GEORGIA INSTITUTE OF TECHNOLOGY

OFFICE OF RESEARCH ADMINISTRATION

Date: 3 August 1967

RESEARCH PROJECT INITIATION

Project Title: Regional Industrial Development (Project 1 - Parks)

Project No.: B-1701

Project Director: Dr. W. A. Schaffer

Sponsor: Economic Development Administration

Agreement Period: From 1 June 1967 until 31 June 1969

Type Agreement: Grant No. OER 163-G-67-13

Amount: $8,823 EDA Funds (B-1701)
6,233 GIT Contribution (E-1705)
$15,056 Total Budget for Period 1Jun67-30Jun68

Grant Administrator

Dr. Anthony H. Pascal, Director
Office of Economic Research
Economic Development Administration
U. S. Department of Commerce
Washington, D. C. 20230

Reports Required

Quarterly Progress - In duplicate, within 30 days after end of each quarter

Final - Six copies, within 45 days after the termination of the project

Assigned to: School of Industrial Management

COPIES TO:

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Other: Mr. R. A. Martin
B-1701

A-3 (4/65)

GEORGIA INSTITUTE OF TECHNOLOGY

OFFICE OF RESEARCH ADMINISTRATION

RESEARCH PROJECT TERMINATION

Date: May 26, 1971

Project Title: Regional Industrial Development (Projects 1-5)

Project No.: B-1701-05

Principal Investigator: Dr. W. A. Schaffer

Sponsor: Economic Development Administration

Effective Termination Date: June 30, 1970

Clearance of Accounting Charges: All charges have cleared.

Grant/Contract Closeout Actions Remaining:

Assigned to: School of Industrial Management

COPIES TO:

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RA—4 (2—71)

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QUARTERLY PROGRESS REPORT #1

on

A Program of Research and Training in
Regional Industrial Development

June 1 to September 30, 1967

Project No. OER 163-G-67-13 Georgia Institute of Technology

Work supported by the Office of Economic Research through Grant OER 163-G-67-13 to the Georgia Institute of Technology commenced in the Summer quarter, 1967. Two projects were activated: (1) plans were tentatively formed for several cases in industrial development to be investigated in the Fall quarter, 1967, and (2) A Conference on Education in Regional Development was planned and conducted, September 14-16, 1967. The following paragraphs outline the status of the project on cases in industrial development, the conference program and conclusions, and tentative plans.

I. Cases in Industrial Development.

This project was initiated during the summer to run over the entire grant period of two years. William A. Schaffer, principal investigator, developed a tentative list of cases for the project and established a working relationship with the Industrial Development Division (IDD) of Georgia Tech. The Division has agreed to make both work space and their reference library available for the use of our graduate research assistants. In addition, the Division has tentatively agreed to permit one staff member, now a part-time graduate student, to be employed as a graduate research assistant during the year. This will bring the number of research assistants investigating cases to three and will provide more knowledgeable access to the Division's

files and resource materials.

We have selected two projects to undertake in the Fall quarter, a period during which we will be experimenting with case format and design. The first is an analysis of IDD's involvement in the Atlanta tin can market around 1960. The Division was instrumental in bringing the American Can Company and the Crown Cork and Seal Company to the city. This action provides a classic example of planned development activity. In addition, it shows promise as an excellent illustration of the theory of spatial competition.

The second case involves the effect of a use tax on the location of synthetic fiber plants in the Southeast. Prior to its recent reduction, the use tax appears to have forced the location of synthetic fiber plants around the boundaries of the state even though Georgia's carpet industry provides a prime fiber market. Since the reduction of the tax, however, a fiber plant has located within the state and others are expected to enter local production soon. This case should be a prime illustration of the impact of government action on plant location. At the same time, it will demonstrate a sensitivity to geographic costs among industrialists.

Other case projects which show excellent potential in illustrating principles of regional location and industrial development have been identified (a list is available on request) and will be investigated as time and staff permit (see section III). All cases will be circulated in working paper form as they are completed.

II. A Conference on Education in Regional Development.

This conference, convened on September 14-16, was attended by over 30 participants from colleges and universities around the Southeast. The program, a list of participants, and the evaluation form are attached to this report.

Initially, we had planned to conduct a one-week seminar, but the press of time made this impractical. Instead, we organized this conference specifically around problems in industrial location. A conference later during the academic year on regional economics will complete the package and provide the base for a set of one-week combined conferences next summer.

Our objective, as outlined in the original proposal, was to promote an interest in introducing regional economics into undergraduate courses through the use of examples and illustrations relating to regional problems. Although its content was rough in spots and occasionally above the heads of many participants, we were satisfied with the conference. It was generally regarded as a success, as indicated by comments from the participants and speakers. These comments will be available in summary form sometime during the Fall quarter and will be the basis for our conference program for the remainder of the year.

Generally, we plan to initiate a series of short conferences around particular speakers for educators within commuting distance and to conduct one more three-day program in the Spring, 1968. The longer program will be oriented around regional economic models and will include both instructional material and new empirical work. The experience acquired in planning and presenting material in this conference series will provide a base for our more detailed and lengthy session in the Summer of 1968.

III. Tentative Plans.

Due to a late start during the summer, not only were we unable to initiate a complete summer conference program but we were also unable to adequately staff our project on cases in industrial development for the coming year. As a consequence, we request that the funds allocated but not spent during the quarter be made available later during the duration of

of the grant. This delay will permit payment of expenses incurred but not settled during the summer and will allow for adequate financing of our revised conference plans for the year. In addition, it will enable us to more adequately staff our research and training programs.

During the Fall quarter four of the five projects in our program will be active, as follows:

1. Labor Markets and Substitution of Capital and Location--Dr. Fred A. Tarpley is on one-quarter time while planning and initiating his study.
2. Program Budgeting Systems and Econometric Simulations for States and Small Areas--Dr. Kong Chu is on one-half time along with one graduate assistant.
3. Cases in Industrial Development--Dr. William A. Schaffer is on one-quarter time with three graduate assistants. One assistant is helping Mr. John Kaatz with computations for a paper to be presented at the Regional Science Association Meeting in November. The other two are investigating their own projects.
4. Regional Development Program for Educators--Dr. Schaffer is continuing his evaluation of the September conference and planning future conferences.

The remaining project, The Role of Research Complexes in Area Economic Development, will be activated in the Winter quarter.

Respectfully submitted,

Sherman F. Dallas
Director, School of Industrial Management

William A. Schaffer
Program Director

October 16, 1967

A CONFERENCE ON EDUCATION IN REGIONAL DEVELOPMENT
Georgia Institute of Technology
September 14-16, 1967

Thursday, September 14

2:00 pm Introduction and Orientation -- Sherman F. Dallas and William A. Schaffer, Georgia Tech

2:30 pm The Economic Development Administration: Its Objectives, Resources, and the Role of Colleges in Regional Development -- Robert T. Miki, Economic Development Administration

4:00 pm Break

4:15 pm Entrepreneurial History and Regional Development -- Glenn Gilman, Georgia Tech

5:30 pm End of Day's program

Friday, September 15

9:00 am Location and Economic Theory -- Hugh Nourse, University of Illinois

10:15 am Break

10:30 am Location and Economic Theory, continued

12:00 Lunch

1:30 pm Location Theory and Public Finance -- Charles Goetz, Virginia Polytechnic Institute

3:00 pm Break

3:15 pm The Introduction of Spatial and Regional Material into Economics Courses, a Discussion Based on Cases and Examples -- Nourse, Goetz, Schaffer, and others

5:15 pm End of day's program

6:30 pm Dinner: The Negro Entrepreneur and Education in the South -- James Hund, Emory University

Saturday, September 16

9:00 am The Place of "Region" in Economics -- Benjamin Stevens, University of Pennsylvania

10:15 am Break

10:30 am Current Research and Sources of Information on Regional Development -- Benjamin Stevens

12:00 Lunch and adjournment

(Note: All seminar meetings will be held in the Wilby Room, Georgia Tech Library.)

A CONFERENCE ON EDUCATION IN REGIONAL DEVELOPMENT

Georgia Institute of Technology

September 14-16, 1967

Participants

Mr. Arnold L. Addington
Department of Economics
East Tennessee State University
Johnson City, Tennessee 37601

Dr. Sarvan K. Bhatia
Department of Business Administration
Armstrong State College
Savannah, Georgia 31406

Dr. Jack Blicksilver
Department of Economics
Georgia State College
33 Gilmer Street, S.E.
Atlanta, Georgia

Dr. Gerald E. Breger
Urban Affairs Center
University of South Carolina
Columbia, South Carolina

Dr. J. G. Bryson
Department of Business Administration
North Georgia College
Dahlonega, Georgia

Dr. J. Fred Burgess
Business - Economics Division
Columbus College
Columbus, Georgia 31907

Mr. Johnny Campbell, Jr.
Department of Economics
Box 342
Savannah State College
Savannah, Georgia 31404

Mr. Lon Carnes
Department of Finance
Georgia Southern College
Statesboro, Georgia

Mr. Anthony J. Catanese
City Planning Program
Georgia Institute of Technology
Atlanta, Georgia 30332

Dr. E. D. Chastain, Jr.
School of Business
Auburn University
Auburn, Alabama 36830

Dr. Kong Chu
School of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

Mr. Frank J. Clarke
Industrial Development Division
Georgia Institute of Technology
Atlanta, Georgia 30332

Mr. Jerry L. Dake
School of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

Mr. Richard L. Fuller
Department of Business Administration
Georgia College at Milledgeville
Milledgeville, Georgia 31061

Mr. Paul K. Gatons
Department of Economics
Georgia State College
Atlanta, Georgia 30303

Mr. Thomas P. Glanton
Industrial Development Division
Georgia Institute of Technology
Atlanta, Georgia 30332

Dr. Hugh Kenneth Himan
School of Business Administration
Wake Forest University
Winston-Salem, North Carolina

Mr. Joseph Jones
Economic Development Center
Graduate School of Business
Administration
Atlanta University
Atlanta, Georgia 30314

Mr. Gilbert Jowers
Division of Business and Economics
The Fort Valley State College
Fort Valley, Georgia 31030

Dr. John P. Kaatz
School of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

Dr. B. K. Kiker
Department of Economics
University of South Carolina
Columbia, South Carolina

Dr. David F. Lewis
Department of Business Administration-
Economics
Valdosta State College
Valdosta, Georgia

Dr. Gilbert L. Mathis
Department of Economics
Murray State University
Murray, Kentucky

Dr. Joseph W. McLeary
Research Department
Federal Reserve Bank of Atlanta
Atlanta, Georgia

Dr. J. Mark Miller
Department of Business Administration
West Georgia College
Carrollton, Georgia

Dr. S. O. Park
Department of Industrial Management
Clemson University
Clemson, South Carolina 29631

Dr. Beverly K. Schaffer
School of Business Administration
Emory University
Atlanta, Georgia 30322

Dr. William O. Shropshire
School of Business Administration
Emory University
Atlanta, Georgia 30322

Dr. Fred A. Tarpley
School of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

Dr. Ralph Traxler
School of Business Administration
University of South Alabama
Mobile, Alabama

Dr. Clinton H. Whitehurst
Department of Industrial Management
Clemson University
Clemson, South Carolina 29631

Dr. W. Tate Whitman
School of Business Administration
Emory University
Atlanta, Georgia 30322

Mr. Robert R. Wyand, II
Federal Reserve Bank of Atlanta
Atlanta, Georgia

Speakers and Discussion Leaders

Dr. Sherman F. Dallas, Director
School of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

Dr. Glenn Gilman, Regent's Professor
School of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

Dr. Charles J. Goetz, Assistant Professor
Department of Economics
Virginia Polytechnic Institute
Blacksburg, Virginia 24061

Dr. James M. Hund, Dean
School of Business Administration
Emory University
Atlanta, Georgia 30322

Dr. Robert T. Miki, Deputy to the Director
Office of Economic Research
Economic Development Administration
U. S. Department of Commerce
Washington, D. C. 20230

Dr. Hugh O. Nourse, Associate Professor
Department of Economics
University of Illinois
Urbana, Illinois 61801

Dr. William A. Schaffer, Associate Professor
School of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

Student Assistants

Mr. H. Ray McPhail

Mr. Paul W. Speicher

Mr. Gary W. Webster

A CONFERENCE ON EDUCATION IN REGIONAL DEVELOPMENT
GEORGIA INSTITUTE OF TECHNOLOGY
SEPTEMBER 14-16, 1967

Evaluation and Recommendations Form

1. Were the physical arrangements satisfactory? (motel, meals, meeting facilities, etc.) Suggestions?

_____

_____

2. Do you feel the objectives of the conference were met? If not, why?

_____

_____

3. Of what value was the conference to you?

_____

_____

_____

_____

4. How would you restructure this particular conference for maximum effectiveness? (Please comment on content, form of presentation, instructional materials, timing of sessions, etc.)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

5. Would you recommend a conference of this type for other members of your faculty?

Yes _____ No _____

6. Would you come again to A Conference on Regional Economic Models (of about the same duration).

Yes _____ No _____

If yes, what time of week would you prefer? _____

And what time of the school year? _____

_____

What format would you prefer?

_____ Instructional lectures
_____ New research presentations
_____ Instruction and new material
_____ Instruction and workshop sessions

Comments? _____

_____

_____

7. Would you come to (or recommend) a 5-day instructional conference during the summer?

Yes _____ No _____

If yes, which weeks during the summer would be most convenient?

1st choice _____

2nd choice _____

3rd choice _____

Please comment on your preferences as to organization, content, type of session, etc. for this longer conference.

_____

_____

_____

_____

8. Other comments and suggestions _____

_____

_____

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QUARTERLY PROGRESS REPORT #2

on

A Program of Research and Training in
Regional Industrial Development

October 1 to December 31, 1967

Project No. OER 163-G-67-13 Georgia Institute of Technology

Work supported by the Office of Economic Research through Grant OER 163-G-67-13 to the Georgia Institute of Technology continued in the fall quarter, 1967. Four projects were active:

1) a study of decentralization of industry to meet urban labor shortages was activated, with the fall quarter being devoted to research design and literature search;

2) a study of program budgeting systems and econometric simulations for states and small areas began with the outlining of a basic series of models to be investigated for implementation;

3) the project on cases on industrial development remained in progress; and

4) the evaluation and planning of the series of regional development program for educators continued.

The following paragraphs outline the status of these projects.

I. A study of Decentralization to Meet Urban Labor Shortages.

This project was initiated during the fall quarter to run through the summer of 1968. Fred A. Tarpley, Jr., principal investigator, commenced a literature search with the aid of a graduate research assistant. They have concentrated on sources concerned with migration patterns and central

place theory and on literature dealing especially with the female in the labor market.

With the immediate objective of a case study involving operations of the Southern Bell Telephone and Telegraph Company, the study is now in the research design phase. Data needs are being formulated and some preliminary inquiries have been made as to sources of information.

Arrangements have been made to present a paper on preliminary findings at the Southeastern Regional Science Association Meetings, April 18-19, 1968. Actual data collection and analysis should commence late in the coming quarter.

II. Program Budgeting Systems and Econometric Simulation for States and Local Areas.

This project commenced during the fall quarter to run through the remainder of the grant period. Kong Chu, principal investigator, has outlined his approach to the project and has written drafts of two papers on computer simulations and models. One, "Computer Simulation for Regional Economic Planning," will be presented at the Western Regional Science Association meeting in San Diego, February 4, 1968. The other, "A Computer Model for Evaluating Regional Economic Programs," outlines a simplified model for possible implementation using rough data for the Atlanta region. Both papers are in rough draft form for internal circulation and revision.

Generally, Chu plans to investigate four kinds of models for their usefulness in evaluating and planning regional development: 1) modified input-output models, 2) linear programming decision models, 3) econometric models, and 4) computer simulation models. He has formulated a general plan of attack and will devote the winter quarter to investigating regional

variations of the first two categories while supervising the estimation of parameters from Atlanta data for his simple simulation model.

Tentative arrangements have been made for Kong Chu and William A. Schaffer to present a paper on "A Dynamic Regional Model for Program Budgeting" at the April meeting of the Southeastern Regional Science Association.

III. Cases in Industrial Development.

Under the supervision of William A. Schaffer, principal investigator, examination of two potential cases was initiated by graduate research assistants. Both efforts have lead to rough drafts and are being continued into the winter quarter. One case attempts to illustrate duopolistic competition over space with recent movements of tin can manufacturers into the Atlanta area. The historical movements and an initial investigation indicate that the case can be expanded to be of general significance and that it will be a useful addition to our file of illustrations for the summer program for educators.

The other case analyzes the impact of Georgia's use tax on the location of synthetic fiber plants in the Southeast. It also will be of use in the summer program and investigation has been continued into the winter quarter in an attempt to make it a sound and publishable document.

Under this project Schaffer also offered a seminar on Research Methods in Industrial Development (I.M. 606 in the Graduate Catalogue of Georgia Tech). Two outside speakers were used: Mr. David L. Holmes of the Department of English at William and Mary College presented a three-hour lecture and discussion of report construction and writing techniques, and Mr. William C. Eisenhauer, head of the market analysis section of the Industrial Development Division at Georgia Tech, conducted three sessions

on feasibility studies. Each of the fifteen participants wrote and presented papers on some topic related to plant location or regional development. Some of their initial efforts may be expanded as cases by the three students in our industrial development program. Generally, the course was a success and, on the basis of this experience, we will be able to offer an improved course next fall.

Partially supported under this project, John R. Kaatz presented a paper at one of the Ph.D thesis sessions of the Regional Science Association Meeting, November 3-5, 1967. The paper, entitled "Plant Scale Requirements for Viable Economic Development: The Delta County, Mighigan, Case," was based on his dissertation in progress at Wayne State University (Wilbur Thompson, supervisor) and is being revised during the winter quarter as a working paper to be reviewed for publication.

IV. Regional Development Program for Educators.

No conferences were conducted during the fall and our efforts were devoted to formulating tentative plans for a second conference in the spring quarter.

Forms evaluating our summer program, A Conference on Regional Development for Educators, have been received from most of the participants. Their comments have been collected and will be the basis for organizing next summer's conferences.

Planning for a second conference around the first weekend in May has commenced. This conference will emphasize models of regions and of regional growth and will provide an introduction to regional economics for our participants (mostly instructors from small colleges in the Southeast), who, generally, have had little contact with regional economics. Tentatively we plan to conduct a one-day instructional seminar (Thursday)

for those participants who have no familiarity with regional models. These sessions will be conducted by members of our staff. Then sessions on Friday and Saturday will be devoted to discussions of the introduction of regional illustrations into undergraduate courses and to seminars on current work with regional models. Seminar leaders from other institutions will be invited to present papers at these sessions.

V. General Comments.

In the fall of 1967 the School of Industrial Management formally launched a concentration in Industrial Development and Regional Economics in its Master of Science program (see the description attached to our original proposal). We have three students in the program, two of whom are full graduate research assistants in the E.D.A. project. Three other graduate students in our regular degree program have been employed as general assistants to the project.

We are actively recruiting students for our academic program and anticipate an increased enrollment next year. We would like to use the money allocated for research assistance in our budget estimates but not spent this year to support students in next year's enrollment. Although this delays some of our work on cases in industrial development, it will permit us to offer a competitive program in regional development. We will submit a revised budget during the coming quarter to account for this reallocation of expenditures.

Respectfully submitted,

Sherman F. Dallas
Director, School of Industrial Management

William A. Schaffer
Program Director

January 19, 1968

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QUARTERLY PROGRESS REPORT #3

on

A Program of Research and Training in
Regional Industrial Development

January 1 to March 31,1968

Project No. OER 163-G-67-13 Georgia Institute of Technology

Work supported by the Office of Economic Research through Grant OER 163-G-67-13 to the Georgia Institute of Technology continued in the winter quarter, 1968. All five projects as outlined in the original proposal were in progress during this quarter, as follows:

1) a study of the impact of research complexes on economic development in the surrounding area was activated, this quarter being devoted to study design and a literature search;

2) the study of decentralization of industry to meet urban labor shortages continued, and a paper describing it was outlined for presentation at the spring meeting of the Southeastern Regional Science Association;

3) the study of program budgeting systems and econometric simulations for states and small areas has resulted in two papers to be presented at conferences;

4) the project on cases in industrial development added two new studies to its collection;

5) the planning for the series of regional development programs for educators continued with final arrangements for three conferences to be held midway through next quarter; and

6) in addition, the program has supported 7 graduate research assistants over the quarter and has led to the offering of one course on regional development in the fall quarter, one in the winter quarter, and two in the spring quarter of this academic year.

