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	2	
3	Parm dairy products	0.000000	0.000001	0.000000	0.000000	0.000001	0.000002	0.000001	3	
4	Food and feed grains	0.000056	0.000162	0.000059	0.000032	0.000077	0.000079	0.000249	4	
5	Cotton	0.000017	0.000057	0.000028	0.000017	0.000032	0.000012	0.000028	5	
6	Vegetables	0.000004	0.000011	0.000003	0.000002	0.000007	0.000017	0.000011	6	
7	Fruit (excluding citrus) & nuts	0.000012	0.000031	0.000011	0.000003	0.000010	0.000014	0.000017	7	
8	Citrus	0.000000	0.000001	0.000000	0.000000	0.000001	0.000002	0.000001	8	
9	Forage	0.000185	0.000680	0.000206	0.000171	0.000384	0.000429	0.001429	9	
10	Miscellaneous agriculture	0.000317	0.002240	0.000369	0.000093	0.000261	0.000104	0.000235	10	
11	Grain mill products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11	
12	Meat and poultry processing	0.000003	0.000010	0.000004	0.000004	0.000008	0.000008	0.000035	12	
13	Dairy products	0.000001	0.000002	0.000001	0.000000	0.000001	0.000003	0.000002	13	
14	Canning, preserving, freezing	0.000000	0.000001	0.000000	0.000000	0.000001	0.000001	0.000001	14	
15	Miscellaneous agri. processing	0.000010	0.000026	0.000009	0.000002	0.000007	0.000005	0.000012	15	
16	Chemicals and fertilizers	0.000455	0.001288	0.000508	0.000074	0.000284	0.000090	0.000206	16	
17	Petroleum	0.000386	0.000293	0.000686	0.000292	0.000289	0.000586	0.000185	17	
18	Fabricated metals and machinery	0.000241	0.000167	0.000210	0.000047	0.000244	0.000046	0.000067	18	
19	Aircraft and parts	0.000006	0.000012	0.000005	0.000004	0.000315	0.000016	0.000032	19	
20	Primary metals	0.000906	0.000139	0.000157	0.000018	0.000078	0.000016	0.000029	20	
21	Other manufacturing	0.000110	0.000350	0.000174	0.000106	0.000201	0.000074	0.000174	21	
22	Mining	0.0007017	0.001073	0.063846	0.000077	0.000198	0.000097	0.000178	22	
23	Utilities	0.001892	0.001197	0.001691	0.064767	0.001105	0.001532	0.001161	23	
24	Selected services	0.000041	0.000050	0.000025	0.000019	0.000462	0.000104	0.000086	24	
25	Trade and transportation	0.000482	0.000469	0.000267	0.000109	0.000278	0.000450	0.000230	25	
26	Unallocated	0.000335	0.000367	0.000405	0.000536	0.001017	0.000805	0.000595	26	
TOTAL		0.017479	0.012285	0.068667	0.066378	0.009469	0.008577	0.009485	TOTAL	

Each entry shows the million gallons of direct plus indirect water requirements by the S. California sector listed at the left per \$1,000 of final demand for products of S. California sector listed at the top.

Table D-9 continued.

Sector number	Sector title	N 20	N 21	N 22	N 23	N 24	N 25	N 26	N 27	N 28	N 29	N 30	N 31	N 32	N 33	N 34	Sector number		
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located	Scrap and by-prod.	Net trade to outside	Maint. constr.	New constr.	State & local gov.	Federal gov.	Inventory addit'n	Inventory deplet'n		Gross pri. comp. form.	All house-holds
N 1	Meat animals and products	-0.	19.	-0.	-0.	-0.	-0.	-0.	68.	-0.	-0.	-0.	-0.	6299.	-0.	-0.	1063.	N 1	
N 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	106.	-0.	-0.	87954.	N 2	
N 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30535.	-0.	-0.	-0.	-0.	1737.	-0.	-0.	6505.	N 3	
N 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4467.	-0.	-0.	-0.	N 4	
N 5	Cotton	-0.	232.	-0.	-0.	-0.	-0.	-0.	23687.	257243.	-0.	-0.	-0.	-0.	-10619.	-0.	-0.	N 5	
N 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1601.	109704.	-0.	-0.	-0.	1173.	-0.	-0.	106785.	N 6	
N 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	56447.	-0.	-0.	-0.	-0.	-0.	-0.	15697.	N 7	
N 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	8890.	-0.	-0.	-0.	-0.	-0.	-0.	16344.	N 8	
N 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2726.	-0.	-0.	-0.	N 9	
N 10	Miscellaneous agriculture	-0.	1133.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-844.	-0.	21211.	N 10	
N 11	Grain mill products	-0.	5.	-0.	-0.	-0.	96.	54.	983.	-0.	-0.	944.	-0.	470.	-0.	-0.	99696.	N 11	
N 12	Meat and poultry processing	-0.	728.	-0.	-0.	62.	1104.	14965.	7583.	-0.	-0.	920.	4617.	2401.	-0.	-0.	519070.	N 12	
N 13	Dairy products	-0.	44.	-0.	-0.	38.	679.	372.	-0.	-0.	-0.	-0.	2510.	1725.	-0.	-0.	291933.	N 13	
N 14	Canning, preserving, freezing	-0.	48.	-0.	-0.	27.	497.	280.	-0.	1029812.	-0.	-0.	5294.	5049.	-0.	-0.	203249.	N 14	
N 15	Miscellaneous agri. processing	88.	690.	1.	-0.	62.	628.	3918.	4478.	-0.	-0.	-0.	5542.	3791.	-0.	-0.	793946.	N 15	
N 16	Chemicals and fertilizers	4045.	52935.	1982.	217.	5733.	2246.	17634.	6692.	-0.	39504.	21759.	21544.	-0.	-0.	-0.	163604.	N 16	
N 17	Petroleum	2792.	8503.	3166.	7661.	7593.	78358.	18806.	1398.	160454.	20881.	51049.	25331.	-0.	-11719.	-0.	328101.	N 17	
N 18	Fabricated metals and machinery	15327.	37891.	5877.	6238.	43066.	22308.	40773.	14877.	-0.	47284.	285279.	47375.	-0.	-15404.	320084.	419218.	N 18	
N 19	Aircraft and parts	5.	509.	-0.	-0.	26389.	1409.	7700.	68.	-0.	-0.	-0.	-0.	-0.	-11.	2515.	284.	N 19	
N 20	Primary metals	77540.	25578.	3303.	832.	215.	2027.	6660.	8168.	-0.	21142.	109468.	-0.	-0.	-1211.	-0.	651.	N 20	
N 21	Other manufacturing	5591.	292220.	5271.	18260.	40657.	40237.	164430.	6858.	-0.	39397.	256881.	32343.	-0.	-241.	31756.	626775.	N 21	
N 22	Mining	42202.	18209.	15379.	63.	276.	1138.	6054.	-0.	36182.	8355.	3703.	9282.	-0.	-1283.	-0.	12192.	N 22	
N 23	Utilities	11130.	23000.	4482.	183689.	16297.	117695.	89521.	-0.	-0.	2067.	11626.	46623.	20238.	-0.	11241.	474555.	N 23	
N 24	Selected services	1742.	8861.	309.	1379.	90095.	85268.	73706.	-0.	-0.	14515.	3169.	10349.	224669.	-0.	434.	768475.	N 24	
N 25	Trade and transportation	34448.	119206.	6688.	13865.	47394.	163553.	147912.	9307.	-0.	90662.	353620.	42114.	85165.	-0.	116114.	2796040.	N 25	
N 26	Unallocated	10481.	50377.	7864.	79606.	191955.	572574.	615978.	-0.	-0.	9882.	164749.	85110.	114428.	-0.	-0.	31801.	2889894.	N 26
N 27	Scrap and by-products	12412.	2759.	236.	7109.	2722.	3374.	-0.	-0.	-0.	577.	3150.	-0.	-0.	-0.	-9141.	219.	N 27	
N 28	Net trade from outside	66162.	315937.	13110.	48744.	105834.	177182.	307866.	24506.	-0.	97969.	510743.	90027.	25197.	6186.	-11288.	247498.	1591308.	N 28
N 29	Maintenance construction	2073.	2887.	195.	260068.	10293.	79107.	276022.	-0.	-0.	61.	388.	247180.	50347.	-0.	-0.	-0.	2126.	N 29
N 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	467150.	142544.	-0.	-0.	2035751.	-0.	N 30
N 30	Households and government	171862.	774667.	110416.	463264.	602207.	3384075.	3395564.	-0.	-0.	633855.	1185496.	997929.	2408898.	-0.	-0.	-0.	-0.	
S 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 1	
S 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 2	
S 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 3	
S 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 4	
S 5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 5	
S 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 6	
S 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 7	
S 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 8	
S 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 9	
S 10	Miscellaneous agriculture	-0.	157.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-117.	-0.	2945.	S 10	
S 11	Grain mill products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 11	
S 12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 12	
S 13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 13	
S 14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 14	
S 15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 15	
S 16	Chemicals and fertilizers	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 16	
S 17	Petroleum	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 17	
S 18	Fabricated metals and machinery	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 18	
S 19	Aircraft and parts	26.	2905.	-0.	-0.	150768.	8047.	43995.	389.	-0.	-0.	-0.	-0.	-0.	-65.	14371.	1617.	S 19	
S 20	Primary metals	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 20	
S 21	Other manufacturing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 21	
S 22	Mining	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 22	
S 23	Utilities	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 23	
S 24	Selected services	53.	271.	10.	42.	2755.	2608.	2254.	-0.	-0.	444.	97.	316.	6871.	-0.	13.	23502.	S 24	
S 25	Trade and transportation	281.	972.	55.	113.	386.	1333.	1532.	76.	-0.	739.	2883.	343.	694.	-0.	947.	22793.	S 25	
S 26	Unallocated	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 26	
S 27	Scrap and by-products	3547.	788.	67.	2032.	778.	964.	-0.	-0.	-0.	165.	900.	-0.	-0.	-0.	-2613.	43.	S 27	
S 28	Net trade with outside	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 28	
S 29	Maintenance construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 29	
S 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	S 30	
S 30	Households and government	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	
GROSS OUTLAY		461807.	1740931.	178391.	1093182.	1345602.	4746507.	5275996.	141274.	1658732.	1027499.	2965880.	2141023.	3078224.	35830.	-53548.	2800771.	12287015.	G.O.