The progress of these projects is described in more detail below.

I. The Role of Research Complexes and Their Impact on Area Development: A Study of Entrepreneurial Stimulation.

This project was initiated this quarter to run through summer, 1968. Principal investigator Glenn Gilman compiled a list of pertinent literature and selected specific factors to investigate; he participated as well in the EDA Research Conference in February.

In addition to the project bibliography, a set of definitions bounding the research has been created; the project itself has been redefined as a study of the technology transfer occurring between research complexes and their host communities. Ten specific targets have been chosen for investigation, including characteristics of the entrepreneurial activity, the development agencies, and the tenant policies involved in the research complexes to be studied.

In February, Dr. Gilman participated in the EDA Research Conference in Washington by discussing a paper presented by Guy Gordon on "Entrepreneurship and Community Organization." Gilman's comments have been reproduced as a discussion paper for local use; a copy is attached.

II. Decentralization of Industry to Meet Urban Labor Shortages.

This study traces the effect of technological advances on the location of industry, with the telephone industry serving as the focus and with Southern Bell as the expected data source. Fred A. Tarpley, Jr., principal

investigator, has proposed several hypotheses, the primary one being that the chronic shortage of telephone operators can be and is being alleviated by moving work stations away from downtown locations.

Resulting from this investigation, a discussion entitled "Technology, Labor Markets and Locations" is being prepared for the Southeastern Regional Science Association Meeting at Knoxville, Tennessee, in April. An abstract is attached.

III. Program Budgeting Systems and Econometric Simulation for States and Local Areas.

This quarter was devoted to investigating regional variations of input-output and linear programming models to determine their usefulness in planning regional development. Principal investigator Kong Chu presented a paper entitled "Computer Simulation for Regional Economic Planning" at the Western Regional Science Association meeting in Dan Diego in February; a copy of this paper is attached.

Chu and William A. Schaffer have prepared a paper on "Regional Models and Program Budgeting" to be presented at the April meeting of the Southeastern Regional Science Association. A copy is attached.

IV. Cases in Industrial Development.

Under the supervision of William A. Schaffer, principal investigator, papers from the two cases begun in the fall by graduate research assistants are being reviewed and readied for circulation during the spring quarter. The paper using the tin can industry in Atlanta to illustrate oligopolistic spatial competition is still inadequate for circulation and will be revised during the next quarter.

The other paper, which deals with the hypothesis that Georgia's sales and use tax has been a deterrent to the location of synthetic-fiber plants in the state, has been received and is being prepared for circulation as a local discussion paper. This study has given rise to a second which will examine the other factors affecting the location of synthetic-fiber plants, in an attempt to more adequately explain the location pattern taken by this industry in the Southeast. A paper from this second study will use these findings to explain the obvious lack of production facilities in Georgia until recently.

Two new studies have been initiated this quarter. Under Schaffer's supervision, a computer program using the location quotient method to estimate economic-base multipliers has been written and tested against Atlanta employment data. A class in regional economics will further test this program against data for SMSA's in the Southeast during the spring quarter. This program will be used as an instructional device during our two summer conferences on Education in Regional Development.

A procedure for simulating a regional input-output table based on the 1958 Interindustry Transactions Table and local employment data has been devised by Schaffer and Chu and is being programmed by a student assistant during the spring quarter. The program (the RIOT Simulator) will be tested against Atlanta data and the results used as a teaching device in our graduate course in regional economics this spring. If this test is favorable, the program will be used to provide instructional material for our summer conferences and to stimulate widespread interest in regional models among instructors in Southeastern colleges. A draft outline for this simulator is attached.

V. Regional Development Program for Educators.

Plans were made this quarter to conduct a short conference and several seminars in the spring quarter.

1) Input-Output Seminar, May 1. We are organizing and promoting this seminar in cooperation with the Atlanta Field Office of the U.S. Department of Commerce. Although it will be attended (and paid for) by local business executives, this seminar will include a presentation of our simulated regional input-output model of Atlanta for discussion and criticism. Copies of the invitation to and program for this seminar are attached.

2) Conference on Regional Economics, May 2-4. Our series on education in regional development commenced in the fall with a program stressing location; this second conference will emphasize regional models. It will include two half-day sessions each of elementary instruction and of reports by outside speakers on current regional research. We are attempting to staff the sessions with potential instructors for our summer conferences. Copies of the invitation and tentative program are attached.

3) Plant Location Seminar, May 6. We are arranging for a seminar on plant location which will feature a speaker from the Ford Motor Company (sent at their expense). The speaker will discuss the techniques used by Ford to select plant sites, the response of Ford to economic forces, and the patterns of industrial activity which develop around Ford plants. A copy of our announcement is enclosed.

VI. Training in Regional Industrial Development.

This grant has made possible the direct support of 7 graduate research assistants. Three of these are enrolled in the Industrial Development and Regional Economics Program leading to the Master of Science degree, and are working on our Project IV (cases in Industrial Development). The other four

students are enrolled in the Master's degree program in Industrial Management and are assigned to the research projects as needed. These students have been supported over the school year and will be seeking employment between September 1968, and April, 1969.

Several courses have been conducted as a direct result of grant resources. These include the following:

1) Fall quarter: I.M. 606 (Graduate), Research Methods in Development, W. A. Schaffer, 16 students enrolled.

2) Winter quarter: I.M. 495 (undergraduate), Economics of Industrial Location, John R. Kaatz, 14 students enrolled.

3) To be offered spring quarter: I.M. 602, Regional Economics, Schaffer. I.M. 604 (496), Developmental Finance, Kaatz.

Outlines for the courses offered in the fall and winter quarters are attached.

Respectfully submitted,

Sherman F. Dallas
Director, School of Industrial Management

William A. Schaffer
Program Director

April 26, 1968

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A PROGRAM OF RESEARCH AND TRAINING IN REGIONAL INDUSTRIAL DEVELOPMENT

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Quarterly Progress Report

Covering the Period

January 1 to March 31, 1970

Project OER-163-G-67-13

Office of Economic Research
Economic Development Administration
U.S. Department of Commerce

College of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

A PROGRAM OF RESEARCH AND TRAINING IN REGIONAL INDUSTRIAL DEVELOPMENT

Quarterly Progress Report

Covering the Period

January 1 to March 31, 1970

Project OER-163-G-67-13

Office of Economic Research
Economic Development Administration
U.S. Department of Commerce

College of Industrial Management
Georgia Institute of Technology
Atlanta, Georgia 30332

QUARTERLY PROGRESS REPORT

on

A Program of Research and Training in
Regional Industrial Development

January 1 to March 31, 1970

Project OER-163-G-67-13 Georgia Institute of Technology

I. Summary

Work supported by the Office of Economic Research through Grant OER-163-G-67-13 to the Georgia Institute of Technology continued in the winter quarter, 1970. This report outlines progress made over the winter quarter as follows:

1) A paper entitled "Estimating Regional Input-Output Coefficients" was drafted and is under editorial consideration. This paper reviews modified survey techniques and is a byproduct of our nonsurvey programs for constructing input-output tables. Unavailability of detailed computer tapes of the 1963 national input-output study has delayed completion of our user's manual for these programs.

2) A paper on "Education in Regional Economics" was drafted to be presented at the 1970 meeting of the Southeastern Regional Science Association. This paper reviews our recent surveys of course offerings in the U.S. and the Southeast.

3) A case study entitled "A Location Study for an Aluminum Reduction Plant" has been completed. It provides a clear and detailed review of the factors leading to the construction by a Georgia firm of a plant in Kentucky. The paper is still under local review.

4) Training in regional development during the winter quarter involved two students as research assistants and three students in the master of science program.

II. Project Reports

A. Simulating Regional Interindustry Models.

Delay in the Office of Business Economics in producing computer tapes of the 1963 national input-output study in 370-industry detail has thwarted our efforts to produce an up-to-date simulator of regional interindustry models. When this tape is available, links between it and existing programs will be established and a manual of instructions will be made available for potential users. Meanwhile, we continue to refine various parts of the procedures. For fear of not completing the program package by the end of our grant period, we have started coding the printed versions of the detailed national input-output study for transfer to punch cards.

But the major project for the quarter has been the testing of "semisurvey" methods for producing regional interindustry models. In an article in the Southern Economic Journal (XXXVI-3, January 1970), Teddy T. Su suggests what we have called the "imports-only" method. This method estimates regional coefficients by subtracting a survey-based imports matrix from a technical-coefficients matrix based on an aggregated national transactions table. We suggest a simpler procedure which we call the "exports-only" method. Our earlier experiments involving the 1963 input-output study of the state of Washington provided the data needed for quick tests of these two procedures. We were able to show that, with less survey-based data, the exports-only method is a superior method for constructing inexpensive regional models with a minimum survey effort. A copy of our paper is attached.

B. Survey of Courses in Regional Economics.

In preparation for the April meeting of the Southeastern Regional Science Association, we have prepared a paper on "Education in Regional

Economics." This paper summarizes our earlier survey of courses in regional science across the U.S. We have supplemented this survey with a survey of college catalogues and telephone interviews of educators in major universities in the Southeast. A copy is attached.

C. A Case Study in Plant Location.

A case study entitled "A Location Study for an Aluminum Reduction Plant" has been submitted by a graduate student. This student, Mr. Johann Georg Riecker, has been a member of the management team of Southwire Company for two years and has been in a position to gather first-hand knowledge of decision-making processes in this Georgia-based firm. He reports the searches involved in establishing a minimum-cost location and documents the company's decisions. The paper is still under local review to clear possibly confidential information and will be available for polishing in the spring quarter.

D. Training in Regional Development.

In addition to the faculty member supported during the winter quarter, two research assistants were employed to work on projects associated with the program. Three students were enrolled in the regional development program over the fall quarter.

III. Plans

We continue to concentrate our efforts on: 1) developing, testing, and modifying techniques for constructing regional interindustry models; 2) assembling and revising case studies associated with regional development; and 3) preparing a user's manual for simulating regional models with the 1963

national input-output tables as a base. Final reports will be submitted as completed.

Respectfully submitted,

William A. Schaffer
Program Director

Sherman F. Dallas
Dean, College of
Industrial Management

April 25, 1970

ORDER OF ATTACHMENTS

1. William A. Schaffer, "Estimating Regional Input-Output Coefficients," Discussion Paper 16, with technical supplement (written with E. Malcolm Sutter, Jr.)

2. William A. Schaffer, "Education in Regional Economics," Discussion Paper 17

ATTACHMENT 1

William A. Schaffer, "Estimating Regional Input-Output Coefficients," Discussion Paper 16, with technical supplement (written with E. Malcolm Sutter, Jr.)

ESTIMATING REGIONAL INPUT-OUTPUT COEFFICIENTS

by

William A. Schaffer*
Georgia Institute of Technology

NOTE: This paper is duplicated for private circulation and should not be quoted without permission. A slightly revised version is under editorial consideration. A technical supplement will be available at a later date.

March 1970

Discussion Paper 16

A Program on Regional Industrial Development**
Georgia Institute of Technology

*The author is Associate Professor of Economics at Georgia Tech.

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ESTIMATING REGIONAL INPUT-OUTPUT COEFFICIENTS

by

William A. Schaffer*

Georgia Institute of Technology

Interest in constructing regional input-output models through inexpensive means has inspired frequent investigation of procedures based on national coefficients. The most recent was reported in the Southern Economic Journal, where Teddy T. Su poses an interesting alternative combining national coefficients and a survey of import proportions.[1] Although many of his comments are worthwhile, his arguments reflect uncovered gaps in the literature, taking certain points for granted and raising several unanswered questions. In submitting these questions to test, I propose to demonstrate that: 1) nonsurvey techniques for constructing regional input-output models do specifically account for imports and exports; 2) while overestimating local interindustry relations, nonsurvey techniques still produce estimates of regional production coefficients which are closer to survey results than they are to national coefficients; 3) the more reasonable approach to combining a minimum survey with national coefficients may be to survey exports rather than imports.

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[1]Teddy T. Su, "A Note on Regional Input-Output Models," Southern Economic Journal, XXVI (January 1970), 325-7. Since this paper derives its theme from Dr. Su's note, and is to some degree critical of it, a copy has been appended to this discussion paper.

In accomplishing these tasks I will 1) review the more common nonsurvey techniques, 2) compare estimated regional input-output tables with a survey-based table for the state of Washington and with the 1958 table for the United States, 3) outline two semisurvey techniques, and 4) test these techniques using Washington data.

Nonsurvey Techniques[2]

As a basis for discussion, I outline four of the more common techniques for constructing regional input-output tables without direct survey. The model we examine is static, open, and descriptive. Comparing the region with the rest of the world, the model is based on a regional transactions table of the form sketched in Table 1. Given a correspondingly aggregated national transactions table and given estimates of regional outputs (x_i) and regional final demands (y_f), the task is to estimate regional gross flows (x_{ij}), exports (e_i), imports (m_{ij}), and value added (v_j). Or given an input-output system

$$\sum_{j=1}^{s} A_{ij}X_j + \sum_{f=1}^{t} Y_{if} + E_i = X_i \quad (i = 1,2,3, \ldots s),$$

and given regional outputs and demand, we derive the regional input-output system

$$\sum_{j=1}^{s} a_{ij}x_j + \sum_{f=1}^{t} y_{if} + e_i = x_i \quad (i = 1,2,3, \ldots s).$$

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[2]This section is abstracted from William A. Schaffer and Kong Chu, "Nonsurvey Techniques for Constructing Regional Interindustry Models," Regional Science Association Papers, XXIII (1969), 83-101. This article and a companion piece, "Simulating Regional Interindustry Models for Western States" (presented at the 1969 Pacific Regional Science Conference), discuss and document these and other methods and test their usefulness by simulating tables for comparison with survey-based tables for Washington, Utah, and New Mexico. Along with technical supplements, they are available as discussion papers from the College of Industrial Management, Georgia Institute of Technology.

Table 1 -- Simplified Regional Transactions Table

Inputs \ Outputs		Selling industries					Local final demand			Ex-ports	Total sales
		1	2	3 ...		s	1	...	t		
Purchasing industries	1	x_{11}	x_{12}	x_{13} ...		x_{1s}	y_{11}	...	y_{1t}	e_1	x_1
	2	x_{21}	x_{22}	x_{23} ...		x_{2s}	y_{21}	...	y_{2t}	e_2	x_2
	3	x_{31}	x_{32}	x_{33} ...		x_{3s}	y_{31}	...	y_{3t}	e_3	x_3
	. . .	. . .	. . .	. . .		. . .	. . .		. . .	. . .	. . .
	s	x_{s1} ...				x_{ss}	y_{s1}	...	y_{st}	e_s	x_s
Value added		v_1	v_2	v_3 ...		v_s	u_1	...	u_t		
Imports		m_1	m_2	m_3 ...		m_s	n_1	...	n_t		
Total inputs		x_1	x_2	x_3 . .		x_s	y_1	...	y_t		

We use lower-case letters to represent variables in the regional model and upper-case letters to refer to variables in a correspondingly aggregated national model. Thus, A_{ij} and a_{ij} are the $\underline{s} \times \underline{s}$ production coefficients ($A_{ij} = X_{ij}/X_j$, $a_{ij} = x_{ij}/x_j$) in the national system and the regional system respectively, X_i and x_i are the outputs of industry $\underline{i}$, Y_{if} and y_{if} are the final demands from industry $\underline{i}$ of consuming sector $\underline{f}$, and E_i and e_i are exports.

Location-quotient procedure. A location quotient compares the relative importance of an industry in a region to its relative importance in the nation or some other base economy. In its simplest form the quotient is defined for industry $\underline{i}$ as

$$LQ_i = \frac{x_i/x}{X_i/X} ,$$

where x_i and X_i are defined as before and $\underline{x}$ represents total regional output and $\underline{X}$ the total national output.

A location quotient equal to one for industry $\underline{i}$ means the region is self-sufficient in this industry. A location quotient less than one suggests that the region imports some of its needs of output $\underline{i}$, and a quotient greater than one indicates that the region exports some of output $\underline{i}$.

This interpretation is easily applied to determining regional input-output coefficients. If $LQ_i \geq 1$, we set $a_{ij} = A_{ij}$. With local final demand either given or estimated (in all of our procedures it is estimated as $y_{if} = Y_{if} \cdot x/X$), the exports of industry $\underline{i}$ may be computed as a residual.

If $LQ_i < 1$, imports are necessary, and regional production coefficients for row $\underline{i}$ are computed as $a_{ij} = LQ_i \cdot A_{ij}$. Imports of product $\underline{i}$ are then computed as the amounts necessary to satisfy production requirements.

Cross-industry quotient procedure. A related approach uses what may

be called the "cross-industry quotient." This quotient compares the region's proportion of the national output of selling industry i to that for purchasing industry j:

$$CIQ_{ij} = \frac{x_i/X_i}{x_j/X_j} .$$

If $CIQ_{ij} \geq 1$, $a_{ij} = A_{ij}$ for cell ij. Since the output of industry i is larger than that of industry j in the region relative to the nation, we assume that local industry i can provide all of the output required by local industry j. Regional gross flows ($a_{ij} \cdot x_j$) in this case are the local purchasing industry's share of national gross flows ($X_{ij} \cdot x_j/X_j$).

If $CIQ_{ij} < 1$, $a_{ij} = CIQ_{ij} \cdot A_{ij}$. Here regional gross flows become the local selling industry's share of national gross flows ($X_{ij} \cdot x_i/X_i$).

As in the location-quotient technique, imports and exports are computed as remainders. If exports are negative, then balancing corrections may be necessary to construct a balanced transactions table.

Supply-demand pool technique. The supply-demand pool technique derives from the concept of regional commodity balances.[3] It also is the basis for one of the more well-known nonsurvey models, the Utah model of Moore and Petersen.[4]

Let r_i be the row sum for each industry i of total input requirements (r_{ij} and c_{if}) computed from national production and consumption coefficients

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[3]See Walter Isard, "Regional Commodity Balances and Interregional Commodity Flows," The American Economic Review, XLIII (May 1953), 167-80.

[4]See Frederick T. Moore and James W. Petersen, "Regional Analysis: An Interindustry Model of Utah," The Review of Economics and Statistics, XXXVII (November 1955), 368-83.

for each cell:

$$r_{ij} = x_j \cdot A_{ij}$$

$$c_{if} = y_f \cdot \frac{Y_{if}}{Y_f} \quad .$$

Then the commodity balance (b_i) for each industry can be computed as

$$b_i = x_i - r_i \quad .$$

When b_i is positive, $a_{ij} = A_{ij}$, $x_{ij} = r_{ij}$, $y_{if} = c_{if}$, and $e_i = b_i$, where e_i is exports for industry $\underline{i}$. A positive commodity balance represents an exportable surplus.

When the commodity balance is negative, regional production coefficients are computed as proportions of the national coefficients:

$$a_{ij} = A_{ij} \cdot \frac{x_i}{r_i} \quad .$$

The remainder of total production requirements in each cell is imported.

This pool procedure allocates local production, where adequate, to meet local needs; where the local output is inadequate, it allocates to each purchasing industry $\underline{j}$ a share of regional output $\underline{i}$ based on the needs of the purchasing industry itself relative to total needs for output $\underline{i}$ ($x_{ij} = x_i \cdot r_{ij}/r_i$).

<u>An iterative procedure</u>. This last procedure not only assumes that the national production technology applies but also attempts to distribute local production according to both the national sales pattern and local needs.

Basically, we compute the required inputs r_{ij} for producing estimated regional output x_j for each industry and estimate local final demand as a proportion of national demand. If the commodity balance b_i is positive, we

follow the supply-demand pool procedure, setting $a_{ij} = A_{ij}$, $x_{ij} = r_{ij}$, and $e_i = b_i$. But if b_i is negative, we allocate local sales for each industry, basing this initial step on the national sales-distribution pattern:

$$d_{ij} = x_i \cdot \frac{X_{ij}}{X_i}, \quad dy_{if} = x_i \cdot \frac{Y_{if}}{X_i} \quad .$$

We then compare requirements and allocations to determine surplus allocations to cells (z_{ij}) and construct for each industry a surplus pool available for reallocation (P_i). If P_i is positive, we proceed to reallocate. If z_{ij} is positive or zero, regional gross flows are

$$x_{ij} = r_{ij}$$
$$y_{if} = c_{if} \quad .$$

If z_{ij} is negative, regional gross flows are

$$x_{ij} = d_{ij} + P_i \cdot X_{ij}/X_i \quad .$$

This step is repeated until the pool P_i diminishes to 0, spreading surplus local output among industries on the assumption that the local sales pattern tends toward the national sales pattern.

Imports are computed as described in earlier procedures.

Summary. As Dr. Su correctly notes, the problem in estimating regional input-output coefficients from national coefficients is to separate the national coefficients (A_{ij}) into two components: regional coefficients (a_{ij}) and import coefficients (m_{ij}). But when he states that other regional input-output models often ignore imports, Dr. Su seems not to recognize the effort

expended by others in solving his problem.[5]

Each of the methods listed above makes a clear effort to solve this problem by estimating imports. The location quotient determines the adequacy of location production by national standards and establishes import needs in constant proportions for the appropriate rows. The cross-industry quotient is an alternative which permits variation in these import proportions within rows. The supply-demand pool technique, like the location-quotient procedure, establishes import needs in constant proportions for industries with a deficit balance of trade. The fourth procedure modifies the supply-demand pool technique to follow the national sales pattern in distributing local output before reallocating it to best satisfy local needs.

Some Empirical Tests

Now, having seen that common nonsurvey procedures do attempt to account for imports, let us submit them to test. We have simulated a 33-industry model of the state of Washington using each of the above procedures. The results of these simulations can be compared with two

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[5]Su, op. cit., 326. Dr. Su qualifies this assumption in a footnote statement. "This refers to all regional input-output models which have totally or partially adopted national input coefficients for an analysis of a local economy, i.e., A is interpreted as [a] , or part of A is taken as the corresponding part of [a] ." Such models do obviously ignore imports but by common definition are not regional input-output models; rather they are what Isard might call "input-requirements models." See Isard, op. cit. Regional tables of this genre which reflect regional industry composition are also discussed in T.Y. Shen, "An Input-Output Table with Regional Weights," Papers of the Regional Science Association, VI (1960), 113-119.

Su does acknowledge the supply-demand pool approach of Moore and Petersen but quickly dismisses it as yielding "... derived regional coefficients ... not very different from the aggregated national coefficients." Far from ignoring imports, this method in fact clearly develops a_{ij} and m_{ij} matrices. Whether the division is adequate or not is an open question which should be submitted to test.

other models: the survey-based 1963 Washington study and a similarly aggregated national model.[6] In matrix notation, we estimate a regional model

$$x = (I - A + m)^{-1} y$$

and compare it with a survey-based model

$$x = (I - a)^{-1} y$$

and a national model

$$x = (I - A)^{-1} y \quad .$$

We look at imports and exports, at regional coefficients, and at output and income multipliers. The test statistics are reported in Table 2, around which the following discussion revolves.

Imports and exports. Are estimated imports so small as to be considered insignificant? Hardly. The iterative procedure has Washington importing 130 percent of actual survey-reported imports, while the supply-demand pool procedure leads to imports totaling 83 percent of actual imports. With a highly significant correlation between survey-based and

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[6]These simulated models are discussed in earlier-referenced papers by Schaffer and Chu. The 1963 Washington study is reported in Philip J. Bourque and others, The Washington Economy: An Input-Output Study (Seattle: Graduate School of Business Administration, University of Washington, 1967); our comparisons are with a 33-industry model aggregated from the 59-industry tables in Philip J. Bourque and Eldon E. Weeks, Detailed Input-Output Tables for Washington State, 1963 (Washington Agricultural Experiment Station Circular 508, September 1969). The simulations and aggregated national model are based on gross outputs taken from the above references and interindustry transactions from National Economics Division Staff, "The Transactions Table of the 1958 Input-Output Study and Revised Direct and Total Requirements Data," Survey of Current Business (September 1965), 33-49.

Table 2. Comparison of Regional Input-Output Tables Estimated through Nonsurvey Techniques with the National Table for 1958 and with the Survey-Based Tables for Washington, 1963

Variable	U.S. study	Washington survey	Nonsurvey technique			
			LQ	CIQ	Pool	Iteration
Imports						
Total industry	-	2424	2024	2278	2012	3145
Percent of survey value	-	-	83	94	83	130
Correlation	-	-	0.76	0.79	0.75	0.69
Regression constant	-	-	-10.97	8.82	-5.05	1.81
Regression coefficient	-	-	1.38	0.94	1.29	0.75
Exports						
Total	-	3517	1957	2630	1971	1441
Percent of survey value	-	-	56	75	56	41
Correlation	-	-	0.80	0.80	0.79	0.67
Regression constant	-	-	56.65	34.39	53.50	64.35
Regression coefficient	-	-	0.89	0.91	0.89	0.97
Input-output coefficients						
Weighted average total	.490	.235	.353	.339	.354	.264
Survey value as a percent	-	-	67	69	66	89
National value as a percent	-	-	139	145	138	186
Significant chi-square						
Compared with survey	-	-	5	0	4	7
Compared with nation	-	-	1	7	1	7
Interdependence coefficients						
Mean	2.01	1.26	1.50	1.63	1.51	1.29
Survey value as a percent	-	-	84	77	83	98
National value as a percent	-	-	134	123	133	156
Compared with survey						
Correlation	-	-	0.52	0.05	0.52	0.52
Regression constant	-	-	0.60	1.20	0.58	0.60
Regression coefficient	-	-	0.44	0.04	0.45	0.50
Compared with nation						
Correlation	-	-	0.64	0.76	0.65	0.82
Regression constant	-	-	0.58	0.49	0.52	0.30
Regression coefficient	-	-	0.95	0.94	0.98	1.02
Simple income multipliers						
Mean	2.22	1.31	1.60	1.73	1.61	1.38
Survey value as a percent	-	-	82	76	81	95
National value as a percent	-	-	139	128	138	161
Compared with survey						
Correlation	-	-	0.80	0.46	0.81	0.77
Regression constant	-	-	-0.05	0.12	-0.04	0.04
Regression coefficient	-	-	0.61	0.34	0.40	0.35
Compared with nation						
Correlation	-	-	0.43	0.68	0.44	0.63
Regression constant	-	-	6.29	5.88	6.27	5.76
Regression coefficient	-	-	1.02	1.62	1.05	1.50

Notes for Table 2 (continued)

The 1958 input-output table for the U.S. was aggregated in the same patterns used to perform the simulations. This aggregated table was then used to calculate the tables of direct requirements, direct and indirect requirements, and simple income multipliers summarized in the column headed "U.S. study."

The criterion value for chi-square is taken to be 18.5. Generally, the computed values of the chi-square statistic are either below the criterion or quite high.

Simple income multipliers are computed as the ratio of direct and indirect income change to direct income change in accordance with procedures described in Moore and Petersen, op.cit., and in Werner Z. Hirsch, "Interindustry Relations of a Metropolitan Area," The Review of Economics and Statistics, XLI (November 1959), 360-69.

Unless otherwise noted, correlation coefficients compare survey with simulated values and regression parameters describe a linear regression of survey on simulated values.

Sources: See footnote 6.

simulated imports, each procedure yields import figures reasonably associated with the actual imports. But the procedures vary in their abilities to estimate values for individual industries. Regression coefficients greater than one indicate that the location-quotient and supply-demand pool procedures overestimate imports below their industry means and underestimate imports for industries above these means.

Exports tell a slightly different story. Underlying the nonsurvey techniques is an assumption of maximum local trade. This assumption is quite evident here, with no procedure estimating total exports greater than 75 percent of the survey value. While estimated and survey columns are still highly correlated, the regression analysis indicates that the procedures severely underestimate almost all exports.

An examination of estimated exports columns (not reproduced here) reveals another critical flaw of tables based on national coefficients. Only the cross-industry quotient procedure provides an estimate of exports for each industry; the other procedures estimate exports for an industry only when the industry is large enough to supply all local needs for its products. Obviously this approach is unreasonable and shows the severity of an implicit assumption of no cross-hauling. It is just what one would expect from a purely mechanistic approach.

A general conclusion, then, is not that nonsurvey techniques ignore imports but that, crudely applied, they improperly estimate the individual values in the imports matrix.

Regional coefficients. Estimates yield regional input-output coefficients which on the average are substantially different from national coefficients. The ratio of total local purchases to total sales (the "weighted average total" input-output coefficient, Table 2) for the nation is 37 to 86 percent greater than the estimated ratios, while the survey is only 11 to

35 percent smaller. It seems clear that, for the matrix as a whole, the estimated coefficients must be quite different from national coefficients.

When individual columns in the interindustry matrices are compared, the results are not so clear. While statistical tests of the similarity of two columns of numbers are difficult, two rough measures have been computed: chi-square statistics and correlation coefficients.[7] Using the chi-square test we have no reason to reject the hypothesis that our methods can yield production coefficients which are the same as survey-based coefficients for a total of 16 industries. Interestingly, the nonsurvey coefficients also compare favorably with the national coefficients for 16 industries, though not for the same industries nor for the same techniques as in the survey comparison.

The correlation between estimated and national coefficients is significant at the .05 level for nearly every industry and for every estimating technique. Enough coefficients remain unaltered by the estimating techniques to insure correlation. Our techniques also yield coefficients surprisingly close to those of the survey. Regional production coefficients are correlated at the .05 level with survey coefficients for 26 industries in the iterative tables, for 29 in the location-quotient tables, and for 27 in the others. Given our simple aggregation with no regard for product mix and given the different populations of the national and state studies, our success seems remarkable.

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[7]These tests and associated difficulties are discussed in Schaffer and Chu, "Simulating Interindustry Models for Western States." Chi-square is computed for each column as

$$\chi_j^2 = \sum_i \frac{(a_{ij\ \mathrm{base}} - a_{ij\ \mathrm{survey}})^2}{a_{ij\ \mathrm{base}}} .$$

The production coefficients (a_{ij}) are expressed as percents to permit a uniform number of "observations" in each case and to allow some chance of rejecting the hypothesis.

Multipliers. Now let us look at some of the analytical results associated with our models. Output multipliers, or interdependence coefficients (sums of columns in the inverse matrix) are, on the average, much closer to survey results than to national results. Survey results range from 2 to 23 percent lower than simulated results while national output multipliers are 23 to 56 percent higher. Both survey and national values are highly correlated (significant at the .01 level) with simulated values. But the regression parameters show that, while substantially larger in magnitude, the national output multipliers more closely parallel simulated values. On the other hand, the survey-based multipliers are underestimated at low values and overestimated at high values by the simulations.

Simple income multipliers, computed as the ratio of direct and indirect to direct income changes, show similar relations. Survey results range from 5 to 24 percent lower than simulated values while national income multipliers are 28 to 61 percent higher. The regression analysis shows that simulated values are usually much higher than survey-based income multipliers while being substantially lower than national income multipliers.

Summary. Empirically, then, nonsurvey methods produce regional input-output models more closely resembling survey-based regional models than their national counterpart. Imports and exports are substantial and regional production coefficients are, on the average, much lower than national coefficients. While income and output multipliers are still high compared with survey values, they are much lower than national multipliers. These analytical results, however, are not uniform and bring into question the acceptability of the 1958 national table as a basis for mechanically simulating accurate regional models. The next section explores this question further.

Semisurvey Methods

Dr. Su has suggested that a survey of regional import proportions yielding an m_{ij} matrix and employed in conjunction with a national technology matrix may produce an acceptable regional model. Let us look at this suggestion in the light of other "semisurvey" methods.

Properly done, an input-output model is constructed on the basis of a survey of industries and final consumers which documents both purchases and sales. That is, each respondent is first asked to designate purchases from local and nonlocal industries and payments such as wages and salaries, profits, depreciation allowances, taxes, etc. These purchases and final payments outline the "production technology" of each industry. The respondents are then asked to designate sales to local industries and to final users such as consumers, governments, and nonlocal industries. Theoretically, purchases and sales should balance when aggregated to form the regional input-output table. Actually, sampling and reporting error force the analyst to achieve balance by tediously assaying the reliability of responses and by juggling numbers until totals finally match.

One basic alternative to this full survey approach is the "rows-only" method. First used by Hansen and Tiebout, this method assumes

> ... that firms know the destination of their outputs far better than the origin of their inputs, especially where regional breakdowns are required. In other words, in terms of input-output flows, information for the "rows" is easier to obtain than information for the "columns." The reason for this is that the bundle of inputs is usually so varied and complex that their origins are difficult even for firms involved to track down accurately. However, the same firms are especially concerned with where and to whom they sell their output.[8]

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[8] W. Lee Hansen and Charles M. Tiebout, "An Intersectoral Flows Analysis of the California Economy," Review of Economics and Statistics, XLV (November 1963), 411.

The "rows-only" approach permits the analyst to avoid a complex data reconciliation. It produces only one entry per cell in the transactions table; the full-survey method forces the analyst to check his work by producing two estimates of cell values.

Dr. Su has proposed an alternative "imports-only" approach. He suggests that we ask each respondent to identify the proportion of inputs he purchases from each nonlocal industry; from these replies we construct an import-requirements matrix ($\underline{m}$) and then estimate the direct-requirements matrix for the region as $\underline{a} = A - m$. As Dr. Su points out, this procedure has several advantages: it avoids the reconciliation problem, the questionnaire is easier to complete than that for a full survey, and it is more acceptable to the businessman in that he reveals only proportions and not absolute figures. But on the other hand, purchases appear more difficult to trace to their regional origins. It may be just as convenient to use a "columns-only" approach to estimating the $\underline{a}$ matrix, ignoring the national coefficients altogether.

If an economical survey is our goal and we cannot afford a complete "rows-only" study, then I suggest that an "exports-only" survey may be more acceptable than the "imports-only" approach. It is simpler and, if Hansen and Tiebout are correct, asks questions for which reliable answers are available. In this approach we simply canvass firms in the area, asking information on three items: their SIC code, value of sales for the year, and the proportion of their sales going to out-of-area purchasers. The first two answers permit the analyst to classify replies and to properly weight export proportions in constructing the transactions table. This approach is simply a variant of the supply-demand pool procedure discussed above,

where regional production coefficients are computed as

$$a_{ij} = A_{ij} \cdot \frac{x_i - e_i}{r_i} .$$

This approach satisfies export requirements first and then allocates the remainder of local production to satisfying local needs in proportion to requirements.[9]

More Tests

We have simulated the 1963 Washington study using both of the above semisurvey methods and can compare these simulations with survey-based results. Table 3 reports these tests.

Imports-only method. The imports matrix for the Washington table is reported in sufficient detail to allow us to construct a 25-industry model. In our first attempts at implementing this method we found the simulated total flows matrix (A - m) to contain 65 negative entries, indicating that national and regional technology matrices are not identical. To obtain the most favorable results possible, these negative values were

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[9]One criticism of nonsurvey techniques is that national coefficients can be adjusted downward but not upward. See William H. Miernyk, "Long-Range Forecasting with a Regional Input-Output Model," Western Economic Journal, VI (June 1968), 166. This criticism stems from, among other things, the fact that national coefficients showing the behavior of an aggregate industry may not reflect the upper limits for the regional input-output coefficients of a regional industry bearing the same title but differing substantially in industry or product composition. In partial correction of this flaw, the "exports-only" method permits the coefficients to be adjusted upward. In the test reported in the next section, coefficients in 4 rows are adjusted upward. Miernyk's criticism remains quite valid, especially in such mechanical simulations as reported here, where no attention has been paid to product mix.

Table 3. Comparison of Regional Input-Output Tables Estimated through Semisurvey Techniques with the Survey-Based Tables for Washington, 1963

Variable	Washington survey	Semisurvey Technique: Imports only	Semisurvey Technique: Exports only
Imports by industries			
Total	2424	2424	2808
Percent of survey value	-	100	116
Correlation	-	1.00	0.85
Regression constant	-	0.00	19.40
Regression coefficient	-	1.00	0.69
Exports			
Total (millions of dollars)	3517	-[a]	3517
Input-output coefficients			
Weighted average total	.235	.318	.294
Survey value as a percent	-	74	80
Significant chi-square[b]	-	1	7
Interdependence coefficients			
Average	1.26	1.50	1.38
Survey value as a percent	-	84	91
Correlation	-	0.71	0.64
Regression constant	-	0.29	0.14
Regression coefficient	-	0.65	0.81
Simple income multipliers			
Average	1.31	1.61	1.47
Survey value as a percent	-	81	89
Correlation	-	0.95	0.78
Regression constant	-	0.06	0.01
Regression coefficient	-	1.27	0.90

[a]Total exports by the imports-only method is $2530 million. Since seven industries have "negative exports" by this method, the number makes little sense.

[b]The criterion value for chi-square is taken to be 13.0. Generally, the computed values of the chi-square statistic are either below the criterion or well above it.

replaced by zeros.[10] Further, we assumed that local final demand was as reported in the Washington study.[11] With this assumption, exports were still negative in seven out of the 25 industries. Since these estimates of exports were made merely to complete the transactions table and have no bearing on estimating regional production coefficients, by the imports-only method as strictly interpreted, we made no other corrections.[12]

The imports-only method produces a matrix of regional input-output coefficients with average values only slightly different from those of the nonsurvey methods. Only one column in the matrix meets our chi-square criterion. The average interdependence coefficients are comparable to those of the nonsurvey techniques and are slightly better by the correlation tests. The same can be said for the income multipliers. In general, then, we can conclude that the imports-only method yields results comparable with, but not better than, the nonsurvey methods.

Exports-only methods. With only exports and gross purchases as data from the survey-based study, we have simulated the 25-industry Washington

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[10]Two changes in the imports matrix were also made. To better match national technology, imports of alumina were shifted from the chemicals to the nonferrous-metals industry. And to account for heavy imports of oil from foreign sources, the imports matrix was altered such that the simulated purchases of the petroleum-refining industry from the mining industry in Washington were equal to actual purchases (zero).

[11]Imports to final demand are not available by importing industry in the Washington study.

[12]As an experiment, we did try the imports-only method followed by proportional reductions in interindustry transactions to allow for survey-reported exports. This procedure overestimated imports by 35 percent. Since it reduces estimated total local purchases to exactly the survey-reported figure, the average interdependence coefficient (1.32) and average income multiplier (1.38) are much closer to survey results.

Other adjusting procedures could be devised. But if sufficient resources are available to acquire information on imports and on final demand, the analyst might as well conduct a proper survey and avoid the by-now-obvious problems of working with national coefficients.

model using the exports-only method. Only two adjustments in the supply-demand pool technique are necessary for these simulations: 1) we substitute $(x_i - e_i)/r_i$ for the ratio x_i/r_i, and 2) we stipulate that if $(x_i - e_i)/r_i$ is greater than one, then m_{ij} is zero. This latter condition reduces local value added (which is computed as a residual), but this has no effect on the tests.

By the exports-only method, total imports is only slightly overestimated and industry imports seem reasonably correlated with survey-based imports. The average input-output coefficient is lower than that for all but one of the previously tested techniques. Seven columns in the input-output coefficient matrix meet our chi-square criterion. The interdependence coefficients and income multipliers, on the average, are closer to survey-based values than are those for all other methods except the iterative procedure. While showing only slightly less significant correlation with survey-based values than for the imports-only method, these values also appear to be the best predictors of survey-based interdependence coefficients and multipliers.

Conclusions

Nonsurvey techniques for constructing regional input-output tables rely on conventional tools of economic analysis to estimate import and export patterns for regions. Mechanical in nature, they necessarily yield rough estimates. But these estimates are close enough to survey-based patterns to be reasonably realistic and are clearly distant from national values.

Tested using data from the 1963 Washington study, semisurvey methods appear to be comparable to nonsurvey techniques. The imports-only method clearly suffers from problems of industry technology and product mix but

produces a matrix of input-output coefficients of about the same quality as the other methods. The exports-only method yields a balanced regional table and appears to be just superior to the other methods tested.

These methods have been tested under conditions of hardship. The 1958 input-output study, with detail for only 82 industries, does not permit the analyst to account for regional differences in product mix and is a strong handicap in simulating existing survey-based tables. In addition, we have not taken price changes into account in constructing the regional tables nor have we allowed any judgment to enter into the estimating procedures.

Allowing in detail for regional peculiarities, survey-based procedures remain superior to the various estimating techniques for constructing regional models. But they are time-consuming and expensive; unless used by an organization capable of continuing analysis and action, they may not be worth the effort. Perhaps the 1963 national tables, with their added industry detail, and a judicious use of such techniques as outlined above may permit us to construct tables which are acceptable in terms of both cost and accuracy.