(Continued on next page.)

Table D-9 continued.

Sector number	Sector title	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	S 9	S 10	S 11	S 12	S 13	S 14	S 15	S 16	S 17	S 18	S 19	Sector number	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petroleum	Fab. metals & mech.	Air-craft		
(Thousand dollars)																						
1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1	
2	Poultry and eggs	-0.	4524.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5816.	3.	-0.	210.	-0.	-0.	2	
3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3	
4	Food and feed grains	599.	615.	409.	37.	-0.	-0.	-0.	-0.	13.	1980.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4	
5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5	
6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6	
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7	
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	8	
9	Forage	17574.	-0.	17241.	-0.	-0.	-0.	-0.	-0.	-0.	1384.	963.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	9	
10	Miscellaneous agriculture	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	10	
11	Grain mill products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	11	
12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	12	
13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	13	
14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	14	
15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	15	
16	Chemicals and fertilizers	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	16	
17	Petroleum	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	17	
18	Fabricated metals and machinery	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	18	
19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	19	
20	Primary metals	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	20	
21	Other manufacturing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	21	
22	Mining	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	22	
23	Utilities	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	23	
24	Selected services	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	24	
25	Trade and transportation	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	25	
26	Unallocated	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	26	
27	Scrap and by-products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	27
28	Net trade from outside	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	28
29	Maintenance construction	79.	79.	64.	19.	11.	95.	20.	60.	19.	62.	15.	48.	60.	120.	47.	75.	139.	136.	136.	29	
30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30
30	Households and government	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30
1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	115471.	-0.	-0.	-0.	-0.	-0.	1	
2	Poultry and eggs	-0.	20401.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	26229.	11.	945.	-0.	-0.	-0.	2	
3	Farm dairy products	-0.	-0.	3814.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	126132.	-0.	-0.	-0.	-0.	-0.	3	
4	Food and feed grains	3893.	3908.	2658.	241.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	12852.	-0.	762.	-0.	-0.	-0.	4	
5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5	
6	Vegetables	-0.	-0.	-0.	-0.	-0.	630.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6	
7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	7	
8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	8	
9	Forage	20126.	-0.	19745.	-0.	-0.	-0.	-0.	-0.	-0.	1585.	1164.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	9	
10	Miscellaneous agriculture	784.	-0.	1182.	1040.	3636.	11065.	654.	2972.	1708.	6544.	-0.	24.	-0.	12415.	21216.	6445.	-0.	-0.	-0.	10	
11	Grain mill products	11918.	32572.	11283.	-0.	-0.	-0.	-0.	-0.	-0.	169.	1722.	-0.	113.	1173.	22880.	1157.	-0.	-0.	-0.	11	
12	Meat and poultry processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	12	
13	Dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	13	
14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	14	
15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	15	
16	Chemicals and fertilizers	337.	448.	143.	1117.	147.	7746.	1355.	4347.	1040.	2177.	4812.	1782.	6999.	5887.	15672.	177828.	36760.	26848.	5292.	16	
17	Petroleum	149.	1325.	64.	1131.	329.	3755.	718.	1876.	1047.	1692.	438.	1247.	1640.	2002.	-0.	-0.	803466.	11004.	4792.	17	
18	Fabricated metals and machinery	2534.	2041.	1889.	2134.	533.	6473.	1136.	3193.	2145.	3220.	1606.	3351.	2219.	41014.	16429.	16952.	591587.	205162.	591587.	18	
19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	19	
20	Primary metals	14.	10.	6.	1.	1.	12.	2.	5.	1.	8.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	20	
21	Other manufacturing	614.	880.	512.	189.	96.	4859.	694.	2279.	189.	1158.	7000.	2539.	12331.	19573.	15243.	26118.	9348.	106489.	51644.	21	
22	Mining	-0.	-0.	-0.	2.	1.	20.	1.	5.	2.	10.	419.	288.	305.	318.	7048.	22156.	2123.	318.	407.	22	
23	Utilities	897.	840.	880.	117.	141.	1153.	204.	648.	136.	1373.	597.	2677.	1846.	2006.	3787.	9266.	17645.	20473.	14306.	23	
24	Selected services	971.	729.	474.	338.	129.	1624.	278.	796.	341.	887.	553.	19199.	3030.	8903.	3778.	6903.	5134.	8222.	3843.	24	
25	Trade and transportation	7582.	8988.	10213.	1003.	530.	4136.	560.	1748.	931.	3208.	8705.	32549.	28644.	29853.	168242.	82455.	82700.	140890.	59309.	25	
26	Unallocated	4378.	2652.	3935.	2419.	2004.	7976.	710.	2159.	2079.	5298.	4797.	35337.	14845.	16128.	50441.	63143.	172687.	146005.	40580.	26	
27	Scrap and by-products	5404.	6179.	2345.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3109.	28289.	11697.	10538.	30459.	707.	1406.	4266.	993.	27	
28	Net trade with outside	27089.	47420.	22892.	1903.	555.	7208.	1184.	3659.	1180.	3407.	49134.	243162.	33773.	33997.	75060.	94664.	38619.	491356.	148329.	28	
29	Maintenance construction	2198.	1776.	1618.	529.	315.	2658.	567.	1685.	537.	1738.	416.	7.	1348.	1673.	3356.	1306.	2092.	3750.	3791.	29	
30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	30	
30	Households and government	11365.	5342.	52550.	12440.	19802.	134163.	14647.	95958.	31568.	142525.	75557.	87508.	47291.	53861.	311086.	321860.	517426.	1307989.	2205137.	30	
GROSS OUTPUT		118505.	140831.	153915.	24660.	28897.	193553.	22754.	121390.	42923.	176565.	184488.	628621.	336261.	354975.	822101.	845697.	1771699.	3235019.	3527616.	G.G.	

(Continued on next page)

Table D-9 continued.

Sector number	Sector title	S 20	S 21	S 22	S 23	S 24	S 25	S 26	S 27	S 28	S 29	S 30	S 31	S 32	S 33	S 34	S 35	S 36	GROSS DOMESTIC OUTPUT b/	Sector number	
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unal-located	Scrap and by-prod.	Net trade with outside	Maint. constg.	New constr.	State & local gov.	Federal gov.	Inventory addit'n	Inventory deplet'n	Gross pri. exp. form.	All house-holds			
		Thousand dollars								Thousand dollars											
H 1	Meat animals and products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	183726.	H 1	
H 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	185221.	H 2	
H 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	224898.	H 3		
H 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	152369.	H 4		
H 5	Cotton	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	271173.	H 5		
H 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	354597.	H 6		
H 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	182846.	H 7		
H 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	37435.	H 8		
H 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	163643.	H 9		
H 10	Miscellaneous agriculture	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	165748.	H 10		
H 11	Grain mill products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	256240.	H 11		
H 12	Meat and poultry processing	-0.	8.	-0.	-0.	1.	9.	145.	47.	-0.	-0.	7.	32.	-0.	-0.	-0.	4101.	603005.	H 12		
H 13	Dairy products	-0.	17.	-0.	-0.	14.	179.	120.	-0.	-0.	-0.	-0.	667.	-0.	264.	-0.	74941.	43217.	H 13		
H 14	Canning, preserving, freezing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1268131.	H 14		
H 15	Miscellaneous agri. processing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1047589.	H 15		
H 16	Chemicals and fertilizers	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	591587.	H 16		
H 17	Petroleum	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1384718.	H 17		
H 18	Fabricated metals and machinery	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1768108.	H 18		
H 19	Aircraft and parts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	41403.	H 19		
H 20	Primary metals	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	461809.	H 20		
H 21	Other manufacturing	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1740933.	H 21		
H 22	Mining	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	178392.	H 22		
H 23	Utilities	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1093182.	H 23		
H 24	Selected services	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1345601.	H 24		
H 25	Trade and transportation	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4746504.	H 25		
H 26	Unallocated	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	5275996.	H 26		
H 27	Scrap and by-products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	141274.	H 27		
H 28	Net trade from outside	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4682090.	H 28		
H 29	Maintenance construction	118.	189.	8.	9306.	653.	3674.	15700.	-0.	-0.	3.	16.	11547.	2352.	-0.	-0.	102.	1027524.	H 29		
H 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	51491.	15700.	-0.	-0.	253285.	2965881.	H 30		
H 30	Households and government	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	17490314.	H 30		
S 1	Meat animals and products	-0.	23.	-0.	-0.	-0.	-0.	-0.	28.	-0.	-0.	-0.	-0.	-0.	2593.	-0.	-0.	431.	118506.	S 1	
S 2	Poultry and eggs	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	437.	-0.	-0.	92789.	140813.	S 2	
S 3	Farm dairy products	-0.	-0.	-0.	-0.	-0.	-0.	-0.	18870.	-0.	-0.	-0.	-0.	-0.	1074.	-0.	-0.	4020.	153910.	S 3	
S 4	Food and feed grains	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	179.	-0.	-0.	24660.	24660.	S 4	
S 5	Cotton	-0.	438.	-0.	-0.	-0.	-0.	-0.	2524.	26999.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	28896.	28896.	S 5	
S 6	Vegetables	-0.	-0.	-0.	-0.	-0.	-0.	-0.	874.	16732.	-0.	-0.	-0.	1583.	24.	-1132.	-0.	136163.	193593.	S 6	
S 7	Fruit (excluding citrus) & nuts	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4479.	22755.	S 7	
S 8	Citrus	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	22396.	121390.	S 8	
S 9	Forage	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	365.	-0.	-0.	42925.	42925.	S 9	
S 10	Miscellaneous agriculture	-0.	2442.	-0.	-0.	-0.	-0.	-0.	-0.	50105.	-0.	-0.	-0.	-0.	-0.	-1024.	-0.	32337.	176563.	S 10	
S 11	Grain mill products	-0.	7.	-0.	-0.	-0.	95.	67.	526.	-0.	-0.	-0.	949.	-0.	360.	-0.	-0.	99496.	184487.	S 11	
S 12	Meat and poultry processing	-0.	1111.	-0.	-0.	92.	1193.	19826.	6375.	-0.	-0.	900.	4371.	-0.	2018.	-0.	-0.	560365.	628620.	S 12	
S 13	Dairy products	-0.	65.	-0.	-0.	54.	706.	475.	-0.	-0.	-0.	-0.	2628.	-0.	1039.	-0.	-0.	303304.	336259.	S 13	
S 14	Canning, preserving, freezing	-0.	91.	-0.	-0.	50.	667.	461.	-0.	64219.	-0.	-0.	7142.	-0.	1413.	-0.	-0.	272076.	354974.	S 14	
S 15	Miscellaneous agri. processing	-0.	861.	-0.	-0.	74.	557.	4249.	2319.	-0.	-0.	-0.	4935.	-0.	1963.	-0.	-0.	701633.	822100.	S 15	
S 16	Chemicals and fertilizers	7504.	112950.	2712.	252.	11841.	3395.	32644.	10781.	-0.	54101.	29800.	32752.	-0.	45.	-0.	-0.	245583.	845697.	S 16	
S 17	Petroleum	4596.	16100.	3821.	7917.	13917.	30892.	1788.	233089.	25377.	62042.	34173.	-0.	-0.	-14993.	-0.	-0.	411190.	1771699.	S 17	
S 18	Fabricated metals and machinery	32285.	91806.	9132.	8247.	100999.	38289.	85704.	34829.	-0.	73531.	443633.	81260.	-0.	-0.	-0.	-0.	624168.	708453.	S 18	
S 19	Aircraft and parts	50.	6465.	-0.	-0.	324703.	12684.	84920.	38929.	2074241.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	25733.	2630.	3527616.	S 19
S 20	Primary metals	118100.	44814.	3712.	796.	363.	2515.	10124.	12444.	-0.	23775.	123100.	-0.	-0.	-0.	-0.	-0.	1844.	803.	760219.	S 20
S 21	Other manufacturing	11720.	704536.	8151.	24025.	94883.	68722.	343926.	16534.	-0.	60963.	397510.	55558.	-0.	-0.	-581.	61619.	1187163.	3296482.	S 21	
S 22	Mining	69473.	34479.	18675.	65.	507.	1527.	9945.	-0.	6411.	10159.	4500.	12521.	-0.	-1558.	-0.	-0.	16242.	216630.	S 22	
S 23	Utilities	14196.	33741.	4216.	147059.	23141.	122311.	113932.	-0.	-0.	1944.	10946.	48730.	21152.	-0.	-0.	13272.	496001.	1129635.	S 23	
S 24	Selected services	2955.	17291.	387.	1469.	170181.	117874.	124779.	-0.	481913.	18181.	3969.	14389.	312363.	-0.	-0.	682.	1099086.	2466306.	S 24	
S 25	Trade and transportation	57172.	227559.	8189.	14444.	87575.	221173.	311200.	12586.	49176.	111083.	433268.	57277.	115829.	-0.	-0.	178399.	3754938.	6166828.	S 25	
S 26	Unallocated	20296.	112213.	11234.	96769.	413873.	903485.	1190321.	-0.	-0.	14128.	235535.	135068.	181596.	-0.	-0.	57412.	4717807.	8666919.	S 26	
S 27	Scrap and by-products	26273.	6717.	368.	9445.	6416.	5818.	-0.	-0.	-0.	901.	4923.	-0.	-0.	-0.	-0.	-17914.	375.	195091.	S 27	
S 28	Net trade with outside	109170.	411570.	11712.	71696.	94992.	115106.	271848.	35637.	-0.	84195.	413150.	85980.	12918.	-0.	-0.	-0.	1766606.	5028694.	S 28	
S 29	Maintenance construction	3295.	5279.	229.	259434.	18213.	102437.	437724.	-0.	-0.	71.	456.	321917.	65569.	-0.	-0.	-0.	2788.	1248750.	S 29	
S 30	New construction	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	578767.	176602.	-0.	-0.	2849155.	-0.	3604524.	S 30	
S 30	Households and government	282919.	1465709.	134084.	478712.	1103763.	4539303.	5577915.	-0.	-0.	770344.	1440770.	1346278.	3247080.	-0.	-0.	-0.	-0.	2594952.	S 30	
GROSS OUTPUT		760218.	3296481.	216631.	1129636.	2466305.	6366826.	8666917.	195091.	3098464.	1248754.	3604525.	2888392.	4152744.	20053.	-76517.	4268312.	16795749.	122236625.	G.D.	