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*A NOTE ON REGIONAL INPUT-OUTPUT MODELS**

Many regional input-output tables have emerged [1] subsequent to the publication of the 1947 and 1958 U. S. input-output tables [3, 5, 9]. No doubt, the Leontief input-output model is a powerful tool in the study of the internal economic structure of a nation as well as a region. The direct and indirect impacts upon a local economy of expansion and contraction of one or a number of local industrial sectors can be evaluated through the analysis of the local input-output table. However, the compilation of an input-output table for an economy of any size is so expensive that economists are tempted to derive the local table from the national.[1] In the transition from the national table to the local, several problems arise due to dissimilarities in regional production processes, marketing practices, and product mixes. Some of these problems can be solved through consultations with experts in each economic sector of the region concerned. Nevertheless, the adjustments resulting from consultation are by no means adequate. This paper is an attempt to supplement traditional regional input-output models with a practical analytical tool based on the modified national input-output model.

For an economic unit as self-sufficient as the United States, imports are relatively unimportant. As a matter of fact, only a few imports are non-competitive in the sense that they are used as primary factors and intermediate goods for further processing. However, this is not the case in regions within the United States. Imports from other regions or abroad are important and are often used in further processing. Under these circumstances, a regional input-output table should not follow the national table by compressing the matrix of non-competitive imports into a row vector, particularly when national input coefficients are adopted to describe the local productive processes. The national input coefficients can at most be assumed to reflect the technology of the normal and typical productive processes in the nation. Hence, the following equation is constructed to relate a local input-coefficient matrix to the national:

$$A = A_1 + M_1 + \epsilon \tag{1}$$

where A = the matrix of input coefficients derived from the national table by simple aggregations in accordance with the number of important industries in the region concerned. Each element of A, a_{ij}, represents the direct technological requirement of inputs from sector i per unit of output produced by sector j. A_1 = matrix of regional input coefficients. Each element of A_1, a'_{ij}, shows the direct requirement of the locally produced inputs per unit of output. A_1 is derived from A by excluding all imports used by local productive processes. Therefore, A_1 is not a technology matrix. M_1 = import matrix. Each element of M_1, m_{ij}, denotes imports from the sector i of other regions or abroad which are used as inputs per unit of output produced by the sector j in the region concerned. ϵ = the matrix of random disturbances. In the following discussion, matrix ϵ is assumed to be negligible. The assumption made for ϵ is quite reasonable except for some small firms in the local

* This note is a by-product of the author's recent research directed toward the compilation of a South Carolina input-output table.

[1] In the early 1950's the construction of a regional input-output table was thoroughly based on the national coefficients. Good examples are found in the studies for the Eighth Federal Reserve District [4] and New England [6]. Later, Moore and Petersen in an interindustry model of Utah [8], and Hirsch in the St. Louis Study [7], computed the inverse matrix $(I - A)^{-1}$ to estimate income and employment interactions and multipliers. The Utah approach [8] has since been widely used, even in the post-1961 regional input-output studies. Local data collection for measuring a portion of regional coefficients in combination with a portion of national coefficients marked an improvement in most of the applications of the input-output technique to the local level during the 1960's.

economy which might apply obsolete or peculiar methods of production. However, communication and transportation tend to close these technological gaps between regions. A, A_1, M_1, and ϵ are of the same order. If we assume that n is the number of endogenous sectors selected for the region under investigation, then the order of those matrices is n by n. The fundamental equation for the economy of the region concerned may be written as

$$x = A_1 x + y \tag{2}$$

where x = column vector of gross output; y = column vector of the bills of final demand. Both x and y are of order n by 1. Since no local data are available for A_1, matrix A is used to replace A_1 in Eq. (2). This can be done by substituting Eq. (1) into Eq. (2) so that we have

$$x = Ax + (y - M_1 x). \tag{3}$$

Hence, the direct and indirect amounts of gross output required from each sector to sustain the given amount of the bills of final demand, y, are estimated as

$$x = (I - A + M_1)^{-1} y. \tag{4}$$

By means of the expansion of the inverse matrix (the Neumann series) [10 pp. 291–3], we obtain the inequality

$$(I - A + M_1)^{-1} \leq (I - A)^{-1} \tag{5}$$

where matrix M_1 is normally not greater than matrix A, but at least equal to a null matrix, i.e., $A \geq M_1 \geq 0$. Otherwise, the commodity (commodities) concerned will be imported from other regions or abroad rather than produced locally. Since other regional input-output models[2] often ignore M_1, their income and employment multipliers are generally greater than those derived from Eq. (4). The vector y may further be broken down into four sectors such as

$$y = c + i + g + (e - m) \tag{6}$$

where the vector m is composed of four subsectors, that is,

$$m = m_c + m_i + m_g + m_e. \tag{7}$$

Notations c = consumption, i = investment, g = government expenditures, e = exports, m_c = imports for private consumption, m_i = imports for private investment, m_g = imports purchased by government, and m_e = imports for resale to other regions. Let w be the vector, each element of which is formed by the ratio of wage bills (immediate income) to gross output in each sector, and let t be the vector, each element of which is constituted by the ratio of taxations and other government revenues to gross output in each sector. If $\bar{A}$ is obtained from A by augmenting its $(n + 1)$ and $(n + 2)$th columns with column vectors of consumption and government-expenditure coefficients, and its $(n + 1)$ and $(n + 2)$th rows with row vectors w and t, and if $\bar{M}_1$ is derived from M_1 by augmenting its $(n + 1)$ and $(n + 2)$th columns with the coefficients of column vectors m_c and m_g, and its $(n + 1)$ and $(n + 2)$th rows with null vectors, then the direct-plus-indirect-plus-induced income effect for each sector can be shown in the following equation

$$x = (I - \bar{A} + \bar{M}_1)^{-1} [(i - m_i) + (e - m_e)] \tag{8}$$

where column vectors x, $(i - m_i)$, and $(e - m_e)$ are all of order $(n + 2)$ by 1. The last two elements of vectors x, $(i - m_i)$, and $(e - m_e)$ represent household and govern-

[2] This refers to all regional input-output models which have totally or partially adopted national input coefficients for an analysis of a local economy, i.e., A is interpreted as A_1, or part of A is taken as the corresponding part of A_1. For those regional input-output models which followed the Utah approach by reducing proportionately each of the distribution rows of the deficit industries by the amount of the corresponding "net" imports and maintaining the same commodity flows for the surplus industries [8, 372], we find that the amount of intermediate inputs required from each of the domestic industries in the region concerned is still very much overstated. Consequently, the derived regional coefficients are not very different from the aggregated national coefficients.

ment, respectively. Eq. (8) gives the sum of direct, indirect, and induced amounts of gross output in each sector in a given region resulting from the expansion of final demand for the locally produced investment goods $(i - m_i)$ and exports $(e - m_e)$.

Finally, we come to the problem of the data collection for matrix M_1 or $\bar{M}_1$. A survey can be conducted on the *proportion* of required inputs for each sector imported from other regions or abroad in the total inputs of that sector. Such a survey is much easier to conduct than one on the *amounts* of required inputs produced locally, since each firm or industry is more generous in disclosing percentage values than in releasing absolute figures. The absolute figures are often considered confidential. With those percentage figures (p_{ij}) multiplied into the corresponding elements of matrix $A(a_{ij})$, m_{ij} can be estimated. In the same manner, each element of $A_1(a'_{ij})$ may be approximated by multiplying $(1 - p_{ij})$ by corresponding element of matrix $A(a_{ij})$. Here, the elements of A may remain quite stable,[3] but those of A_1 will change from period to period as a consequence of the growth or the decline of one or a number of local economic sectors. The more integrated a local economy becomes, the closer is the value of A_1 brought to A, and the smaller will be the value of M_1. Hence, income and employment multipliers for the region concerned will become larger. This can be easily observed from Eqs. (4) and (8).

[3] The results of the Cameron study show "the material coefficients tend on the whole to be approximately constant for short periods of a few years.... For half the industries examined at least the major coefficient is approximately constant for a long period, usually a decade or more" [2, 66].

We may, therefore, conclude that the values of income and employment multipliers in other regional input-output models based on national input coefficients are overestimated. Consequently, any regional economic projections will appear to be too optimistic without accounting for import matrix M_1 or $\bar{M}_1$.

TEDDY T. SU
University of South Carolina

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Technical Supplement

to

ESTIMATING REGIONAL INPUT-OUTPUT COEFFICIENTS

by

William A. Schaffer

assisted by

E. Malcolm Sutter Jr.*

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*The authors are Associate Professor of Economics and Research Assistant at Georgia Tech.

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Technical Supplement

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ESTIMATING REGIONAL INPUT-OUTPUT COEFFICIENTS

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William A. Schaffer

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This supplement reports three estimates of a regional interindustry model for the state of Washington, 1963. It is the basis for Table 3 in the discussion paper. Some brief comments are in order.

Part I reports a 25-industry version of the 1963 model of Washington, as condensed from the 59-industry tables.[1] Tables 1, 2, and 3 should be identical to official tables of this size; we constructed Table 4, direct production requirements including a local private (households) sector, by moving the entire "local private use" column into the interindustry or processing sector and by moving a proportion of each value-added coefficient in Table 2 into the processing sector. This proportion is equal to the total of the local-private-use column divided by the total of the value-added row. This method was used simply because corresponding figures from the Washington table were not available in published form. We were not able to check any of the resulting values but feel that errors are probably small.

The imports-only method has been used to construct the estimate reported in part II. In our first attempt at estimating regional transactions by subtracting import coefficients from national technical coefficients,

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[1]See Philip J. Bourque and Eldon E. Weeks, Detailed Input-Output Tables for Washington State, 1963 (Washington Agricultural Experiment Station Circular 508, September 1969)

we obtained 65 negative entries in the regional direct-requirements table. We zeroed these values and used survey-based figures for local final demand. Nevertheless, exports were still negative in seven out of the 25 industries. Part II shows these negative values for exports. Since there were no negative values in the processing sector, the remainder of the model could be computed.

Part III represents our effort to correct this fault. We adjusted transactions in Part II to allow for survey-based exports. This proportional change in rows in the transactions matrix reduces local industry sales to exactly the survey-based figure and substantially improves estimates of interdependence coefficients and income multipliers. But with this corrections a substantial error is induced in imports. An iterative procedure might be developed to balance the errors in imports and exports. We did not pursue this possibility.

Part IV is based on the exports-only method, a combination of the "rows-only" survey method and the supply-demand pool procedure. We might note that it is constructed with the very least of local information. We assume that we know only three items: 1) the gross purchases of local industries and the gross purchases of local final-demand sectors (a 28-element row vector), 2) the exports of local industries (a 25-element column vector), and 3) the national interindustry transactions table. The simulation procedure is used to estimate local interindustry transactions, local final-demand patterns, and imports.

More details on the procedures used to aggregate the national transactions table with weights reflecting local industry patterns, on the procedures used to account for price changes between 1958 and 1963, and on the nonsurvey procedures discussed in the first part of the text are

available in the technical supplement to Discussion Paper 14, "Simulating Regional Interindustry Models for Western States." With only a few changes and additions, Table 2 is based on that study.

PART I: SURVEY METHOD

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963
(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	16.3	0.0	0.0	0.0	175.9	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	6.9	10.3	0.0	0.0	104.7	0.0	0.5
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	2.6	0.0	19.6	0.0	0.0
4 MINING	0.0	0.0	0.1	0.5	0.5	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	33.6	0.0	0.9	0.0	88.1	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.0	0.6	0.0	0.3	0.0	0.5
7 APPAREL	0.0	0.1	0.1	0.0	1.6	0.0	3.0
8 LUMBER AND WOOD PRODUCTS	0.0	1.1	0.3	0.0	0.9	0.0	0.0
9 FURNITURE AND FIXTURES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	0.1	7.6	0.0	0.1	28.5	0.0	0.4
11 PRINTING AND PUBLISHING	0.1	0.1	0.0	0.0	4.3	0.0	0.0
12 CHEMICALS	0.0	7.3	0.0	0.0	1.3	0.0	0.1
13 PETROLEUM REFINING	3.0	7.9	0.8	1.2	2.2	0.0	0.0
14 STONE, CLAY AND GLASS	0.0	0.5	0.0	1.2	8.8	0.0	0.0
15 IRON AND STEEL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 NONFERROUS METALS	0.0	1.9	0.0	0.0	0.0	0.0	0.0
17 FABRICATED METALS	0.0	0.0	0.0	0.2	26.8	0.0	0.1
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.0	0.0	0.0	0.2	0.1	0.0	0.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.0	0.0	0.5	0.6	0.0	0.0
21 ELECTRICAL MACHINERY	0.0	0.0	0.1	0.0	0.0	0.0	0.0
22 AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.3	0.6	0.4	0.0	0.0	0.0	0.0
24 OTHER MANUFACTURING	0.0	0.0	0.1	0.0	0.0	0.0	0.0
25 MISC. CONST., TRADE, SERVICE	16.4	39.5	4.1	5.0	112.2	0.3	2.3
TOTAL LOCAL PURCHASES	76.7	76.9	10.1	8.9	576.4	0.3	6.9
VALUE ADDED	78.9	267.0	104.6	28.8	351.5	4.7	27.1
IMPORTS	79.8	79.0	3.6	15.7	185.1	7.3	26.2
TOTAL PURCHASES	235.4	422.9	118.3	53.4	1113.0	12.3	60.2

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3 FORESTRY AND FISHERY PRODUCTS	89.0	0.0	0.0	0.0	0.0	0.0	0.0
4 MINING	0.0	0.0	0.8	0.0	0.9	0.0	20.5
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	0.0	0.7	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.2	0.3	0.0	0.0	0.0	0.0
7 APPAREL	0.2	0.0	0.0	0.0	0.0	0.0	0.0
8 LUMBER AND WOOD PRODUCTS	203.7	5.1	65.6	0.0	0.1	0.1	0.1
9 FURNITURE AND FIXTURES	0.0	0.5	0.0	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	0.4	0.7	61.9	10.3	1.4	0.2	4.5
11 PRINTING AND PUBLISHING	0.9	0.0	0.2	2.7	0.3	0.1	0.5
12 CHEMICALS	7.9	0.7	11.8	2.0	7.3	1.3	0.5
13 PETROLEUM REFINING	3.0	0.1	6.1	0.0	1.6	2.0	4.0
14 STONE, CLAY AND GLASS	0.9	0.0	1.7	0.0	0.3	0.0	16.8
15 IRON AND STEEL	0.1	0.2	0.3	0.0	0.2	0.0	0.6
16 NONFERROUS METALS	0.2	0.4	0.1	0.0	1.8	0.0	0.1
17 FABRICATED METALS	1.2	0.0	0.8	0.2	0.5	1.3	0.8
18 NONELECTRICAL MOTIVE EQUIPMENT	0.5	0.0	0.0	0.0	0.0	0.0	0.1
19 MACHINE TOOLS AND SHOPS	0.9	0.0	0.1	0.0	0.4	0.0	0.8
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	1.1	0.0	1.6	0.0	0.5	0.0	0.0
21 ELECTRICAL MACHINERY	0.0	0.0	0.0	0.0	0.1	0.3	0.3
22 AEROSPACE	0.0	0.0	0.0	0.0	0.1	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.1	0.0	0.0	0.0	0.0	0.2	0.2
24 OTHER MANUFACTURING	0.0	0.2	0.4	0.1	0.6	0.0	0.0
25 MISC. CONST., TRADE, SERVICE	105.9	4.1	67.4	11.3	21.5	15.9	15.9
TOTAL LOCAL PURCHASES	416.0	12.2	219.1	26.6	38.4	21.4	65.7
VALUE ADDED	394.7	20.0	336.6	73.7	219.0	63.8	53.7
IMPORTS	104.9	7.9	133.4	22.5	51.9	180.3	11.8
TOTAL PURCHASES	915.6	40.1	689.1	122.8	309.3	265.5	131.2

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963 (CONTINUED)
(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 MINING	0.3	1.0	0.0	0.0	0.0	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 APPAREL	0.0	0.1	0.0	0.0	0.0	0.0	0.0
8 LUMBER AND WOOD PRODUCTS	0.1	0.4	0.0	0.0	0.0	0.1	0.0
9 FURNITURE AND FIXTURES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	0.0	0.1	0.7	0.0	0.0	0.1	0.4
11 PRINTING AND PUBLISHING	0.0	0.1	0.0	0.0	0.0	0.1	0.0
12 CHEMICALS	0.2	0.7	1.4	0.0	0.0	0.0	0.0
13 PETROLEUM REFINING	0.0	0.7	0.3	0.1	0.0	0.0	0.0
14 STONE, CLAY AND GLASS	1.6	0.5	0.2	0.1	0.1	0.0	0.0
15 IRON AND STEEL	1.2	0.6	12.7	2.6	0.7	0.2	0.2
16 NONFERROUS METALS	0.2	16.3	0.8	0.5	0.3	0.1	1.1
17 FABRICATED METALS	0.1	0.1	3.8	0.8	0.1	0.2	0.0
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.0	0.0	0.3	0.0	0.3	0.0
19 MACHINE TOOLS AND SHOPS	0.1	0.0	0.5	1.6	0.7	0.2	0.1
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.2	0.0	0.5	0.2	0.4	0.0
21 ELECTRICAL MACHINERY	0.0	0.0	0.2	0.2	0.1	0.3	0.2
22 AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 OTHER MANUFACTURING	0.0	0.0	0.0	0.0	0.0	0.1	0.0
25 MISC. CONST., TRADE, SERVICE	9.9	35.6	8.4	2.3	1.6	3.6	2.2
TOTAL LOCAL PURCHASES	13.7	56.4	29.0	9.0	3.8	5.7	4.2
VALUE ADDED	44.5	149.3	68.0	30.7	20.7	38.5	31.5
IMPORTS	10.1	212.3	57.6	16.9	8.1	22.5	14.8
TOTAL PURCHASES	68.3	418.0	154.6	56.6	32.6	66.7	50.5

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.2
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	1.4
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	0.0
4 MINING	0.0	0.0	0.0	15.4
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	7.8
6 TEXTILE MILL PRODUCTS	0.1	0.0	0.1	0.0
7 APPAREL	0.0	0.1	0.3	1.3
8 LUMBER AND WOOD PRODUCTS	0.5	1.3	0.3	70.0
9 FURNITURE AND FIXTURES	0.1	0.2	0.0	1.6
10 PAPER AND ALLIED PRODUCTS	0.7	0.4	0.4	15.7
11 PRINTING AND PUBLISHING	2.6	0.2	0.0	70.5
12 CHEMICALS	0.8	1.1	0.1	8.9
13 PETROLEUM REFINING	0.9	0.2	0.0	54.5
14 STONE, CLAY AND GLASS	0.4	0.6	0.0	74.1
15 IRON AND STEEL	0.2	9.0	0.0	14.0
16 NONFERROUS METALS	2.3	1.9	0.8	3.0
17 FABRICATED METALS	1.0	3.5	0.0	47.2
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.5	0.0	0.2
19 MACHINE TOOLS AND SHOPS	7.4	0.5	0.1	4.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.1	0.3	0.0	0.3
21 ELECTRICAL MACHINERY	3.4	1.2	0.0	2.3
22 AEROSPACE	15.0	0.0	0.0	0.8
23 OTHER TRANSPORTATION EQUIPMENT	0.0	0.8	0.0	1.9
24 OTHER MANUFACTURING	2.0	0.6	2.0	1.8
25 MISC. CONST., TRADE, SERVICE	25.6	13.9	2.8	760.1
TOTAL LOCAL PURCHASES	63.1	36.3	6.9	1157.0
VALUE ADDED	629.3	177.4	25.4	3899.0
IMPORTS	517.7	95.5	13.4	545.9
TOTAL PURCHASES	1210.1	309.2	45.7	5601.9

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963 (CONTINUED)

(MILLIONS OF DOLLARS)