a/ Each entry shows the value of goods and services produced by H. California or S. California sector listed at the left that were purchased by the H. California or S. California sector listed at the top.

b/ Some column and row totals do not add up exactly due to rounding.

Table D-10

Direct Requirements Per Dollar of Output, Northern California and Southern California, 1958

Sector number	Sector title	Sector																			Sector number
		N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	
		Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Wool	Fruit and nuts	Citrus	Forage	Man. agri.	Grain mill prod.	Meat & poultry prod.	Dairy prod.	Canning, preserving, freezing	Misc. agri. prod.	Chem. and fert.	Petro-chem.	Metals & mech.	Air-craft	
1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1
2	Poultry and eggs	-0.000000	0.177865	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	2
3	Farm dairy products	-0.000000	-0.000000	0.277440	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3
4	Food and feed grains	0.133111	0.114853	0.069937	0.039568	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	4
5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	0.002323	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	7
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8
9	Forage	0.332364	-0.000000	0.251062	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	9
10	Miscellaneous Agriculture	0.005813	-0.000000	0.006746	0.037035	0.110480	0.050108	0.025323	0.021477	0.034948	0.032640	0.012514	-0.000000	0.000452	0.004432	0.037331	0.001834	-0.000000	-0.000000	-0.000000	10
11	Grain mill products	0.134891	0.310265	0.098337	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	11
12	Meat and poultry processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	12
13	Dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	13
14	Canning, preserving, freezing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	14
15	Miscellaneous agri. processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	15
16	Chemicals and fertilizers	0.002520	0.002829	0.000827	0.040218	0.022937	0.035514	0.052833	0.031788	0.021504	0.010944	0.023147	0.002514	0.018471	0.014718	0.016917	0.186599	0.018412	0.007365	0.001328	16
17	Petroleum	0.001263	0.009405	0.000418	0.045842	0.011399	0.019399	0.031537	0.015440	0.024394	0.009581	0.002373	0.001985	0.004875	0.005639	-0.000000	-0.000000	0.453499	0.003401	0.001353	17
18	Fabricated metals and machinery	0.016715	0.011441	0.009596	0.067605	0.014430	0.026137	0.039679	0.020549	0.039040	0.014251	0.006802	0.004167	0.005157	0.090302	0.015618	0.015666	0.013558	0.142916	0.045458	18
19	Aircraft and parts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000007	0.000728	0.030023	19
20	Primary metals	0.000131	0.000074	0.000049	0.000059	0.000033	0.000065	0.000049	0.000053	0.000024	0.000018	-0.000000	0.000020	0.000025	0.001012	0.000627	0.007779	0.000317	0.112733	0.023454	20
21	Other manufacturing	0.004077	0.004908	0.002410	0.006031	0.002811	0.001918	0.024012	0.014744	0.003465	0.005152	0.029801	0.003171	0.028801	0.043305	0.014563	0.024253	0.004144	0.025852	0.011497	21
22	Mining	-0.000000	-0.000000	-0.000000	0.000085	0.000024	0.000107	0.000065	0.000053	0.000049	0.000054	0.002267	0.000458	0.000905	0.000894	0.000708	0.008335	0.012506	0.000656	0.000121	22
23	Utilities	0.009775	0.007699	0.007381	0.006163	0.006288	0.007685	0.006692	0.004064	0.010033	0.004180	0.005497	0.007084	0.007292	0.005945	0.014143	0.012859	0.008169	0.005241	0.001043	23
24	Selected services	0.007947	0.005021	0.002984	0.013277	0.004329	0.008142	0.011864	0.006358	0.007718	0.004875	0.002904	0.029637	0.008744	0.004935	0.004459	0.007919	0.002812	0.002644	0.001043	24
25	Trade and transportation	0.003464	0.003309	0.003824	0.040362	0.018195	0.021193	0.024430	0.014291	0.018022	0.046804	0.051361	0.084503	0.083420	0.203017	0.096711	0.046300	0.049331	0.049331	0.015585	25
26	Unallocated	0.031400	0.016008	0.021735	0.083376	0.058937	0.035028	0.026533	0.015120	0.041174	0.025503	0.022101	0.047786	0.037529	0.038624	0.052158	0.063470	0.022857	0.038367	0.009782	26

Each entry shows dollars of direct purchases from the N. California or S. California sector listed at the top per dollar of output of the latter sector.

Table D-10 continued

Sector number	Sector title	Agriculture								Food and kindred products					Textile mill and apparel				Lumber and wood products		Sector number
		Primary metals	Other mfg	Mining	Utilities	Selected services	Trace and trans	Unallocated	Meat animals	Poultry and eggs	Farm dairy prod.	Grains	Cotton	Veg	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	
1	Meat animals and products	-0.000000	0.000011	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	1
2	Poultry and eggs	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.032127	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.009252	2
3	Farm dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	3
4	Food and feed grains	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.004367	0.002657	0.001500	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000074	4
5	Cotton	-0.000000	0.000133	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	5
6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	6
7	Fruit (excluding citrus) & nuts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	7
8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	8
9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.148298	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.007838	9
10	Miscellaneous agriculture	-0.000000	0.000651	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.005220	10
11	Grain mill products	-0.000000	0.000003	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000020	0.000010	0.000010	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	11
12	Meat and poultry processing	-0.000000	0.000418	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000044	0.000233	0.002836	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	12
13	Dairy products	-0.000000	0.000025	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000028	0.000143	0.000071	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	13
14	Canning, preserving, freezing	-0.000000	0.000028	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000020	0.000105	0.000053	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000050	14
15	Miscellaneous agri. processing	0.000191	0.000396	0.000006	-0.000000	-0.000000	-0.000000	-0.000000	0.000046	0.000132	0.000743	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	15
16	Chemicals and fertilizers	0.008759	0.030406	0.011110	0.000199	0.004261	0.000473	0.003342	0.004261	0.001659	0.003564	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	16
17	Petroleum	0.006046	0.004884	0.017635	0.007508	0.005643	0.007508	0.005643	0.004700	0.007728	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	17
18	Fabricated metals and machinery	0.033189	0.021765	0.032944	0.005706	0.032005	0.004700	0.002197	0.001459	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	18
19	Aircraft and parts	0.000011	0.000292	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000160	0.000427	0.001262	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	19
20	Primary metals	0.167906	0.014692	0.018516	0.000761	0.000160	0.000215	0.008477	0.031166	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	20
21	Other manufacturing	0.012107	0.167853	0.029547	0.016704	0.030215	0.008477	0.031166	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	21
22	Mining	0.091384	0.010459	0.086210	0.000958	0.000205	0.000240	0.001147	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	22
23	Utilities	0.024101	0.013211	0.025125	0.168031	0.012111	0.024794	0.016968	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	23
24	Selected services	0.003772	0.005090	0.001732	0.001261	0.066955	0.017944	0.013970	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	24
25	Trade and transportation	0.074594	0.068473	0.037491	0.012683	0.035221	0.034458	0.035614	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	25
26	Unallocated	0.022696	0.028937	0.044083	0.072820	0.142654	0.120631	0.116751	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000011	26

(Continued on next page)

Table D-10 continued.

Sector number	Sector title	S 13	S 14	S 15	S 16	S 17	S 18	S 19	S 20	S 21	S 22	S 23	S 24	S 25	Sector number
		Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petro- leum	Fao metals & mach.	Air- craft	Primary metals	Other mfg.	Mining	Utilities	Selected services	Trans and trans.	
N 1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 1
N 2	Poultry and eggs	0.000009	-0.000000	0.000255	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 2
N 3	Farm dairy products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 3
N 4	Food and feed grains	-0.000000	-0.000000	0.000144	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 4
N 5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 5
N 6	Vegetables	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 6
N 7	Fruit (excluding citrus) & nuts	-0.000000	0.127125	0.019024	0.000097	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 7
N 8	Citrus	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 8
N 9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 9
N 10	Miscellaneous agriculture	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 10
N 11	Grain mill products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 11
N 12	Meat and poultry processing	-0.000000	0.000042	0.000062	0.000014	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 12
N 13	Dairy products	0.016059	0.001225	0.000851	0.000137	-0.000000	-0.000000	-0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 13
N 14	Canning, preserving, freezing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 14
N 15	Miscellaneous agri. processing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 15
N 16	Chemicals and fertilizers	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 16
N 17	Petroleum	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 17
N 18	Fabricated metals and machinery	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 18
N 19	Aircraft and parts	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 19
N 20	Primary metals	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 20
N 21	Other manufacturing	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 21
N 22	Mining	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 22
N 23	Utilities	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 23
N 24	Selected services	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 24
N 25	Trade and transportation	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 25
N 26	Unallocated	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	N 26
S 1	Meat animals and products	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000007	-0.000000	-0.000000	-0.000000	-0.000000	S 1
S 2	Poultry and eggs	0.000033	0.000003	0.001149	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	S 2
S 3	Farm dairy products	0.375101	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	S 3
S 4	Food and feed grains	-0.000000	-0.000000	0.000927	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	S 4
S 5	Cotton	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000133	-0.000000	-0.000000	-0.000000	-0.000000	S 5
S 6	Vegetables	-0.000000	0.105774	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	S 6
S 7	Fruit (excluding citrus) & nuts	-0.000000	0.038203	0.005717	0.000028	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	S 7
S 8	Citrus	-0.000000	0.009620	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	S 8
S 9	Forage	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	S 9
S 10	Miscellaneous agriculture	-0.000000	0.034974	0.025807	0.007621	-0.000000	-0.000000	-0.000000	-0.000000	0.000741	-0.000000	-0.000000	-0.000000	-0.000000	S 10
S 11	Grain mill products	0.000336	0.003304	0.027831	0.001368	-0.000000	-0.000000	-0.000000	-0.000000	0.000002	-0.000000	-0.000000	-0.000000	-0.000000	S 11
S 12	Meat and poultry processing	-0.000000	0.005806	0.008551	0.001933	-0.000000	-0.000000	-0.000000	-0.000000	0.000337	-0.000000	-0.000000	-0.000000	-0.000000	S 12
S 13	Dairy products	0.063299	0.004823	0.003355	0.000542	-0.000000	-0.000000	-0.000000	-0.000000	0.000020	-0.000000	-0.000000	0.000022	0.000111	S 13
S 14	Canning, preserving, freezing	-0.000000	0.015652	0.003643	0.000359	-0.000000	-0.000000	-0.000000	-0.000000	0.000028	-0.000000	-0.000000	0.000020	0.000105	S 14
S 15	Miscellaneous agri. processing	0.051421	0.037485	0.057588	0.022753	0.000223	0.000004	-0.000000	0.000126	0.000261	-0.000000	-0.000000	0.000030	0.000087	S 15
S 16	Chemicals and fertilizers	0.020814	0.016584	0.019063	0.210274	0.020748	0.008299	0.004500	0.009871	0.034264	0.012519	0.000223	0.004801	0.000533	S 16
S 17	Petroleum	0.004877	0.005640	-0.000000	-0.000000	0.453500	0.003402	0.001358	0.006046	0.004884	0.017638	0.007008	0.005643	0.016509	S 17
S 18	Fabricated metals and machinery	0.006599	0.115547	0.019984	0.020045	0.019907	0.182870	0.058159	0.042468	0.027850	0.042155	0.007301	0.040952	0.006014	S 18
S 19	Aircraft and parts	0.000000	-0.000000	-0.000000	0.000046	-0.000000	0.004890	0.201641	0.000066	0.001961	-0.000000	-0.000000	0.131656	0.001992	S 19
S 20	Primary metals	0.000024	0.000935	0.000580	0.007196	0.000294	0.104311	0.021707	0.155350	0.013594	0.017135	0.000705	0.000147	0.000395	S 20
S 21	Other manufacturing	0.036671	0.055139	0.018542	0.030883	0.005276	0.032916	0.014640	0.015417	0.213724	0.037626	0.021268	0.038472	0.010794	S 21
S 22	Mining	0.000907	0.000896	0.000709	0.008334	0.012506	0.000656	0.000115	0.091386	0.010459	0.006204	0.000058	0.000206	0.000240	S 22
S 23	Utilities	0.005490	0.005651	0.004606	0.010957	0.009959	0.006329	0.004055	0.018674	0.010235	0.019462	0.130183	0.009383	0.019211	S 23
S 24	Selected services	0.009011	0.005088	0.004596	0.008162	0.002898	0.002727	0.001089	0.003887	0.005245	0.001784	0.001300	0.049002	0.018514	S 24
S 25	Trade and transportation	0.085190	0.084099	0.204673	0.097499	0.046678	0.049734	0.015670	0.075205	0.069031	0.037802	0.012786	0.035500	0.034738	S 25
S 26	Unallocated	0.044147	0.045434	0.061356	0.074664	0.097470	0.045133	0.011506	0.026698	0.034040	0.051858	0.085664	0.167811	0.141905	S 26

Table D-11 Continued.