SELLING INDUSTRY	TOTAL LOCAL SALES	FINAL DEMAND: LOCAL PRIVATE USE	FINAL DEMAND: STATE AND LOCAL GOVERNMENT	FINAL DEMAND: FEDERAL GOVERNMENT	FINAL DEMAND: EXPORTS	TOTAL FINAL DEMAND	TOTAL SALES
1 LIVESTOCK AND PRODUCTS	192.4	38.5	0.0	0.0	4.5	43.0	235.4
2 OTHER AGRICULTURAL PRODUCTS	123.9	26.2	0.1	0.0	272.7	299.0	422.9
3 FORESTRY AND FISHERY PRODUCTS	111.2	2.3	0.0	0.0	4.8	7.1	118.3
4 MINING	40.0	0.2	0.3	2.9	10.0	13.4	53.4
5 FOOD AND KINDRED PRODUCTS	131.1	476.9	11.8	34.7	458.5	981.9	1113.0
6 TEXTILE MILL PRODUCTS	2.1	1.9	0.0	1.2	7.1	10.2	12.3
7 APPAREL	6.8	16.5	0.1	0.2	36.6	53.4	60.2
8 LUMBER AND WOOD PRODUCTS	349.7	4.0	2.0	9.5	550.4	565.9	915.6
9 FURNITURE AND FIXTURES	2.4	11.6	0.8	0.1	25.2	37.7	40.1
10 PAPER AND ALLIED PRODUCTS	134.6	11.0	2.1	5.7	535.7	554.5	689.1
11 PRINTING AND PUBLISHING	82.7	30.5	1.2	0.0	8.4	40.1	122.8
12 CHEMICALS	53.4	3.3	0.8	210.3	41.5	255.9	309.3
13 PETROLEUM REFINING	88.6	107.6	5.9	10.6	52.8	176.9	265.5
14 STONE, CLAY AND GLASS	107.8	8.8	1.4	2.1	11.1	23.4	131.2
15 IRON AND STEEL	42.8	2.3	0.2	2.6	20.4	25.5	68.3
16 NONFERROUS METALS	31.8	2.3	0.0	0.7	383.2	386.2	418.0
17 FABRICATED METALS	88.7	8.1	1.1	7.2	49.5	65.9	154.6
18 NONELECTRICAL MOTIVE EQUIPMENT	1.9	22.0	0.3	2.1	30.3	54.7	56.6
19 MACHINE TOOLS AND SHOPS	17.7	1.8	0.4	3.9	8.8	14.9	32.6
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	6.3	8.0	0.1	4.3	48.0	60.4	66.7
21 ELECTRICAL MACHINERY	8.7	3.4	0.3	15.0	23.1	41.8	50.5
22 AEROSPACE	15.9	0.0	0.4	775.4	418.4	1194.2	1210.1
23 OTHER TRANSPORTATION EQUIPMENT	4.5	10.6	1.1	187.5	105.5	304.7	309.2
24 OTHER MANUFACTURING	7.9	7.4	0.6	2.0	27.8	37.8	45.7
25 MISC. CONST., TRADE, SERVICE	1287.8	3496.7	331.9	102.4	383.1	4314.1	5601.9
TOTAL LOCAL PURCHASES		4301.9	362.9	1380.4	3517.4	9562.6	12503.3
VALUE ADDED	7138.4	853.6	590.3	483.7	0.0	1927.6	9066.0
IMPORTS	2424.2	1896.7	246.8	0.0	0.0	2143.5	4567.7
TOTAL PURCHASES	12503.3	7052.2	1200.0	1864.1	3517.4	13633.7	26137.0

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	6.9244	0.0000	0.0000	0.0000	15.8041	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	2.9312	2.4356	0.0000	0.0000	9.4070	0.0000	0.8306
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	2.1978	0.0000	1.7610	0.0000	0.0000
4 MINING	0.0000	0.0000	0.0845	0.9363	0.0449	0.0000	0.0000
5 FOOD AND KINDRED PRODUCTS	14.2736	0.0000	0.7608	0.0000	7.9155	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.5072	0.0000	0.0270	0.0000	0.8306
7 APPAREL	0.0000	0.0236	0.0845	0.0000	0.1438	0.0000	4.9834
8 LUMBER AND WOOD PRODUCTS	0.0000	0.2601	0.2536	0.0000	0.0809	0.0000	0.0000
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0425	1.7971	0.0000	0.1873	2.5606	0.0000	0.6645
11 PRINTING AND PUBLISHING	0.0425	0.0236	0.0000	0.0000	0.3863	0.0000	0.0000
12 CHEMICALS	0.0000	1.7262	0.0000	0.0000	0.1168	0.0000	0.1661
13 PETROLEUM REFINING	1.2744	1.8681	0.6762	2.2472	0.1977	0.0000	0.0000
14 STONE, CLAY AND GLASS	0.0000	0.1182	0.0000	2.2472	0.7907	0.0000	0.0000
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16 NONFERROUS METALS	0.0000	0.4493	0.0000	0.0000	0.0000	0.0000	0.0000
17 FABRICATED METALS	0.0000	0.0000	0.0000	0.3745	2.4079	0.0000	0.1661
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19 MACHINE TOOLS AND SHOPS	0.0000	0.0000	0.0000	0.3745	0.0090	0.0000	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.9363	0.0539	0.0000	0.0000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.0845	0.0000	0.0000	0.0000	0.0000
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.1274	0.1419	0.3381	0.0000	0.0000	0.0000	0.0000
24 OTHER MANUFACTURING	0.0000	0.0000	0.0845	0.0000	0.0000	0.0000	0.0000
25 MISC. CONST., TRADE, SERVICE	6.9669	9.3403	3.4658	9.3633	10.0809	2.4390	3.8206
TOTAL LOCAL PURCHASES	32.5828	18.1840	8.5376	16.6667	51.7880	2.4390	11.4618
VALUE ADDED	33.5174	63.1355	88.4193	53.9326	31.5813	38.2114	45.0166
IMPORTS	33.8997	18.6805	3.0431	29.4007	16.6307	59.3496	43.5216
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0323	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	9.7204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 MINING	0.0000	0.0000	0.1161	0.0000	0.2910	0.0000	15.6250
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.2263	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.4988	0.0435	0.0000	0.0000	0.0000	0.0000
7 APPAREL	0.0218	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8 LUMBER AND WOOD PRODUCTS	22.2477	12.7182	9.5197	0.0000	0.0323	0.0377	0.0762
9 FURNITURE AND FIXTURES	0.0000	1.2469	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0437	1.7456	8.9827	8.3876	0.4526	0.0753	3.4299
11 PRINTING AND PUBLISHING	0.0983	0.0000	0.0290	2.1987	0.0970	0.0377	0.3811
12 CHEMICALS	0.8628	1.7456	1.7124	1.6287	2.3602	0.4896	0.3811
13 PETROLEUM REFINING	0.3277	0.2494	0.8652	0.0000	0.5173	0.7533	3.0488
14 STONE, CLAY AND GLASS	0.0983	0.0000	0.2467	0.0000	0.0970	0.0000	12.8049
15 IRON AND STEEL	0.0109	0.4988	0.0435	0.0000	0.0647	0.0000	0.4573
16 NONFERROUS METALS	0.0218	0.9975	0.0145	0.0000	0.5820	0.0000	0.0762
17 FABRICATED METALS	0.1311	0.0000	0.1161	0.1629	0.1617	0.4896	0.6098
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0546	0.0000	0.0000	0.0000	0.0000	0.0000	0.0762
19 MACHINE TOOLS AND SHOPS	0.0983	0.0000	0.0145	0.0000	0.1293	0.0000	0.6098
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.1201	0.0000	0.2322	0.0000	0.1617	0.0000	0.0000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.0000	0.0000	0.0323	0.1130	0.2287
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0323	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0109	0.0000	0.0000	0.0000	0.0000	0.0753	0.1524
24 OTHER MANUFACTURING	0.0000	0.4988	0.0580	0.0814	0.1940	0.0000	0.0000
25 MISC. CONST., TRADE, SERVICE	11.5662	10.2244	9.7809	9.2020	6.9512	5.9887	12.1189
TOTAL LOCAL PURCHASES	45.4347	30.4239	31.7951	21.6612	12.4151	8.0603	50.0762
VALUE ADDED	43.1083	49.8753	48.8463	60.0163	70.8050	24.0301	40.9299
IMPORTS	11.4570	19.7007	19.3586	18.3225	16.7798	67.9096	8.9939
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 MINING	0.4392	0.2392	0.0000	0.0000	0.0000	0.0000	0.0000
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7 APPAREL	0.0000	0.0239	0.0000	0.0000	0.0000	0.0000	0.0000
8 LUMBER AND WOOD PRODUCTS	0.1464	0.0957	0.0000	0.0000	0.0000	0.1499	0.0000
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0000	0.0239	0.4528	0.0000	0.0000	0.1499	0.7921
11 PRINTING AND PUBLISHING	0.0000	0.0239	0.0000	0.0000	0.0000	0.1499	0.0000
12 CHEMICALS	0.2928	0.1675	0.9056	0.0000	0.0000	0.0000	0.0000
13 PETROLEUM REFINING	0.0000	0.1675	0.1940	0.1767	0.0000	0.0000	0.0000
14 STONE, CLAY AND GLASS	2.3426	0.1196	0.1294	0.1767	0.3067	0.0000	0.0000
15 IRON AND STEEL	1.7570	0.1435	8.2147	4.5936	2.1472	0.2999	0.3960
16 NONFERROUS METALS	0.2928	3.8995	0.5175	0.8834	0.9202	0.1499	2.1782
17 FABRICATED METALS	0.1464	0.0239	2.4580	1.4134	0.3067	0.2999	0.0000
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.0000	0.5300	0.0000	0.4498	0.0000
19 MACHINE TOOLS AND SHOPS	0.1464	0.0000	0.3234	2.8269	2.1472	0.2999	0.1980
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0478	0.0000	0.8834	0.6135	0.5997	0.0000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.1294	0.3534	0.3067	0.4498	0.3960
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
24 OTHER MANUFACTURING	0.0000	0.0000	0.0000	0.0000	0.0000	0.1499	0.0000
25 MISC. CONST., TRADE, SERVICE	14.4949	8.5167	5.4334	4.0636	4.9080	5.3973	4.3564
TOTAL LOCAL PURCHASES	20.0586	13.4928	18.7581	15.9011	11.6564	8.5457	8.3168
VALUE ADDED	65.1537	35.7177	43.9845	54.2403	63.4969	57.7211	62.3762
IMPORTS	14.7877	50.7895	37.2574	29.8587	24.8466	33.7331	29.3069
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0036
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0250
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000
4 MINING	0.0000	0.0000	0.0000	0.2749
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	0.1392
6 TEXTILE MILL PRODUCTS	0.0083	0.0000	0.2188	0.0000
7 APPAREL	0.0000	0.0323	0.6565	0.0232
8 LUMBER AND WOOD PRODUCTS	0.0413	0.4204	0.6565	1.2496
9 FURNITURE AND FIXTURES	0.0083	0.0647	0.0000	0.0286
10 PAPER AND ALLIED PRODUCTS	0.0578	0.1294	0.8753	0.2803
11 PRINTING AND PUBLISHING	0.2149	0.0647	0.0000	1.2585
12 CHEMICALS	0.0661	0.3558	0.2188	0.1589
13 PETROLEUM REFINING	0.0744	0.0647	0.0000	0.9729
14 STONE, CLAY AND GLASS	0.0331	0.1940	0.0000	1.3228
15 IRON AND STEEL	0.0165	2.9107	0.0000	0.2499
16 NONFERROUS METALS	0.1901	0.6145	1.7505	0.0536
17 FABRICATED METALS	0.0826	1.1320	0.0000	0.8426
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.1617	0.0000	0.0036
19 MACHINE TOOLS AND SHOPS	0.6115	0.1617	0.2188	0.0714
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0083	0.0970	0.0000	0.0054
21 ELECTRICAL MACHINERY	0.2810	0.3881	0.0000	0.0411
22 AEROSPACE	1.2396	0.0000	0.0000	0.0143
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.2587	0.0000	0.0339
24 OTHER MANUFACTURING	0.1653	0.1940	4.3764	0.0321
25 MISC. CONST., TRADE, SERVICE	2.1155	4.4955	6.1269	13.5686
TOTAL LOCAL PURCHASES	5.2144	11.7400	15.0985	20.6537
VALUE ADDED	52.0040	57.3739	55.5799	69.6014
IMPORTS	42.7816	30.8862	29.3217	9.7449
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	1.1035	0.0000	0.0015	0.0000	0.1895	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0497	1.0250	0.0009	0.0000	0.1133	0.0000	0.0090
3 FORESTRY AND FISHERY PRODUCTS	0.0034	0.0008	1.0230	0.0002	0.0210	0.0000	0.0002
4 MINING	0.0010	0.0010	0.0011	1.0142	0.0031	0.0001	0.0003
5 FOOD AND KINDRED PRODUCTS	0.1713	0.0002	0.0088	0.0002	1.1158	0.0000	0.0001
6 TEXTILE MILL PRODUCTS	0.0001	0.0000	0.0052	0.0000	0.0004	1.0000	0.0087
7 APPAREL	0.0003	0.0003	0.0009	0.0000	0.0018	0.0000	1.0525
8 LUMBER AND WOOD PRODUCTS	0.0032	0.0080	0.0042	0.0024	0.0087	0.0005	0.0018
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0071	0.0210	0.0005	0.0037	0.0356	0.0001	0.0081
11 PRINTING AND PUBLISHING	0.0027	0.0018	0.0006	0.0017	0.0068	0.0004	0.0007
12 CHEMICALS	0.0016	0.0189	0.0002	0.0006	0.0048	0.0001	0.0022
13 PETROLEUM REFINING	0.0169	0.0209	0.0075	0.0250	0.0095	0.0003	0.0008
14 STONE, CLAY AND GLASS	0.0035	0.0033	0.0008	0.0280	0.0132	0.0004	0.0008
15 IRON AND STEEL	0.0008	0.0005	0.0003	0.0010	0.0030	0.0001	0.0003
16 NONFERROUS METALS	0.0004	0.0050	0.0001	0.0002	0.0009	0.0000	0.0001
17 FABRICATED METALS	0.0054	0.0013	0.0007	0.0053	0.0292	0.0003	0.0023
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
19 MACHINE TOOLS AND SHOPS	0.0002	0.0002	0.0001	0.0042	0.0004	0.0000	0.0001
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0001	0.0001	0.0000	0.0096	0.0007	0.0000	0.0000
21 ELECTRICAL MACHINERY	0.0001	0.0001	0.0009	0.0002	0.0002	0.0000	0.0000
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0016	0.0015	0.0035	0.0001	0.0006	0.0000	0.0000
24 OTHER MANUFACTURING	0.0001	0.0001	0.0009	0.0001	0.0001	0.0000	0.0000
25 MISC. CONST., TRADE, SERVICE	0.1185	0.1188	0.0443	0.1179	0.1703	0.0285	0.0496
TOTAL LOCAL PURCHASES	1.4913	1.2290	1.1062	1.2149	1.7290	1.0310	1.1377

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963(CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0002	0.0001	0.0001	0.0000	0.0005	0.0000	0.0001
2 OTHER AGRICULTURAL PRODUCTS	0.0002	0.0001	0.0001	0.0001	0.0006	0.0000	0.0001
3 FORESTRY AND FISHERY PRODUCTS	0.1282	0.0170	0.0136	0.0014	0.0003	0.0002	0.0010
4 MINING	0.0013	0.0010	0.0027	0.0009	0.0037	0.0004	0.1828
5 FOOD AND KINDRED PRODUCTS	0.0014	0.0004	0.0004	0.0003	0.0027	0.0001	0.0003
6 TEXTILE MILL PRODUCTS	0.0007	0.0052	0.0006	0.0001	0.0000	0.0000	0.0000
7 APPAREL	0.0005	0.0001	0.0001	0.0000	0.0000	0.0000	0.0001
8 LUMBER AND WOOD PRODUCTS	1.2897	0.1707	0.1371	0.0137	0.0026	0.0018	0.0099
9 FURNITURE AND FIXTURES	0.0001	1.0127	0.0000	0.0000	0.0000	0.0000	0.0001
10 PAPER AND ALLIED PRODUCTS	0.0018	0.0205	1.0998	0.0950	0.0058	0.0013	0.0453
11 PRINTING AND PUBLISHING	0.0037	0.0022	0.0024	1.0242	0.0022	0.0013	0.0071
12 CHEMICALS	0.0119	0.0204	0.0209	0.0191	1.0246	0.0053	0.0062
13 PETROLEUM REFINING	0.0072	0.0051	0.0122	0.0023	0.0065	1.0084	0.0420
14 STONE, CLAY AND GLASS	0.0043	0.0028	0.0056	0.0022	0.0026	0.0011	1.1549
15 IRON AND STEEL	0.0010	0.0058	0.0012	0.0006	0.0012	0.0007	0.0070
16 NONFERROUS METALS	0.0005	0.0109	0.0005	0.0002	0.0063	0.0001	0.0013
17 FABRICATED METALS	0.0035	0.0017	0.0029	0.0030	0.0026	0.0057	0.0100
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0007	0.0001	0.0001	0.0000	0.0000	0.0000	0.0009
19 MACHINE TOOLS AND SHOPS	0.0015	0.0004	0.0005	0.0002	0.0015	0.0001	0.0081
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0016	0.0003	0.0028	0.0003	0.0017	0.0000	0.0019
21 ELECTRICAL MACHINERY	0.0002	0.0001	0.0001	0.0001	0.0004	0.0012	0.0028
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0007	0.0001	0.0001	0.0001	0.0000	0.0008	0.0019
24 OTHER MANUFACTURING	0.0002	0.0054	0.0008	0.0010	0.0021	0.0000	0.0001
25 MISC. CONST., TRADE, SERVICE	0.1815	0.1512	0.1480	0.1242	0.0867	0.0717	0.1953
TOTAL LOCAL PURCHASES	1.6426	1.4341	1.4527	1.2890	1.1550	1.1004	1.6792

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0005	0.0003	0.0002	0.0001	0.0001	0.0003	0.0002
4 MINING	0.0098	0.0033	0.0015	0.0011	0.0011	0.0004	0.0004
5 FOOD AND KINDRED PRODUCTS	0.0003	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7 APPAREL	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000
8 LUMBER AND WOOD PRODUCTS	0.0051	0.0031	0.0022	0.0012	0.0012	0.0033	0.0020
9 FURNITURE AND FIXTURES	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0020	0.0009	0.0057	0.0006	0.0005	0.0022	0.0090
11 PRINTING AND PUBLISHING	0.0024	0.0016	0.0011	0.0008	0.0009	0.0024	0.0007
12 CHEMICALS	0.0036	0.0021	0.0101	0.0005	0.0003	0.0003	0.0003
13 PETROLEUM REFINING	0.0030	0.0030	0.0031	0.0026	0.0009	0.0007	0.0007
14 STONE, CLAY AND GLASS	0.0304	0.0032	0.0052	0.0045	0.0052	0.0012	0.0010
15 IRON AND STEEL	1.0188	0.0019	0.0861	0.0492	0.0229	0.0039	0.0043
16 NONFERROUS METALS	0.0033	1.0407	0.0060	0.0099	0.0100	0.0018	0.0228
17 FABRICATED METALS	0.0034	0.0012	1.0261	0.0153	0.0039	0.0038	0.0005
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.0000	1.0054	0.0000	0.0046	0.0000
19 MACHINE TOOLS AND SHOPS	0.0019	0.0001	0.0036	0.0293	1.0221	0.0033	0.0021
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0001	0.0005	0.0001	0.0091	0.0063	1.0061	0.0001
21 ELECTRICAL MACHINERY	0.0002	0.0001	0.0014	0.0038	0.0032	0.0046	1.0040
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
24 OTHER MANUFACTURING	0.0001	0.0000	0.0001	0.0000	0.0000	0.0016	0.0000
25 MISC. CONST., TRADE, SERVICE	0.1786	0.1049	0.0828	0.0612	0.0650	0.0659	0.0554
TOTAL LOCAL PURCHASES	1.2639	1.1676	1.2358	1.1948	1.1440	1.1066	1.1040

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963(CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0004
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0001	0.0005
3 FORESTRY AND FISHERY PRODUCTS	0.0001	0.0007	0.0011	0.0020
4 MINING	0.0002	0.0010	0.0005	0.0061
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0001	0.0001	0.0018
6 TEXTILE MILL PRODUCTS	0.0001	0.0000	0.0024	0.0000
7 APPAREL	0.0000	0.0004	0.0073	0.0003
8 LUMBER AND WOOD PRODUCTS	0.0011	0.0069	0.0114	0.0196
9 FURNITURE AND FIXTURES	0.0001	0.0007	0.0000	0.0003
10 PAPER AND ALLIED PRODUCTS	0.0011	0.0021	0.0105	0.0059
11 PRINTING AND PUBLISHING	0.0026	0.0015	0.0011	0.0151
12 CHEMICALS	0.0008	0.0041	0.0028	0.0027
13 PETROLEUM REFINING	0.0011	0.0015	0.0010	0.0123
14 STONE, CLAY AND GLASS	0.0008	0.0041	0.0013	0.0181
15 IRON AND STEEL	0.0005	0.0311	0.0004	0.0040
16 NONFERROUS METALS	0.0022	0.0068	0.0191	0.0008
17 FABRICATED METALS	0.0011	0.0123	0.0008	0.0104
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0016	0.0000	0.0001
19 MACHINE TOOLS AND SHOPS	0.0064	0.0019	0.0024	0.0011
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0001	0.0010	0.0001	0.0002
21 ELECTRICAL MACHINERY	0.0029	0.0040	0.0000	0.0006
22 AEROSPACE	1.0126	0.0000	0.0000	0.0002
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	1.0026	0.0000	0.0004
24 OTHER MANUFACTURING	0.0018	0.0021	1.0458	0.0004
25 MISC. CONST., TRADE, SERVICE	0.0266	0.0620	0.0801	1.1681
TOTAL LOCAL PURCHASES	1.0623	1.1485	1.1886	1.2713