Sector number	Sector title	S 11	S 14	S 15	S 16	S 17	S 18	S 19	S 20	S 21	S 22	S 23	S 24	S 25	S 26	Sector number
		Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Chem. and fert.	Petroleum	Metals & mach.	Aircraft	Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	
# 1	Meat animals and products	0.000015	0.000031	0.000025	0.000008	0.000002	0.000001	0.000000	0.000001	0.000002	0.000001	0.000001	0.000002	0.000002	0.000006	# 1
# 2	Poultry and eggs	0.000056	0.000114	0.000523	0.000056	0.000011	0.000004	0.000002	0.000004	0.000012	0.000004	0.000004	0.000009	0.000009	0.000039	# 2
# 3	Farm dairy products	0.008021	0.000650	0.000473	0.000105	0.000008	0.000604	0.000001	0.000004	0.000010	0.000004	0.000002	0.000007	0.000017	0.000011	# 3
# 4	Food and feed grains	0.002398	0.000199	0.000701	0.000066	0.000006	0.000003	0.000001	0.000003	0.000007	0.000003	0.000002	0.000005	0.000006	0.000016	# 4
# 5	Cotton	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	# 5
# 6	Vegetables	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	# 6
# 7	Fruit (excluding citrus) & nuts	0.001238	0.129989	0.020751	0.000791	0.000047	0.000016	0.000005	0.000021	0.000051	0.000018	0.000005	0.000017	0.000023	0.000028	# 7
# 8	Citrus	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	# 8
# 9	Forage	0.048340	0.001034	0.000974	0.000624	0.000330	0.000013	0.000005	0.000013	0.000043	0.000013	0.000011	0.000025	0.000030	0.000089	# 9
# 10	Miscellaneous agriculture	0.001984	0.003531	0.000624	0.000635	0.000003	0.000001	0.000000	0.000001	0.000003	0.000001	0.000001	0.000002	0.000002	0.000005	# 10
# 11	Grain mill products	0.000900	0.000146	0.000225	0.000033	0.000004	0.000002	0.000001	0.000002	0.000006	0.000002	0.000002	0.000005	0.000005	0.000022	# 11
# 12	Meat and poultry processing	0.000052	0.000107	0.000086	0.000026	0.000006	0.000002	0.000001	0.000002	0.000006	0.000002	0.000004	0.000017	0.000039	0.000026	# 12
# 13	Dairy products	0.018781	0.001522	0.000107	0.000247	0.000019	0.000009	0.000003	0.000010	0.000025	0.000009	0.000004	0.000017	0.000039	0.000026	# 13
# 14	Canning, preserving, freezing	0.000008	0.000006	0.000001	0.000000	0.000000	0.000000	0.000000	0.000001	0.000003	0.000001	0.000001	0.000002	0.000004	0.000003	# 14
# 15	Miscellaneous agri. processing	0.001756	0.000496	0.000171	0.000026	0.000002	0.000001	0.000000	0.000002	0.000006	0.000002	0.000001	0.000003	0.000004	0.000007	# 15
# 16	Chemicals and fertilizers	0.002185	0.000970	0.001541	0.000074	0.000005	0.000002	0.000001	0.000002	0.000006	0.000002	0.000001	0.000003	0.000004	0.000009	# 16
# 17	Petroleum	0.002885	0.000048	0.001408	0.000372	0.000005	0.000002	0.000001	0.000002	0.000006	0.000002	0.000001	0.000003	0.000004	0.000009	# 17
# 18	Fabricated metals and machinery	0.002995	0.006867	0.001219	0.000365	0.000005	0.000002	0.000001	0.000002	0.000006	0.000002	0.000001	0.000003	0.000004	0.000009	# 18
# 19	Aircraft and parts	0.000030	0.000062	0.000011	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	# 19
# 20	Primary metals	0.000474	0.001147	0.000203	0.000011	0.000001	0.000000	0.000000	0.000000	0.000001	0.000001	0.000001	0.000002	0.000001	0.000005	# 20
# 21	Other manufacturing	0.001485	0.004873	0.000852	0.000046	0.000003	0.000001	0.000000	0.000002	0.000006	0.000000	0.000000	0.000000	0.000000	0.000000	# 21
# 22	Mining	0.000159	0.000392	0.000070	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000000	0.000001	0.000002	0.000003	# 22
# 23	Utilities	0.000958	0.002717	0.000481	0.000027	0.000002	0.000001	0.000000	0.000001	0.000002	0.000001	0.000000	0.000001	0.000002	0.000003	# 23
# 24	Selected services	0.000892	0.002094	0.000377	0.000022	0.000002	0.000001	0.000000	0.000001	0.000002	0.000001	0.000000	0.000001	0.000002	0.000003	# 24
# 25	Trade and transportation	0.004753	0.006176	0.001241	0.000394	0.000008	0.000003	0.000001	0.000004	0.000010	0.000003	0.000002	0.000006	0.000010	0.000015	# 25
# 26	Unallocated	0.005200	0.007518	0.001445	0.000097	0.000008	0.000003	0.000001	0.000004	0.000010	0.000003	0.000002	0.000006	0.000010	0.000015	# 26

a/ Each entry shows dollars of direct plus indirect requirements for products of W. California or S. California listed at the left per dollar of final demand for products of W. California or S. California sector listed at the top.

Table D-12 continued.