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	6.9244	0.0000	0.0000	0.0000	15.8041	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	2.9312	2.4356	0.0000	0.0000	9.4070	0.0000	0.8306
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	2.1978	0.0000	1.7610	0.0000	0.0000
4 MINING	0.0000	0.0000	0.0845	0.9363	0.0449	0.0000	0.0000
5 FOOD AND KINDRED PRODUCTS	14.2736	0.0000	0.7608	0.0000	7.9155	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.5072	0.0000	0.0270	0.0000	0.8306
7 APPAREL	0.0000	0.0236	0.0845	0.0000	0.1438	0.0000	4.9834
8 LUMBER AND WOOD PRODUCTS	0.0000	0.2601	0.2536	0.0000	0.0809	0.0000	0.0000
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0425	1.7971	0.0000	0.1873	2.5606	0.0000	0.6645
11 PRINTING AND PUBLISHING	0.0425	0.0236	0.0000	0.0000	0.3863	0.0000	0.0000
12 CHEMICALS	0.0000	1.7262	0.0000	0.0000	0.1168	0.0000	0.1661
13 PETROLEUM REFINING	1.2744	1.8681	0.6762	2.2472	0.1977	0.0000	0.0000
14 STONE, CLAY AND GLASS	0.0000	0.1182	0.0000	2.2472	0.7907	0.0000	0.0000
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16 NONFERROUS METALS	0.0000	0.4493	0.0000	0.0000	0.0000	0.0000	0.0000
17 FABRICATED METALS	0.0000	0.0000	0.0000	0.3745	2.4079	0.0000	0.1661
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19 MACHINE TOOLS AND SHOPS	0.0000	0.0000	0.0000	0.3745	0.0090	0.0000	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.9363	0.0539	0.0000	0.0000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.0845	0.0000	0.0000	0.0000	0.0000
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.1274	0.1419	0.3381	0.0000	0.0000	0.0000	0.0000
24 OTHER MANUFACTURING	0.0000	0.0000	0.0845	0.0000	0.0000	0.0000	0.0000
25 MISC. CONST., TRADE, SERVICE	6.9669	9.3403	3.4658	9.3633	10.0809	2.4390	3.8206
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	26.0723	49.1114	68.7790	41.9527	24.5663	29.7236	35.0172
TOTAL LOCAL PURCHASES	58.6551	67.2954	77.3166	58.6194	76.3542	32.1626	46.4790
OTHER LOCAL PAYMENTS	7.4451	14.0241	19.6403	11.9799	7.0151	8.4878	9.9994
IMPORTS	33.8997	18.6805	3.0431	29.4007	16.6307	59.3496	43.5216
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0323	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	9.7204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 MINING	0.0000	0.0000	0.1161	0.0000	0.2910	0.0000	15.6250
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.2263	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.4988	0.0435	0.0000	0.0000	0.0000	0.0000
7 APPAREL	0.0218	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8 LUMBER AND WOOD PRODUCTS	22.2477	12.7182	9.5197	0.0000	0.0323	0.0377	0.0762
9 FURNITURE AND FIXTURES	0.0000	1.2469	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0437	1.7456	8.9827	8.3876	0.4526	0.0753	3.4299
11 PRINTING AND PUBLISHING	0.0983	0.0000	0.0290	2.1987	0.0970	0.0377	0.3811
12 CHEMICALS	0.8628	1.7456	1.7124	1.6287	2.3602	0.4896	0.3811
13 PETROLEUM REFINING	0.3277	0.2494	0.8852	0.0000	0.5173	0.7533	3.0488
14 STONE, CLAY AND GLASS	0.0983	0.0000	0.2467	0.0000	0.0970	0.0000	12.8049
15 IRON AND STEEL	0.0109	0.4988	0.0435	0.0000	0.0647	0.0000	0.4573
16 NONFERROUS METALS	0.0218	0.9975	0.0145	0.0000	0.5820	0.0000	0.0762
17 FABRICATED METALS	0.1311	0.0000	0.1161	0.1629	0.1617	0.4896	0.6098
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0546	0.0000	0.0000	0.0000	0.0000	0.0000	0.0762
19 MACHINE TOOLS AND SHOPS	0.0983	0.0000	0.0145	0.0000	0.1293	0.0000	0.6098
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.1201	0.0000	0.2322	0.0000	0.1617	0.0000	0.0000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.0000	0.0000	0.0323	0.1130	0.2287
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0323	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0109	0.0000	0.0000	0.0000	0.0000	0.0753	0.1524
24 OTHER MANUFACTURING	0.0000	0.4988	0.0580	0.0814	0.1940	0.0000	0.0000
25 MISC. CONST., TRADE, SERVICE	11.5662	10.2244	9.7809	9.2020	6.9512	5.9887	12.1189
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	33.5328	38.7947	37.9963	46.6851	55.0774	18.6924	31.8383
TOTAL LOCAL PURCHASES	78.9675	69.2206	69.7913	68.3463	67.4925	26.7527	81.9145
OTHER LOCAL PAYMENTS	9.5755	11.0786	10.8501	13.3312	15.7277	5.3377	9.0916
IMPORTS	11.4570	19.7007	19.3586	18.3225	16.7798	67.9096	8.9939
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 MINING	0.4392	0.2392	0.0000	0.0000	0.0000	0.0000	0.0000
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7 APPAREL	0.0000	0.0239	0.0000	0.0000	0.0000	0.0000	0.0000
8 LUMBER AND WOOD PRODUCTS	0.1464	0.0957	0.0000	0.0000	0.0000	0.1499	0.0000
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0000	0.0239	0.4528	0.0000	0.0000	0.1499	0.7921
11 PRINTING AND PUBLISHING	0.0000	0.0239	0.0000	0.0000	0.0000	0.1499	0.0000
12 CHEMICALS	0.2928	0.1675	0.9056	0.0000	0.0000	0.0000	0.0000
13 PETROLEUM REFINING	0.0000	0.1675	0.1940	0.1767	0.0000	0.0000	0.0000
14 STONE, CLAY AND GLASS	2.3426	0.1196	0.1294	0.1767	0.3067	0.0000	0.0000
15 IRON AND STEEL	1.7570	0.1435	8.2147	4.5936	2.1472	0.2999	0.3960
16 NONFERROUS METALS	0.2928	3.8995	0.5175	0.8834	0.9202	0.1499	2.1782
17 FABRICATED METALS	0.1464	0.0239	2.4580	1.4134	0.3067	0.2999	0.0000
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.0000	0.5300	0.0000	0.4498	0.0000
19 MACHINE TOOLS AND SHOPS	0.1464	0.0000	0.3234	2.8269	2.1472	0.2999	0.1980
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0478	0.0000	0.8834	0.6135	0.5997	0.0000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.1294	0.3534	0.3067	0.4498	0.3960
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
24 OTHER MANUFACTURING	0.0000	0.0000	0.0000	0.0000	0.0000	0.1499	0.0000
25 MISC. CONST., TRADE, SERVICE	14.4949	8.5167	5.4334	4.0636	4.9080	5.3973	4.3564
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	50.6814	27.7839	34.2144	42.1921	49.3926	44.8997	48.5208
TOTAL LOCAL PURCHASES	70.7399	41.2767	52.9724	58.0931	61.0490	53.4455	56.8376
OTHER LOCAL PAYMENTS	14.4724	7.9339	9.7701	12.0482	14.1044	12.8214	13.8554
IMPORTS	14.7877	50.7895	37.2574	29.8587	24.8466	33.7331	29.3069
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963(CONTINUED)

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25	26
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0036	0.5459
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0250	0.3715
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0326
4 MINING	0.0000	0.0000	0.0000	0.2749	0.0028
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	0.1392	6.7624
6 TEXTILE MILL PRODUCTS	0.0083	0.0000	0.2188	0.0000	0.0269
7 APPAREL	0.0000	0.0323	0.6565	0.0232	0.2340
8 LUMBER AND WOOD PRODUCTS	0.0413	0.4204	0.6565	1.2496	0.0567
9 FURNITURE AND FIXTURES	0.0083	0.0647	0.0000	0.0286	0.1645
10 PAPER AND ALLIED PRODUCTS	0.0578	0.1294	0.8753	0.2803	0.1560
11 PRINTING AND PUBLISHING	0.2149	0.0647	0.0000	1.2585	0.4325
12 CHEMICALS	0.0661	0.3558	0.2188	0.1589	0.0468
13 PETROLEUM REFINING	0.0744	0.0647	0.0000	0.9729	1.5258
14 STONE, CLAY AND GLASS	0.0331	0.1940	0.0000	1.3228	0.1248
15 IRON AND STEEL	0.0165	2.9107	0.0000	0.2499	0.0326
16 NONFERROUS METALS	0.1901	0.6145	1.7505	0.0536	0.0326
17 FABRICATED METALS	0.0826	1.1320	0.0000	0.8426	0.1149
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.1617	0.0000	0.0036	0.3120
19 MACHINE TOOLS AND SHOPS	0.6115	0.1617	0.2188	0.0714	0.0255
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0083	0.0970	0.0000	0.0054	0.1134
21 ELECTRICAL MACHINERY	0.2810	0.3881	0.0000	0.0411	0.0482
22 AEROSPACE	1.2396	0.0000	0.0000	0.0143	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.2587	0.0000	0.0339	0.1503
24 OTHER MANUFACTURING	0.1653	0.1940	4.3764	0.0321	0.1049
25 MISC. CONST., TRADE, SERVICE	2.1155	4.4955	6.1269	13.5686	49.5831
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	40.4525	44.6296	43.2341	54.1411	0.0000
TOTAL LOCAL PURCHASES	45.6669	56.3696	58.3326	74.7948	61.0008
OTHER LOCAL PAYMENTS	11.5515	12.7443	12.3458	15.4603	12.1040
IMPORTS	42.7816	30.8862	29.3217	9.7449	26.8952
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	1.1170	0.0187	0.0245	0.0161	0.2059	0.0098	0.0127
2 OTHER AGRICULTURAL PRODUCTS	0.0582	1.0368	0.0154	0.0102	0.1237	0.0062	0.0170
3 FORESTRY AND FISHERY PRODUCTS	0.0055	0.0036	1.0265	0.0027	0.0235	0.0015	0.0021
4 MINING	0.0035	0.0044	0.0054	1.0172	0.0062	0.0020	0.0027
5 FOOD AND KINDRED PRODUCTS	0.2262	0.0759	0.1022	0.0653	1.1826	0.0397	0.0518
6 TEXTILE MILL PRODUCTS	0.0003	0.0004	0.0056	0.0003	0.0007	1.0002	0.0090
7 APPAREL	0.0023	0.0030	0.0043	0.0023	0.0042	0.0014	1.0543
8 LUMBER AND WOOD PRODUCTS	0.0115	0.0194	0.0183	0.0123	0.0189	0.0065	0.0097
9 FURNITURE AND FIXTURES	0.0013	0.0018	0.0022	0.0016	0.0016	0.0010	0.0012
10 PAPER AND ALLIED PRODUCTS	0.0126	0.0286	0.0099	0.0102	0.0422	0.0041	0.0133
11 PRINTING AND PUBLISHING	0.0116	0.0140	0.0157	0.0122	0.0176	0.0068	0.0090
12 CHEMICALS	0.0034	0.0214	0.0032	0.0027	0.0070	0.0013	0.0039
13 PETROLEUM REFINING	0.0328	0.0429	0.0346	0.0439	0.0289	0.0118	0.0158
14 STONE, CLAY AND GLASS	0.0116	0.0145	0.0146	0.0376	0.0230	0.0063	0.0084
15 IRON AND STEEL	0.0029	0.0033	0.0037	0.0034	0.0055	0.0016	0.0022
16 NONFERROUS METALS	0.0010	0.0059	0.0012	0.0010	0.0017	0.0005	0.0007
17 FABRICATED METALS	0.0115	0.0096	0.0110	0.0125	0.0366	0.0046	0.0080
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0023	0.0031	0.0039	0.0028	0.0028	0.0016	0.0021
19 MACHINE TOOLS AND SHOPS	0.0008	0.0011	0.0012	0.0050	0.0013	0.0005	0.0007
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0011	0.0014	0.0016	0.0107	0.0019	0.0007	0.0009
21 ELECTRICAL MACHINERY	0.0007	0.0009	0.0019	0.0009	0.0009	0.0004	0.0006
22 AEROSPACE	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0001
23 OTHER TRANSPORTATION EQUIPMENT	0.0028	0.0033	0.0057	0.0016	0.0021	0.0009	0.0012
24 OTHER MANUFACTURING	0.0010	0.0014	0.0025	0.0012	0.0013	0.0007	0.0009
25 MISC. CONST., TRADE, SERVICE	0.5412	0.7011	0.7635	0.6192	0.6846	0.3334	0.4477
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.7103	0.9784	1.2084	0.8423	0.8642	0.5124	0.6689
TOTAL LOCAL PURCHASES	2.7734	2.9949	3.2872	2.7352	3.2887	1.9559	2.3450

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

	SELLING INDUSTRY	8	9	10	11	12	13	14
1	LIVESTOCK AND PRODUCTS	0.0200	0.0180	0.0180	0.0187	0.0199	0.0074	0.0187
2	OTHER AGRICULTURAL PRODUCTS	0.0127	0.0114	0.0114	0.0119	0.0129	0.0047	0.0119
3	FORESTRY AND FISHERY PRODUCTS	0.1312	0.0197	0.0164	0.0042	0.0033	0.0013	0.0038
4	MINING	0.0050	0.0044	0.0060	0.0044	0.0073	0.0018	0.1863
5	FOOD AND KINDRED PRODUCTS	0.0818	0.0733	0.0731	0.0762	0.0818	0.0299	0.0763
6	TEXTILE MILL PRODUCTS	0.0010	0.0055	0.0009	0.0004	0.0004	0.0001	0.0004
7	APPAREL	0.0033	0.0027	0.0027	0.0027	0.0028	0.0011	0.0027
8	LUMBER AND WOOD PRODUCTS	1.3019	0.1818	0.1481	0.0252	0.0146	0.0063	0.0214
9	FURNITURE AND FIXTURES	0.0020	1.0144	0.0018	0.0018	0.0019	0.0007	0.0019
10	PAPER AND ALLIED PRODUCTS	0.0098	0.0277	1.1071	0.1026	0.0137	0.0043	0.0529
11	PRINTING AND PUBLISHING	0.0166	0.0139	0.0141	1.0364	0.0149	0.0061	0.0193
12	CHEMICALS	0.0145	0.0227	0.0232	0.0216	1.0271	0.0063	0.0086
13	PETROLEUM REFINING	0.0305	0.0263	0.0332	0.0244	0.0294	1.0170	0.0641
14	STONE, CLAY AND GLASS	0.0162	0.0135	0.0164	0.0135	0.0143	0.0055	1.1661
15	IRON AND STEEL	0.0040	0.0085	0.0039	0.0035	0.0041	0.0018	0.0098
16	NONFERROUS METALS	0.0015	0.0118	0.0013	0.0012	0.0073	0.0005	0.0022
17	FABRICATED METALS	0.0124	0.0097	0.0110	0.0114	0.0114	0.0090	0.0184
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0040	0.0031	0.0031	0.0031	0.0033	0.0012	0.0040
19	MACHINE TOOLS AND SHOPS	0.0025	0.0012	0.0014	0.0011	0.0024	0.0005	0.0091
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0030	0.0016	0.0040	0.0016	0.0031	0.0005	0.0032
21	ELECTRICAL MACHINERY	0.0011	0.0009	0.0009	0.0009	0.0012	0.0015	0.0036
22	AEROSPACE	0.0001	0.0001	0.0001	0.0001	0.0004	0.0000	0.0001
23	OTHER TRANSPORTATION EQUIPMENT	0.0025	0.0018	0.0018	0.0018	0.0019	0.0015	0.0036
24	OTHER MANUFACTURING	0.0016	0.0067	0.0020	0.0023	0.0035	0.0006	0.0014
25	MISC. CONST., TRADE, SERVICE	0.8002	0.7123	0.7075	0.7090	0.6957	0.3012	0.7797
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	1.0396	0.9428	0.9402	0.9826	1.0234	0.3857	0.9820
	TOTAL LOCAL PURCHASES	3.5189	3.1358	3.1496	3.0625	3.0022	1.7965	3.4517

	SELLING INDUSTRY	15	16	17	18	19	20	21
1	LIVESTOCK AND PRODUCTS	0.0198	0.0110	0.0142	0.0160	0.0175	0.0156	0.0166
2	OTHER AGRICULTURAL PRODUCTS	0.0126	0.0070	0.0090	0.0101	0.0111	0.0099	0.0105
3	FORESTRY AND FISHERY PRODUCTS	0.0035	0.0020	0.0024	0.0025	0.0028	0.0027	0.0027
4	MINING	0.0135	0.0054	0.0041	0.0041	0.0044	0.0033	0.0035
5	FOOD AND KINDRED PRODUCTS	0.0807	0.0449	0.0578	0.0651	0.0713	0.0635	0.0674
6	TEXTILE MILL PRODUCTS	0.0004	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003
7	APPAREL	0.0029	0.0019	0.0021	0.0023	0.0025	0.0023	0.0024
8	LUMBER AND WOOD PRODUCTS	0.0173	0.0099	0.0110	0.0110	0.0120	0.0129	0.0122
9	FURNITURE AND FIXTURES	0.0020	0.0011	0.0014	0.0016	0.0017	0.0015	0.0016
10	PAPER AND ALLIED PRODUCTS	0.0100	0.0054	0.0115	0.0071	0.0077	0.0085	0.0157
11	PRINTING AND PUBLISHING	0.0154	0.0088	0.0104	0.0113	0.0124	0.0126	0.0116
12	CHEMICALS	0.0062	0.0035	0.0120	0.0026	0.0026	0.0023	0.0025
13	PETROLEUM REFINING	0.0263	0.0160	0.0198	0.0215	0.0215	0.0191	0.0202
14	STONE, CLAY AND GLASS	0.0422	0.0098	0.0137	0.0141	0.0158	0.0105	0.0110
15	IRON AND STEEL	1.0218	0.0036	0.0883	0.0516	0.0255	0.0062	0.0068
16	NONFERROUS METALS	0.0043	1.0412	0.0067	0.0107	0.0109	0.0026	0.0236
17	FABRICATED METALS	0.0123	0.0062	1.0325	0.0225	0.0118	0.0108	0.0080
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0033	0.0019	0.0024	1.0081	0.0030	0.0072	0.0028
19	MACHINE TOOLS AND SHOPS	0.0029	0.0007	0.0043	0.0301	1.0230	0.0041	0.0029
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0015	0.0013	0.0011	0.0102	0.0075	1.0072	0.0012
21	ELECTRICAL MACHINERY	0.0010	0.0005	0.0020	0.0044	0.0040	0.0053	1.0047
22	AEROSPACE	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
23	OTHER TRANSPORTATION EQUIPMENT	0.0020	0.0011	0.0014	0.0015	0.0017	0.0015	0.0016
24	OTHER MANUFACTURING	0.0015	0.0008	0.0010	0.0012	0.0013	0.0027	0.0012
25	MISC. CONST., TRADE, SERVICE	0.7978	0.4495	0.5262	0.5614	0.6132	0.5540	0.5732
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	1.0405	0.5791	0.7450	0.8406	0.9213	0.8201	0.8700
	TOTAL LOCAL PURCHASES	3.1418	2.2128	2.5804	2.7120	2.8068	2.5868	2.6742

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)				
SELLING INDUSTRY	22	23	24	25	26
1 LIVESTOCK AND PRODUCTS	0.0135	0.0161	0.0161	0.0212	0.0311
2 OTHER AGRICULTURAL PRODUCTS	0.0085	0.0102	0.0103	0.0136	0.0196
3 FORESTRY AND FISHERY PRODUCTS	0.0022	0.0031	0.0036	0.0051	0.0047
4 MINING	0.0027	0.0040	0.0035	0.0100	0.0058
5 FOOD AND KINDRED PRODUCTS	0.0549	0.0654	0.0655	0.0865	0.1263
6 TEXTILE MILL PRODUCTS	0.0003	0.0003	0.0026	0.0004	0.0006
7 APPAREL	0.0020	0.0027	0.0096	0.0033	0.0045
8 LUMBER AND WOOD PRODUCTS	0.0094	0.0168	0.0214	0.0324	0.0192
9 FURNITURE AND FIXTURES	0.0014	0.0022	0.0016	0.0024	0.0030
10 PAPER AND ALLIED PRODUCTS	0.0065	0.0086	0.0171	0.0143	0.0126
11 PRINTING AND PUBLISHING	0.0114	0.0120	0.0116	0.0288	0.0204
12 CHEMICALS	0.0026	0.0062	0.0050	0.0054	0.0041
13 PETROLEUM REFINING	0.0170	0.0205	0.0200	0.0369	0.0367
14 STONE, CLAY AND GLASS	0.0089	0.0137	0.0110	0.0306	0.0186
15 IRON AND STEEL	0.0025	0.0335	0.0028	0.0071	0.0047
16 NONFERROUS METALS	0.0028	0.0076	0.0199	0.0018	0.0015
17 FABRICATED METALS	0.0072	0.0195	0.0080	0.0198	0.0140
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0023	0.0043	0.0027	0.0036	0.0052
19 MACHINE TOOLS AND SHOPS	0.0070	0.0027	0.0032	0.0021	0.0015
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0011	0.0022	0.0012	0.0016	0.0022
21 ELECTRICAL MACHINERY	0.0035	0.0047	0.0007	0.0015	0.0013
22 AEROSPACE	1.0126	0.0001	0.0001	0.0003	0.0001
23 OTHER TRANSPORTATION EQUIPMENT	0.0013	1.0041	0.0016	0.0024	0.0029
24 OTHER MANUFACTURING	0.0027	0.0032	1.0469	0.0019	0.0022
25 MISC. CONST., TRADE, SERVICE	0.4485	0.5645	0.5833	1.8197	0.9725
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.7089	0.8445	0.8455	1.0948	1.6341
TOTAL LOCAL PURCHASES	2.3418	2.6727	2.7147	3.2473	2.9493

TABLE 6. INCOME MULTIPLIERS, WASHINGTON, 1963

(IN PERCENT)

	LOCAL PRIVATE INCOME CHANGES PER DOLLAR DELIVERY TO FINAL DEMAND				MULTIPLIERS	
INDUSTRY	DIRECT	INDIRECT	INDUCED	TOTAL	SIMPLE	TOTAL
1 LIVESTOCK AND PRODUCTS	0.261	0.174	0.276	0.710	1.667	2.724
2 OTHER AGRICULTURAL PRODUCTS	0.491	0.108	0.380	0.978	1.219	1.992
3 FORESTRY AND FISHERY PRODUCTS	0.688	0.052	0.469	1.208	1.075	1.757
4 MINING	0.420	0.096	0.327	0.842	1.229	2.008
5 FOOD AND KINDRED PRODUCTS	0.246	0.283	0.335	0.864	2.153	3.518
6 TEXTILE MILL PRODUCTS	0.297	0.016	0.199	0.512	1.055	1.724
7 APPAREL	0.350	0.059	0.260	0.669	1.169	1.910
8 LUMBER AND WOOD PRODUCTS	0.335	0.301	0.403	1.040	1.897	3.100
9 FURNITURE AND FIXTURES	0.388	0.189	0.366	0.943	1.487	2.430
10 PAPER AND ALLIED PRODUCTS	0.380	0.195	0.365	0.940	1.514	2.474
11 PRINTING AND PUBLISHING	0.467	0.134	0.381	0.983	1.288	2.105
12 CHEMICALS	0.551	0.076	0.397	1.023	1.137	1.858
13 PETROLEUM REFINING	0.187	0.049	0.150	0.386	1.263	2.063
14 STONE, CLAY AND GLASS	0.318	0.283	0.381	0.982	1.888	3.084
15 IRON AND STEEL	0.507	0.130	0.404	1.040	1.256	2.053
16 NONFERROUS METALS	0.278	0.077	0.225	0.579	1.275	2.084
17 FABRICATED METALS	0.342	0.114	0.289	0.745	1.333	2.177
18 NONELECTRICAL MOTIVE EQUIPMENT	0.422	0.093	0.326	0.841	1.219	1.992
19 MACHINE TOOLS AND SHOPS	0.494	0.070	0.357	0.921	1.141	1.865
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.449	0.053	0.318	0.820	1.118	1.826
21 ELECTRICAL MACHINERY	0.485	0.047	0.338	0.870	1.097	1.793
22 AEROSPACE	0.405	0.029	0.275	0.709	1.072	1.752
23 OTHER TRANSPORTATION EQUIPMENT	0.446	0.070	0.328	0.844	1.158	1.892
24 OTHER MANUFACTURING	0.432	0.085	0.328	0.846	1.197	1.956
25 MISC. CONST., TRADE, SERVICE	0.541	0.129	0.425	1.095	1.237	2.022
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.000	0.000	1.634	1.634	0.000	0.000

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	31.1	27.8	12.6	0.0	235.3	0.1	0.0
2 OTHER AGRICULTURAL PRODUCTS	55.8	7.2	31.3	0.0	21.3	0.1	0.0
3 FORESTRY AND FISHERY PRODUCTS	4.2	14.6	0.8	0.0	0.0	0.0	0.4
4 MINING	0.1	1.4	0.0	3.5	0.9	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	0.0	0.1	0.7	0.0	159.7	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.1	0.0	0.7	0.0	0.0	3.1	0.0
7 APPAREL	0.1	0.6	0.0	0.0	2.1	0.1	9.2
8 LUMBER AND WOOD PRODUCTS	0.0	1.9	0.0	0.0	1.7	0.0	0.0
9 FURNITURE AND FIXTURES	0.0	0.0	0.0	0.0	0.0	0.0	0.1
10 PAPER AND ALLIED PRODUCTS	0.1	0.0	0.9	0.3	17.4	0.1	0.6
11 PRINTING AND PUBLISHING	0.0	0.1	0.0	0.0	1.6	0.0	0.1
12 CHEMICALS	0.0	0.0	0.0	0.9	7.4	0.0	0.6
13 PETROLEUM REFINING	0.0	9.1	0.3	0.5	4.1	0.0	0.0
14 STONE, CLAY AND GLASS	0.0	0.5	0.0	2.1	5.4	0.0	0.0
15 IRON AND STEEL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 NONFERROUS METALS	0.0	0.0	0.0	0.1	0.6	0.0	0.0
17 FABRICATED METALS	0.1	0.0	0.4	0.0	19.1	0.0	0.1
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	3.6	0.0	2.3	0.0	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.0	0.1	0.0	0.0	0.3	0.0	0.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.0	0.0	0.2	0.0	0.1	0.0
21 ELECTRICAL MACHINERY	0.1	0.4	0.0	0.2	0.6	0.0	0.0
22 AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.0	0.1	0.5	0.0	0.0	0.0	0.0
24 OTHER MANUFACTURING	0.2	2.7	0.4	0.2	2.4	0.1	1.5
25 MISC. CONST., TRADE, SERVICE	0.0	66.6	7.0	0.0	118.6	0.2	1.6
TOTAL LOCAL PURCHASES	91.9	136.8	55.7	10.3	598.4	4.0	14.3
VALUE ADDED	63.7	207.1	59.0	27.4	329.5	1.0	19.7
IMPORTS	79.8	79.0	3.6	15.7	185.1	7.3	26.2
TOTAL PURCHASES	235.4	422.9	118.3	53.4	1113.0	12.3	60.2

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	19.9	0.0	0.0	0.0	0.3	0.0	0.1
3 FORESTRY AND FISHERY PRODUCTS	78.0	0.0	0.0	0.0	0.3	0.0	0.0
4 MINING	0.2	0.0	7.4	0.0	10.1	0.0	7.0
5 FOOD AND KINDRED PRODUCTS	0.0	0.2	2.1	0.0	3.8	0.2	0.1
6 TEXTILE MILL PRODUCTS	0.2	1.9	0.0	0.2	0.1	0.0	0.2
7 APPAREL	1.3	0.1	1.8	0.0	0.8	0.1	0.1
8 LUMBER AND WOOD PRODUCTS	249.2	3.3	27.6	0.0	0.8	0.0	0.6
9 FURNITURE AND FIXTURES	2.3	1.1	0.1	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	10.0	0.6	135.9	21.3	4.7	1.3	4.4
11 PRINTING AND PUBLISHING	3.4	0.0	6.3	13.8	0.8	0.0	0.3
12 CHEMICALS	14.0	0.5	1.4	1.7	51.3	0.2	4.7
13 PETROLEUM REFINING	6.2	0.1	4.6	0.1	15.1	7.3	1.4
14 STONE, CLAY AND GLASS	4.4	0.9	1.7	0.0	1.4	0.5	14.0
15 IRON AND STEEL	0.0	1.5	0.0	0.0	4.4	0.0	0.0
16 NONFERROUS METALS	0.6	0.4	0.9	0.1	2.7	0.0	0.2
17 FABRICATED METALS	6.7	1.5	4.6	0.0	1.8	2.6	1.6
18 NONELECTRICAL MOTIVE EQUIPMENT	0.3	0.0	0.0	0.0	0.1	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.0	0.1	0.8	0.0	0.0	0.0	0.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.5	0.2	0.0	0.4	2.3	0.0	0.0
21 ELECTRICAL MACHINERY	1.2	0.1	0.2	0.1	0.0	0.1	0.5
22 AEROSPACE	0.0	0.0	0.0	0.2	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 OTHER MANUFACTURING	6.9	0.6	8.6	1.0	0.0	0.1	1.5
25 MISC. CONST., TRADE, SERVICE	112.3	3.7	57.4	16.3	32.2	11.8	19.5
TOTAL LOCAL PURCHASES	517.7	16.9	261.4	55.3	133.2	24.4	56.1
VALUE ADDED	293.0	15.3	294.3	45.0	124.2	59.8	63.3
IMPORTS	104.9	7.9	133.4	22.5	51.9	180.3	11.8
TOTAL PURCHASES	915.6	40.1	689.1	122.8	309.3	265.5	131.2

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 196:

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 MINING	4.7	33.6	0.1	0.0	0.0	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.8	0.1	0.0	0.0	0.1	0.0
7 APPAREL	0.1	0.3	0.2	0.0	0.0	0.1	0.0
8 LUMBER AND WOOD PRODUCTS	0.1	0.1	0.6	0.1	0.0	0.3	0.1
9 FURNITURE AND FIXTURES	0.0	0.0	0.3	0.0	0.0	0.0	0.4
10 PAPER AND ALLIED PRODUCTS	0.2	1.4	1.2	0.1	0.0	0.3	0.6
11 PRINTING AND PUBLISHING	0.1	0.4	0.2	0.0	0.0	0.1	0.1
12 CHEMICALS	0.6	8.4	0.4	0.2	0.0	0.3	0.5
13 PETROLEUM REFINING	0.3	0.0	0.0	0.2	0.3	0.3	0.1
14 STONE, CLAY AND GLASS	0.0	1.4	0.2	0.3	0.5	0.4	0.0
15 IRON AND STEEL	13.4	0.9	21.1	0.0	0.0	0.0	0.4
16 NONFERROUS METALS	1.1	0.0	0.0	0.3	1.2	2.2	1.3
17 FABRICATED METALS	1.6	8.2	0.0	0.1	1.1	1.2	1.5
18 NONELECTRICAL MOTIVE EQUIPMENT	0.2	0.1	1.2	3.8	0.3	0.0	0.4
19 MACHINE TOOLS AND SHOPS	0.8	4.4	2.2	1.2	2.6	1.4	0.5
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.2	1.5	2.9	3.0	0.6	3.7	0.5
21 ELECTRICAL MACHINERY	0.0	6.5	1.0	1.0	0.4	1.4	0.1
22 AEROSPACE	0.0	0.1	0.3	0.1	0.1	0.4	0.6
23 OTHER TRANSPORTATION EQUIPMENT	0.2	0.8	1.5	1.0	0.3	0.5	0.2
24 OTHER MANUFACTURING	0.3	1.4	1.9	1.3	0.0	0.7	1.3
25 MISC. CONST., TRADE, SERVICE	6.7	3.8	9.8	3.9	2.5	4.6	3.0
TOTAL LOCAL PURCHASES	30.5	74.1	45.2	16.9	10.1	17.8	11.6
VALUE ADDED	27.7	131.6	51.8	22.8	14.4	26.4	24.1
IMPORTS	10.1	212.3	57.6	16.9	8.1	22.5	14.8
TOTAL PURCHASES	68.3	418.0	154.6	56.6	32.6	66.7	50.5

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	1.8
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	5.1
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	2.6
4 MINING	0.2	0.2	0.0	45.5
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	13.1
6 TEXTILE MILL PRODUCTS	0.0	0.0	0.8	1.4
7 APPAREL	1.1	0.8	0.1	3.9
8 LUMBER AND WOOD PRODUCTS	1.6	5.3	0.2	14.5
9 FURNITURE AND FIXTURES	0.9	2.5	0.0	0.5
10 PAPER AND ALLIED PRODUCTS	0.0	0.7	1.8	28.3
11 PRINTING AND PUBLISHING	0.0	0.0	0.2	48.2
12 CHEMICALS	0.0	2.6	0.0	27.6
13 PETROLEUM REFINING	2.6	1.0	0.1	47.6
14 STONE, CLAY AND GLASS	3.5	3.2	0.2	12.3
15 IRON AND STEEL	18.2	24.4	0.0	13.3
16 NONFERROUS METALS	9.0	3.2	0.6	0.0
17 FABRICATED METALS	18.1	11.5	0.8	4.7
18 NONELECTRICAL MOTIVE EQUIPMENT	2.0	4.7	0.0	7.3
19 MACHINE TOOLS AND SHOPS	29.9	2.0	0.2	2.4
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	4.6	1.3	0.1	12.4
21 ELECTRICAL MACHINERY	19.5	2.7	0.0	17.0
22 AEROSPACE	0.0	1.1	0.2	22.9
23 OTHER TRANSPORTATION EQUIPMENT	4.0	15.7	0.1	6.0
24 OTHER MANUFACTURING	15.6	0.0	4.3	40.7
25 MISC. CONST., TRADE, SERVICE	11.4	18.4	4.5	1087.0
TOTAL LOCAL PURCHASES	142.1	101.2	14.4	1466.1
VALUE ADDED	550.3	112.5	17.9	3589.9
IMPORTS	517.7	95.5	13.4	545.9
TOTAL PURCHASES	1210.1	309.2	45.7	5601.9

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963 (CONTINUED)

(MILLIONS OF DOLLARS)

SELLING INDUSTRY	TOTAL LOCAL SALES	FINAL DEMAND: LOCAL PRIVATE USE	FINAL DEMAND: STATE AND LOCAL GOVERNMENT	FINAL DEMAND: FEDERAL GOVERNMENT	FINAL DEMAND: EXPORTS	TOTAL FINAL DEMAND	TOTAL SALES
1 LIVESTOCK AND PRODUCTS	308.7	38.5	0.0	0.0	-111.8	-73.3	235.4
2 OTHER AGRICULTURAL PRODUCTS	141.1	26.2	0.1	0.0	255.5	281.8	422.9
3 FORESTRY AND FISHERY PRODUCTS	101.0	2.3	0.0	0.0	21.0	23.3	124.3
4 MINING	115.2	0.2	0.3	2.9	-201.4	-198.0	-82.9
5 FOOD AND KINDRED PRODUCTS	180.1	476.9	11.8	34.7	412.0	935.4	1115.5
6 TEXTILE MILL PRODUCTS	9.7	1.9	0.0	1.2	6.1	9.2	18.9
7 APPAREL	22.9	16.5	0.1	0.2	20.6	37.4	60.3
8 LUMBER AND WOOD PRODUCTS	308.0	4.0	2.0	9.5	592.2	607.7	915.7
9 FURNITURE AND FIXTURES	8.2	11.6	0.8	0.1	19.4	31.9	40.1
10 PAPER AND ALLIED PRODUCTS	232.3	11.0	2.1	5.7	438.8	457.6	689.9
11 PRINTING AND PUBLISHING	75.6	30.5	1.2	0.0	21.1	52.8	128.4
12 CHEMICALS	123.3	3.3	0.8	210.3	-9.0	205.4	328.7
13 PETROLEUM REFINING	101.4	107.6	5.9	10.6	46.3	170.4	271.8
14 STONE, CLAY AND GLASS	52.8	8.8	1.4	2.1	66.5	78.8	131.6
15 IRON AND STEEL	97.8	2.3	0.2	2.6	-25.5	-20.4	77.4
16 NONFERROUS METALS	24.5	2.3	0.0	0.7	420.9	423.9	448.4
17 FABRICATED METALS	87.3	8.1	1.1	7.2	54.1	70.5	157.8
18 NONELECTRICAL MOTIVE EQUIPMENT	26.3	22.0	0.3	2.1	7.3	31.7	58.0
19 MACHINE TOOLS AND SHOPS	48.9	1.8	0.4	3.9	-21.6	-15.5	33.4
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	34.5	8.0	0.1	4.3	27.5	39.9	74.3
21 ELECTRICAL MACHINERY	53.1	3.4	0.3	15.0	-18.7	0.0	53.1
22 AEROSPACE	26.2	0.0	0.4	775.4	417.5	1193.3	1219.5
23 OTHER TRANSPORTATION EQUIPMENT	31.0	10.6	1.1	187.5	82.1	281.3	312.3
24 OTHER MANUFACTURING	93.8	7.4	0.6	2.0	-48.5	-38.5	55.3
25 MISC. CONST., TRADE, SERVICE	1602.6	3496.7	331.9	102.4	84.8	4015.8	5618.5
TOTAL LOCAL PURCHASES		4301.9	362.9	1380.4	2556.9	8602.1	12508.5
VALUE ADDED	6172.6	2669.2	837.1	483.7	0.0	3990.0	10163.0
IMPORTS	2424.2	81.1	0.0	0.0	0.0	81.1	2504.9
TOTAL PURCHASES	12503.3	7052.2	1200.0	1864.1	2556.9	12673.2	25176.5