Sector number	Sector title	N 20 - N 26							S 1 - S 12												Sector number
		Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	Meat animals	Poultry and eggs	sum dairy prod.	Grains	Cotton	Veg.	Fruit and nuts	Citrus	Forage	Misc. agri.	Grain mill prod.	Meat & poultry proc.	
N 1	Meat animals and products	0.000003	0.000011	0.000004	0.000004	0.000008	0.000009	0.000042	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004	0.000004	N 1
N 2	Poultry and eggs	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000000	0.000219	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000065	N 2
N 3	Farm dairy products	0.000001	0.000001	0.000000	0.000000	0.000001	0.000002	0.000001	0.000001	0.000003	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000010	0.000008	N 3
N 4	Food and feed grains	0.000358	0.001017	0.000358	0.000217	0.000485	0.000548	0.001988	0.049654	0.139045	0.028652	0.012137	0.000115	0.000071	0.000061	0.000041	0.000051	0.000074	0.087723	0.034763	N 4
N 5	Cotton	0.000013	0.000526	0.000020	0.000013	0.000022	0.000008	0.000020	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 5
N 6	Vegetables	0.000004	0.000010	0.000003	0.000001	0.000006	0.000017	0.000010	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 6
N 7	Fruit (excluding citrus) & nuts	0.000064	0.000157	0.000054	0.000015	0.000049	0.000064	0.000091	0.000222	0.000576	0.000164	0.000091	0.000052	0.000075	0.000107	0.000064	0.000048	0.000029	0.001863	0.000102	N 7
N 8	Citrus	0.000000	0.000001	0.000000	0.000000	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 8
N 9	Forage	0.000544	0.001909	0.000588	0.000544	0.001155	0.001390	0.005300	2.219609	0.025753	1.719284	0.005568	0.015540	0.007212	0.003834	0.003170	0.005030	0.121528	0.083587	0.426898	N 9
N 10	Miscellaneous agriculture	0.000247	0.001893	0.000274	0.000066	0.000178	0.000084	0.000211	0.008325	0.001183	0.006375	0.000112	0.000058	0.000028	0.000016	0.000013	0.000019	0.000441	0.000994	0.001809	N 10
N 11	Grain mill products	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000001	0.000000	0.000035	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000011	N 11
N 12	Meat and poultry processing	0.000003	0.000011	0.000004	0.000004	0.000008	0.000009	0.000043	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004	N 12
N 13	Dairy products	0.000001	0.000002	0.000001	0.000000	0.000001	0.000004	0.000002	0.000002	0.000006	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000017	0.000014	N 13
N 14	Canning, preserving, freezing	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 14
N 15	Miscellaneous agri. processing	0.000014	0.000034	0.000012	0.000003	0.000009	0.000006	0.000018	0.000003	0.000016	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002	0.000006	N 15
N 16	Chemicals and fertilizers	0.000383	0.001041	0.000418	0.000053	0.000205	0.000157	0.000105	0.000105	0.000205	0.000002	0.000002	0.000001	0.000000	0.000000	0.000000	0.000000	0.000005	0.000019	0.000029	N 16
N 17	Petroleum	0.000386	0.000273	0.000679	0.000299	0.000264	0.000581	0.000176	0.000132	0.000047	0.000101	0.000003	0.000001	0.000000	0.000000	0.000000	0.000000	0.000007	0.000023	0.000036	N 17
N 18	Fabricated metals and machinery	0.000180	0.000116	0.000154	0.000035	0.000149	0.000044	0.000026	0.000026	0.000008	0.000020	0.000001	0.000000	0.000000	0.000000	0.000000	0.000001	0.000004	0.000007	0.000007	N 18
N 19	Aircraft and parts	0.000001	0.000001	0.000000	0.000000	0.000038	0.000002	0.000004	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 19
N 20	Primary metals	0.015842	0.000355	0.000049	0.000043	0.000109	0.000033	0.000260	0.000016	0.000005	0.000012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000003	0.000004	0.000004	N 20
N 21	Other manufacturing	0.000661	0.002791	0.001049	0.000663	0.001125	0.000424	0.001038	0.000039	0.000032	0.000030	0.000001	0.000000	0.000000	0.000000	0.000000	0.000002	0.000008	0.000017	0.000017	N 21
N 22	Mining	0.007101	0.001008	0.003832	0.000067	0.000130	0.000155	0.000118	0.000018	0.000009	0.000014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000003	0.000006	0.000006	N 22
N 23	Utilities	0.002538	0.001484	0.002226	0.0067736	0.001308	0.002010	0.001494	0.000090	0.000040	0.000049	0.000002	0.000001	0.000000	0.000000	0.000000	0.000005	0.000016	0.000034	0.000034	N 23
N 24	Selected services	0.000038	0.000044	0.000022	0.000017	0.004622	0.000098	0.000000	0.000007	0.000003	0.000006	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000002	0.000002	N 24
N 25	Trade and transportation	0.000471	0.000428	0.000251	0.000103	0.000238	0.004495	0.000213	0.000025	0.000024	0.000019	0.000001	0.000000	0.000000	0.000000	0.000000	0.000001	0.000005	0.000012	0.000014	N 25
N 26	Unallocated	0.000276	0.000281	0.000328	0.000458	0.000815	0.000662	0.004931	0.000045	0.000020	0.000034	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002	0.000008	0.000014	N 26
S 1	Meat animals and products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.041808	0.000006	0.000003	0.000004	0.000003	0.000003	0.000003	0.000002	0.000001	0.000018	0.007952	S 1	
S 2	Poultry and eggs	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005589	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000011	0.000241	S 2
S 3	Farm dairy products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004	0.000009	0.028698	0.000001	0.000000	0.000001	0.000001	0.000000	0.000000	0.000000	0.000032	0.000026	S 3
S 4	Food and feed grains	0.000000	0.000001	0.000000	0.000000	0.000003	0.000000	0.000000	0.308500	0.403137	0.177641	7.721199	0.000646	0.000361	0.000273	0.000196	0.000250	0.004534	0.544422	0.76257	S 4
S 5	Cotton	0.000000	0.000000	0.000000	0.000000	0.000002	0.000000	0.000000	0.000010	0.000014	0.000007	0.000013	3.265285	0.000019	0.000022	0.000014	0.000007	0.000006	0.000026	0.000009	S 5
S 6	Vegetables	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000005	0.000010	0.000004	0.000006	0.000004	1.277822	0.000007	0.000004	0.000003	0.000002	0.000027	0.000004	S 6
S 7	Fruit (excluding citrus) & nuts	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000063	0.000136	0.000047	0.000027	0.000016	0.000022	2.021918	0.000019	0.000014	0.000008	0.000558	0.000024	S 7
S 8	Citrus	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000	0.000001	1.601713	0.000000	0.000000	0.000003	0.000000	0.000000	S 8
S 9	Forage	0.000004	0.000024	0.000004	0.000001	0.000012	0.000002	0.000004	2.540078	0.025758	1.967571	0.006312	0.011762	0.008224	0.004348	0.003604	14.892788	0.139075	0.094056	0.485931	S 9
S 10	Miscellaneous agriculture	0.000036	0.000261	0.000044	0.000010	0.000040	0.000013	0.000032	0.024645	0.004458	0.022717	0.068766	0.192468	0.087988	0.045018	0.037957	0.061089	1.523868	0.007544	0.005082	S 10
S 11	Grain mill products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000248	0.000666	0.000185	0.000004	0.000000	0.000001	0.000000	0.000000	0.000003	0.000003	0.002461	0.000076	S 11
S 12	Meat and poultry processing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000006	0.000017	0.000005	0.000007	0.000004	0.000004	0.000005	0.000003	0.000002	0.000029	0.012734	0.000000	S 12
S 13	Dairy products	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000007	0.000017	0.000005	0.000001	0.000000	0.000001	0.000001	0.000001	0.000001	0.000000	0.000000	0.000049	S 13
S 14	Canning, preserving, freezing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	S 14
S 15	Miscellaneous agri. processing	0.000000	0.000000	0.000000	0.000000	0.0															

Table D-12 continued.

Sector number	Sector title	8 13	8 14	8 15	8 16	8 17	8 18	8 19	8 20	8 21	8 22	8 23	8 24	8 25	8 26	Sector number
		Dairy prod.	Canning, preserving, freezing	Misc. agri. proc.	Fruit and nuts	Petroleum	Metals & mach.	Aircraft	Primary metals	Other mfg.	Mining	Utilities	Selected services	Trade and trans.	Unallocated	
N 1	Meat animals and products	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 1
N 2	Poultry and eggs	0.000000	0.000001	0.000003	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 2
N 3	Farm dairy products	0.000225	0.000018	0.000013	0.000003	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 3
N 4	Food and feed grains	0.018314	0.001520	0.005359	0.000507	0.000049	0.000020	0.000007	0.000021	0.000014	0.000021	0.000015	0.000035	0.000043	0.000121	N 4
N 5	Cotton	0.000001	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 5
N 6	Vegetables	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 6
N 7	Fruit (excluding citrus) & nuts	0.002304	0.262822	0.041956	0.001600	0.000095	0.000033	0.000010	0.000043	0.000016	0.000016	0.000010	0.000035	0.000046	0.000056	N 7
N 8	Citrus	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 8
N 9	Forage	0.719604	0.015668	0.014536	0.003835	0.000449	0.000195	0.000069	0.000197	0.000044	0.000198	0.000160	0.000371	0.000447	0.001324	N 9
N 10	Miscellaneous agriculture	0.002909	0.005178	0.004915	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 10
N 11	Grain mill products	0.000002	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 11
N 12	Meat and poultry processing	0.000001	0.000001	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 12
N 13	Dairy products	0.000380	0.000031	0.000022	0.000005	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 13
N 14	Canning, preserving, freezing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 14
N 15	Miscellaneous agri. processing	0.000025	0.000007	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 15
N 16	Chemicals and fertilizers	0.000048	0.000201	0.000034	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 16
N 17	Petroleum	0.000050	0.000139	0.000024	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 17
N 18	Fabricated metals and machinery	0.000010	0.000022	0.000004	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 18
N 19	Aircraft and parts	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 19
N 20	Primary metals	0.000006	0.000015	0.000003	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 20
N 21	Other manufacturing	0.000034	0.000111	0.000019	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 21
N 22	Mining	0.000009	0.000023	0.000004	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 22
N 23	Utilities	0.000054	0.000193	0.000027	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 23
N 24	Selected services	0.000004	0.000009	0.000002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 24
N 25	Trade and transportation	0.000020	0.000027	0.000005	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 25
N 26	Unallocated	0.000022	0.000032	0.000006	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	N 26
S 1	Meat animals and products	0.000008	0.000053	0.000076	0.000025	0.000006	0.000002	0.000001	0.000002	0.000007	0.000002	0.000002	0.000005	0.000005	0.000022	S 1
S 2	Poultry and eggs	0.000001	0.000002	0.000009	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	S 2
S 3	Farm dairy products	0.011495	0.000059	0.000043	0.000010	0.000001	0.000000	0.000000	0.000000	0.000001	0.000000	0.000000	0.000001	0.000002	0.000001	S 3
S 4	Food and feed grains	0.072808	0.003864	0.025335	0.001999	0.000143	0.000055	0.000018	0.000061	0.000162	0.000039	0.000032	0.000077	0.000079	0.000249	S 4
S 5	Cotton	0.000029	0.000042	0.000018	0.000028	0.000015	0.000028	0.000014	0.000019	0.000058	0.000028	0.000017	0.000032	0.000012	0.000028	S 5
S 6	Vegetables	0.000036	0.137335	0.000038	0.000082	0.000007	0.000003	0.000001	0.000004	0.000011	0.000003	0.000002	0.000007	0.000017	0.000011	S 6
S 7	Fruit (excluding citrus) & nuts	0.000725	0.078973	0.012605	0.000478	0.000028	0.000010	0.000003	0.000013	0.000031	0.000011	0.000003	0.000011	0.000014	0.000017	S 7
S 8	Citrus	0.000004	0.015668	0.000016	0.000009	0.000001	0.000000	0.000000	0.000000	0.000001	0.000000	0.000000	0.000000	0.000002	0.000001	S 8
S 9	Forage	0.788960	0.013921	0.014218	0.003882	0.000469	0.000203	0.000071	0.000202	0.000680	0.000287	0.000171	0.000385	0.000429	0.001429	S 9
S 10	Miscellaneous agriculture	0.011992	0.068673	0.043187	0.016160	0.000727	0.000324	0.000112	0.000347	0.002241	0.000370	0.000093	0.000261	0.000104	0.000236	S 10
S 11	Grain mill products	0.000079	0.000012	0.000007	0.000007	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	S 11
S 12	Meat and poultry processing	0.000012	0.000005	0.000012	0.000004	0.000000	0.000000	0.000001	0.000004	0.000010	0.000004	0.000004	0.000004	0.000008	0.000003	S 12
S 13	Dairy products	0.021593	0.000110	0.000081	0.000018	0.000001	0.000001	0.000000	0.000001	0.000002	0.000001	0.000000	0.000001	0.000001	0.000001	S 13
S 14	Canning, preserving, freezing	0.000003	0.010382	0.000041	0.000006	0.000001	0.000000	0.000000	0.000000	0.000001	0.000000	0.000000	0.000001	0.000003	0.000001	S 14
S 15	Miscellaneous agri. processing	0.000050	0.000057	0.014871	0.000434	0.000026	0.000008	0.000003	0.000011	0.000026	0.000009	0.000002	0.000007	0.000001	0.000005	S 15
S 16	Chemicals and fertilizers	0.000048	0.000088	0.000070	0.000000	0.000159	0.000027	0.000129	0.000498	0.001289	0.000599	0.000074	0.000284	0.000091	0.000266	S 16
S 17	Petroleum	0.000349	0.000436	0.000187	0.000136	0.000197	0.000105	0.000022	0.000294	0.000687	0.000292	0.000290	0.000586	0.000185	0.000185	S 17
S 18	Fabricated metals and machinery	0.000096	0.000533	0.000118	0.000134	0.000177	0.000404	0.000308	0.000263	0.000168	0.000211	0.000047	0.000245	0.000047	0.000047	S 18
S 19	Aircraft and parts	0.000010	0.000010	0.000008	0.000010	0.000010	0.000018	0.000018	0.000176	0.000072	0.000065	0.000004	0.000018	0.000018	0.000018	S 19
S 20	Primary metals	0.000028	0.000119	0.000033	0.000009	0.000047	0.000077	0.000223	0.000596	0.000142	0.000159	0.000018	0.000018	0.000018	0.000018	S 20
S 21	Other manufacturing	0.000185	0.000263	0.000114	0.000178	0.000091	0.000175	0.000085	0.000120	0.000302	0.000174	0.000106	0.000201	0.000074	0.000174	S 21
S 22	Mining	0.000199	0.000335	0.000164	0.000053	0.000159	0.000109	0.000328	0.007669	0.001088	0.000174	0.000106	0.000201	0.000074	0.000174	S 22
S 23	Utilities	0.000989	0.000962	0.000859	0.001353	0.001664	0.001000	0.000534	0.002068	0.001201	0.001664	0.000725	0.004462	0.000104	0.000084	S 23
S 24	Selected services	0.000081	0.000060	0.000059	0.000076	0.000055	0.000036	0.000015	0.000044	0.000050	0.000025	0.000019	0.000079	0.000079	0.000079	S 24
S 25	Trade and transportation	0.000674	0.000566	0.001055	0.000655	0.000482	0.000386	0.000146	0.000527	0.000700	0.000249	0.000109	0.000279	0.000430	0.000230	S 25
S 26	Unallocated	0.000509	0.000483	0.000569	0.000652	0.001046	0.000412	0.000143	0.000367	0.000367	0.000406	0.000336	0.001018	0.000805	0.000595	S 26
TOTAL		1.656784	0.620433	0.1780												