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE): 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	13.2068	6.5711	10.6775	0.0000	21.1380	1.0225	0.0000
2 OTHER AGRICULTURAL PRODUCTS	23.6906	1.7131	26.4544	0.0000	1.9157	0.5565	0.0432
3 FORESTRY AND FISHERY PRODUCTS	1.7683	3.4459	0.7101	0.0000	0.0000	0.0000	0.7266
4 MINING	0.0262	0.3361	0.0014	6.5845	0.0814	0.1384	0.0054
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0121	0.6176	0.0000	14.3502	0.2701	0.0012
6 TEXTILE MILL PRODUCTS	0.0230	0.0000	0.5532	0.0470	0.0000	25.5159	0.0000
7 APPAREL	0.0330	0.1521	0.0000	0.0000	0.1844	0.5123	15.3436
8 LUMBER AND WOOD PRODUCTS	0.0074	0.4382	0.0000	0.0371	0.1509	0.0108	0.0005
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0341	0.1035
10 PAPER AND ALLIED PRODUCTS	0.0538	0.0110	0.7336	0.6170	1.5593	1.0125	0.9793
11 PRINTING AND PUBLISHING	0.0193	0.0308	0.0031	0.0287	0.1460	0.0716	0.0987
12 CHEMICALS	0.0000	0.0000	0.0000	1.6092	0.6662	0.0000	1.0357
13 PETROLEUM REFINING	0.0000	2.1429	0.2662	0.9744	0.3643	0.2313	0.0499
14 STONE, CLAY AND GLASS	0.0175	0.1081	0.0000	3.8903	0.4873	0.2237	0.0013
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.0000	0.0023	0.0356	0.0119
16 NONFERROUS METALS	0.0038	0.0035	0.0000	0.2229	0.0557	0.0234	0.0006
17 FABRICATED METALS	0.0511	0.0000	0.3503	0.0000	1.7131	0.1012	0.1401
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0197	0.8590	0.0000	4.2833	0.0000	0.0049	0.0000
19 MACHINE TOOLS AND SHOPS	0.0076	0.0119	0.0000	0.0000	0.0232	0.0229	0.0055
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.3200	0.0000	0.5392	0.0110
21 ELECTRICAL MACHINERY	0.0331	0.0970	0.0022	0.2946	0.0540	0.0312	0.0023
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0038	0.0060
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0213	0.4378	0.0000	0.0000	0.0049	0.0003
24 OTHER MANUFACTURING	0.0860	0.6431	0.3208	0.4175	0.2152	0.7622	2.5390
25 MISC. CONST., TRADE, SERVICE	0.0000	15.7401	5.9241	0.0000	10.6552	1.5683	2.6054
TOTAL LOCAL PURCHASES	39.0474	32.3371	47.0525	19.3267	53.7626	32.6973	23.7111
VALUE ADDED	27.0529	48.9824	49.9043	51.2725	29.6066	7.9531	32.7673
IMPORTS	33.8997	18.6805	3.0431	29.4007	16.6307	59.3496	43.5216
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0013	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	2.1762	0.0000	0.0000	0.0000	0.0931	0.0000	0.0435
3 FORESTRY AND FISHERY PRODUCTS	8.5243	0.0000	0.0000	0.0000	0.1014	0.0000	0.0000
4 MINING	0.0247	0.0467	1.0783	0.0000	3.2787	0.0000	5.3273
5 FOOD AND KINDRED PRODUCTS	0.0011	0.6211	0.3054	0.0000	1.2214	0.0610	0.0760
6 TEXTILE MILL PRODUCTS	0.0193	4.6945	0.0000	0.1483	0.0280	0.0002	0.1881
7 APPAREL	0.1446	0.1745	0.2658	0.0001	0.2666	0.0247	0.0499
8 LUMBER AND WOOD PRODUCTS	27.2224	8.1985	4.0047	0.0043	0.2612	0.0140	0.4448
9 FURNITURE AND FIXTURES	0.2525	2.8363	0.0142	0.0383	0.0003	0.0000	0.0161
10 PAPER AND ALLIED PRODUCTS	1.0920	1.4105	19.7211	17.3246	1.5315	0.4904	3.3896
11 PRINTING AND PUBLISHING	0.3717	0.0531	0.9122	11.2541	0.2457	0.0038	0.1961
12 CHEMICALS	1.5280	1.1476	0.2079	1.4031	16.5770	0.0813	3.5660
13 PETROLEUM REFINING	0.6815	0.2089	0.6718	0.0888	4.8969	2.7544	1.0610
14 STONE, CLAY AND GLASS	0.4780	2.2629	0.2457	0.0014	0.4642	0.2047	10.6559
15 IRON AND STEEL	0.0000	3.7542	0.0000	0.0000	1.4293	0.0073	0.0000
16 NONFERROUS METALS	0.0601	0.9774	0.1241	0.1197	0.8748	0.0105	0.1180
17 FABRICATED METALS	0.7301	3.8091	0.6629	0.0000	0.5957	0.9949	1.2072
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0273	0.0738	0.0000	0.0032	0.0463	0.0000	0.0133
19 MACHINE TOOLS AND SHOPS	0.0037	0.1590	0.1109	0.0155	0.0000	0.0166	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0556	0.6098	0.0000	0.3291	0.7313	0.0073	0.0000
21 ELECTRICAL MACHINERY	0.1325	0.3037	0.0300	0.1010	0.0000	0.0471	0.3988
22 AEROSPACE	0.0032	0.0312	0.0030	0.1810	0.0077	0.0000	0.0124
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0863	0.0000	0.0196	0.0005	0.0014	0.0000
24 OTHER MANUFACTURING	0.7506	1.5769	1.2535	0.7984	0.0000	0.0459	1.1407
25 MISC. CONST., TRADE, SERVICE	12.2639	9.1109	8.3249	13.2414	10.4134	4.4342	14.8910
TOTAL LOCAL PURCHASES	56.5434	42.1470	37.9365	45.0719	43.0661	9.1999	42.7957
VALUE ADDED	31.9997	38.1522	42.7049	36.6056	40.1540	23.0412	48.2104
IMPORTS	11.4570	19.7007	19.3586	18.3225	16.7798	67.7589	8.9939
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0165	0.0000	0.0000	0.0000
4 MINING	6.9257	8.0329	0.0418	0.0528	0.0155	0.0433	0.0798
5 FOOD AND KINDRED PRODUCTS	0.0348	0.0062	0.0006	0.0042	0.0000	0.0273	0.0001
6 TEXTILE MILL PRODUCTS	0.0046	0.2016	0.0532	0.0598	0.0000	0.0956	0.0569
7 APPAREL	0.0880	0.0707	0.1024	0.0734	0.1252	0.0959	0.0855
8 LUMBER AND WOOD PRODUCTS	0.1185	0.0291	0.4062	0.1442	0.0326	0.4895	0.1951
9 FURNITURE AND FIXTURES	0.0077	0.0005	0.2039	0.0330	0.0008	0.0295	0.6933
10 PAPER AND ALLIED PRODUCTS	0.3196	0.3343	0.8036	0.1588	0.0129	0.4001	1.2106
11 PRINTING AND PUBLISHING	0.1451	0.0878	0.1212	0.0469	0.0157	0.0977	0.1020
12 CHEMICALS	0.8791	2.0102	0.2760	0.3570	0.0852	0.4263	1.0237
13 PETROLEUM REFINING	0.4619	0.0000	0.0000	0.3876	0.8779	0.4717	0.2090
14 STONE, CLAY AND GLASS	0.0000	0.3245	0.1243	0.5079	1.4900	0.5371	0.0000
15 IRON AND STEEL	19.5911	0.2160	13.6720	0.0000	0.0000	0.0000	0.7668
16 NONFERROUS METALS	1.6359	0.0000	0.0000	0.5221	3.7584	3.2749	2.6173
17 FABRICATED METALS	2.3172	1.9584	0.0000	0.2449	3.3119	1.7780	3.0150
18 NONELECTRICAL MOTIVE EQUIPMENT	0.2420	0.0146	0.7620	6.7598	0.8876	0.0000	0.7469
19 MACHINE TOOLS AND SHOPS	1.1339	1.0588	1.4388	2.1699	8.0655	2.0275	0.9738
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.3085	0.3592	1.8891	5.3195	1.7214	5.5738	1.0056
21 ELECTRICAL MACHINERY	0.0000	1.5556	0.6544	1.7629	1.3606	2.0673	0.1276
22 AEROSPACE	0.0115	0.0171	0.1778	0.1855	0.3823	0.6720	1.1153
23 OTHER TRANSPORTATION EQUIPMENT	0.2718	0.2007	0.9512	1.7075	1.0712	0.7021	0.3941
24 OTHER MANUFACTURING	0.3906	0.3351	1.2360	2.3836	0.0000	1.0956	2.5332
25 MISC. CONST., TRADE, SERVICE	9.8391	0.9121	6.3118	6.9099	7.6717	6.8297	5.9643
TOTAL LOCAL PURCHASES	44.7266	17.7255	29.2263	29.8075	30.8864	26.7349	22.9157
VALUE ADDED	40.4857	31.4850	33.5163	40.3338	44.2670	39.5319	47.7773
IMPORTS	14.7877	50.7895	37.2574	29.8587	24.8466	33.7331	29.3069
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0327
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0765	0.0906
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0271	0.0467
4 MINING	0.0174	0.0721	0.0808	0.8118
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.1093	0.2337
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	1.7314	0.0248
7 APPAREL	0.0890	0.2685	0.3187	0.0702
8 LUMBER AND WOOD PRODUCTS	0.1282	1.7128	0.5399	0.2582
9 FURNITURE AND FIXTURES	0.0718	0.7962	0.1010	0.0081
10 PAPER AND ALLIED PRODUCTS	0.0000	0.2166	3.9914	0.5053
11 PRINTING AND PUBLISHING	0.0000	0.0000	0.4155	0.8597
12 CHEMICALS	0.0000	0.8257	0.0000	0.4931
13 PETROLEUM REFINING	0.2116	0.3154	0.2405	0.8489
14 STONE, CLAY AND GLASS	0.2854	1.0398	0.3655	0.2202
15 IRON AND STEEL	1.5076	7.8999	0.0000	0.2381
16 NONFERROUS METALS	0.7435	1.0324	1.2452	0.0000
17 FABRICATED METALS	1.4923	3.7097	1.7581	0.0843
18 NONELECTRICAL MOTIVE EQUIPMENT	0.1626	1.5137	0.0296	0.1301
19 MACHINE TOOLS AND SHOPS	2.4745	0.6415	0.3868	0.0433
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.3815	0.4118	0.2142	0.2211
21 ELECTRICAL MACHINERY	1.6085	0.8742	0.0000	0.3029
22 AEROSPACE	0.0000	0.3707	0.4066	0.4096
23 OTHER TRANSPORTATION EQUIPMENT	0.3314	5.0803	0.2963	0.1071
24 OTHER MANUFACTURING	1.2899	0.0000	9.3121	0.7272
25 MISC. CONST., TRADE, SERVICE	0.9448	5.9536	9.9002	19.4037
TOTAL LOCAL PURCHASES	11.7402	32.7350	31.5468	26.1715
VALUE ADDED	45.4782	36.3789	39.1315	64.0836
IMPORTS	42.7816	30.8862	29.3217	9.7449
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	1.1783	0.0845	0.1513	0.0002	0.2930	0.0180	0.0015
2 OTHER AGRICULTURAL PRODUCTS	0.2926	1.0486	0.3117	0.0002	0.0962	0.0124	0.0034
3 FORESTRY AND FISHERY PRODUCTS	0.0314	0.0387	1.0210	0.0002	0.0091	0.0010	0.0090
4 MINING	0.0021	0.0060	0.0029	1.0747	0.0046	0.0030	0.0014
5 FOOD AND KINDRED PRODUCTS	0.0005	0.0011	0.0079	0.0005	1.1684	0.0044	0.0006
6 TEXTILE MILL PRODUCTS	0.0007	0.0007	0.0079	0.0011	0.0004	1.3429	0.0010
7 APPAREL	0.0011	0.0022	0.0009	0.0003	0.0032	0.0083	1.1815
8 LUMBER AND WOOD PRODUCTS	0.0023	0.0075	0.0033	0.0019	0.0054	0.0017	0.0017
9 FURNITURE AND FIXTURES	0.0000	0.0001	0.0001	0.0001	0.0001	0.0005	0.0013
10 PAPER AND ALLIED PRODUCTS	0.0021	0.0035	0.0117	0.0118	0.0264	0.0187	0.0174
11 PRINTING AND PUBLISHING	0.0010	0.0026	0.0018	0.0009	0.0042	0.0017	0.0022
12 CHEMICALS	0.0006	0.0018	0.0013	0.0234	0.0113	0.0008	0.0152
13 PETROLEUM REFINING	0.0072	0.0254	0.0112	0.0130	0.0091	0.0041	0.0022
14 STONE, CLAY AND GLASS	0.0009	0.0023	0.0012	0.0475	0.0075	0.0038	0.0005
15 IRON AND STEEL	0.0004	0.0010	0.0018	0.0009	0.0045	0.0012	0.0012
16 NONFERROUS METALS	0.0002	0.0004	0.0003	0.0035	0.0011	0.0009	0.0007
17 FABRICATED METALS	0.0011	0.0011	0.0046	0.0017	0.0212	0.0022	0.0027
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0032	0.0103	0.0034	0.0495	0.0016	0.0004	0.0002
19 MACHINE TOOLS AND SHOPS	0.0003	0.0007	0.0004	0.0015	0.0010	0.0007	0.0004
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0004	0.0012	0.0008	0.0068	0.0012	0.0079	0.0006
21 ELECTRICAL MACHINERY	0.0010	0.0020	0.0010	0.0046	0.0017	0.0008	0.0003
22 AEROSPACE	0.0003	0.0010	0.0007	0.0003	0.0009	0.0003	0.0004
23 OTHER TRANSPORTATION EQUIPMENT	0.0004	0.0009	0.0051	0.0011	0.0006	0.0003	0.0003
24 OTHER MANUFACTURING	0.0041	0.0100	0.0077	0.0075	0.0063	0.0125	0.0339
25 MISC. CONST., TRADE, SERVICE	0.0620	0.2146	0.1425	0.0209	0.1852	0.0358	0.0490
TOTAL LOCAL PURCHASES	1.5941	1.4683	1.7023	1.2741	1.8644	1.4843	1.3285

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963(CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

	SELLING INDUSTRY	8	9	10	11	12	13	14
1	LIVESTOCK AND PRODUCTS	0.0207	0.0048	0.0024	0.0008	0.0050	0.0003	0.0010
2	OTHER AGRICULTURAL PRODUCTS	0.0684	0.0074	0.0041	0.0012	0.0036	0.0002	0.0017
3	FORESTRY AND FISHERY PRODUCTS	0.1212	0.0107	0.0063	0.0015	0.0021	0.0001	0.0012
4	MINING	0.0050	0.0101	0.0167	0.0060	0.0474	0.0010	0.0691
5	FOOD AND KINDRED PRODUCTS	0.0021	0.0087	0.0051	0.0018	0.0178	0.0010	0.0026
6	TEXTILE MILL PRODUCTS	0.0020	0.0658	0.0007	0.0028	0.0007	0.0001	0.0035
7	APPAREL	0.0030	0.0033	0.0043	0.0012	0.0042	0.0004	0.0013
8	LUMBER AND WOOD PRODUCTS	1.3776	0.1190	0.0698	0.0148	0.0068	0.0009	0.0112
9	FURNITURE AND FIXTURES	0.0037	1.0297	0.0004	0.0006	0.0001	0.0000	0.0003
10	PAPER AND ALLIED PRODUCTS	0.0255	0.0263	1.2526	0.2474	0.0274	0.0072	0.0532
11	PRINTING AND PUBLISHING	0.0087	0.0035	0.0148	1.1317	0.0055	0.0007	0.0056
12	CHEMICALS	0.0277	0.0201	0.0063	0.0216	1.2022	0.0016	0.0515
13	PETROLEUM REFINING	0.0155	0.0069	0.0112	0.0061	0.0632	1.0291	0.0182
14	STONE, CLAY AND GLASS	0.0088	0.0283	0.0052	0.0019	0.0093	0.0026	1.1236
15	IRON AND STEEL	0.0036	0.0567	0.0023	0.0017	0.0237	0.0021	0.0044
16	NONFERROUS METALS	0.0016	0.0123	0.0022	0.0024	0.0116	0.0003	0.0026
17	FABRICATED METALS	0.0121	0.0437	0.0099	0.0028	0.0097	0.0105	0.0155
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0018	0.0023	0.0012	0.0007	0.0032	0.0002	0.0039
19	MACHINE TOOLS AND SHOPS	0.0007	0.0039	0.0020	0.0010	0.0011	0.0005	0.0008
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0021	0.0091	0.0009	0.0049	0.0105	0.0005	0.0019
21	ELECTRICAL MACHINERY	0.0030	0.0048	0.0012	0.0022	0.0013	0.0008	0.0057
22	AEROSPACE	0.0012	0.0013	0.0008	0.0031	0.0010	0.0003	0.0013
23	OTHER TRANSPORTATION EQUIPMENT	0.0011	0.0021	0.0004	0.0007	0.0006	0.0002	0.0006
24	OTHER MANUFACTURING	0.0154	0.0230	0.0198	0.0157	0.0030	0.0014	0.0178
25	MISC. CONST., TRADE, SERVICE	0.2468	0.1660	0.1510	0.2212	0.1742	0.0600	0.2293
	TOTAL LOCAL PURCHASES	1.9793	1.6697	1.5918	1.6957	1.6351	1.1220	1.6277

	SELLING INDUSTRY	15	16	17	18	19	20	21
1	LIVESTOCK AND PRODUCTS	0.0005	0.0002	0.0003	0.0003	0.0002	0.0004	0.0003
2	OTHER AGRICULTURAL PRODUCTS	0.0005	0.0002	0.0006	0.0005	0.0003	0.0007	0.0005
3	FORESTRY AND FISHERY PRODUCTS	0.0005	0.0002	0.0008	0.0007	0.0003	0.0009	0.0006
4	MINING	0.0971	0.0884	0.0153	0.0036	0.0069	0.0059	0.0062
5	FOOD AND KINDRED PRODUCTS	0.0013	0.0006	0.0006	0.0006	0.0005	0.0008	0.0007
6	TEXTILE MILL PRODUCTS	0.0005	0.0030	0.0014	0.0018	0.0004	0.0020	0.0021
7	APPAREL	0.0017	0.0011	0.0018	0.0014	0.0020	0.0016	0.0015
8	LUMBER AND WOOD PRODUCTS	0.0037	0.0014	0.0080	0.0043	0.0021	0.0087	0.0057
9	FURNITURE AND FIXTURES	0.0003	0.0002	0.0023	0.0008	0.0004	0.0007	0.0073
10	PAPER AND ALLIED PRODUCTS	0.0093	0.0071	0.0139	0.0063	0.0036	0.0088	0.0191
11	PRINTING AND PUBLISHING	0.0040	0.0015	0.0031	0.0021	0.0016	0.0025	0.0026
12	CHEMICALS	0.0172	0.0269	0.0071	0.0070	0.0047	0.0082	0.0145
13	PETROLEUM REFINING	0.0097	0.0029	0.0030	0.0066	0.0118	0.0072	0.0044
14	STONE, CLAY AND GLASS	0.0054	0.0081	0.0033	0.0079	0.0195	0.0078	0.0016
15	IRON AND STEEL	1.2503	0.0073	0.1730	0.0041	0.0088	0.0056	0.0170
16	NONFERROUS METALS	0.0219	1.0018	0.0050	0.0100	0.0427	0.0369	0.0282
17	FABRICATED METALS	0.0310	0.0214	1.0066	0.0074	0.0393	0.0224	0.0335
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0085	0.0048	0.0100	1.0737	0.0116	0.0012	0.0090
19	MACHINE TOOLS AND SHOPS	0.0167	0.0125	0.0191	0.0276	1.0902	0.0249	0.0127
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0065	0.0056	0.0222	0.0619	0.0221	1.0609	0.0128
21	ELECTRICAL MACHINERY	0.0019	0.0165	0.0081	0.0215	0.0171	0.0236	1.0031
22	AEROSPACE	0.0011	0.0006	0.0027	0.0034	0.0052	0.0081	0.0119
23	OTHER TRANSPORTATION EQUIPMENT	0.0046	0.0027	0.0114	0.0205	0.0134	0.0088	0.0053
24	OTHER MANUFACTURING	0.0084	0.0056	0.0167	0.0310	0.0033	0.0154	0.0305
25	MISC. CONST., TRADE, SERVICE	0.1660	0.0247	0.1135	0.1128	0.1201	0.1056	0.0934
	TOTAL LOCAL PURCHASES	1.6685	1.2453	1.4499	1.4179	1.4278	1.3697	1.3248

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0001	0.0007	0.0013	0.0017
2 OTHER AGRICULTURAL PRODUCTS	0.0002	0.0016	0.0022	0.0021
3 FORESTRY AND FISHERY PRODUCTS	0.0003	0.0025	0.0016	0.0012
4 MINING	0.0033	0.0128	0.0050	0.0120
5 FOOD AND KINDRED PRODUCTS	0.0001	0.0007	0.0022	0.0036
6 TEXTILE MILL PRODUCTS	0.0005	0.0009	0.0260	0.0008
7 APPAREL	0.0013	0.0038	0.0048	0.0012
8 LUMBER AND WOOD PRODUCTS	0.0026	0.0274	0.0125	0.0054
9 FURNITURE AND FIXTURES	0.0010	0.0089	0.0013	0.0002
10 PAPER AND ALLIED PRODUCTS	0.0020	0.0069	0.0589	0.0119
11 PRINTING AND PUBLISHING	0.0005	0.0017	0.0074	0.0124
12 CHEMICALS	0.0013	0.0146	0.0024	0.0084
13 PETROLEUM REFINING	0.0031	0.0065	0.0050	0.0118
14 STONE, CLAY AND GLASS	0.0042	0.0141	0.0058	0.0039
15 IRON AND STEEL	0.0225	0.1124	0.0047	0.0045
16 NONFERROUS METALS	0.0098	0.0141	0.0145	0.0007
17 FABRICATED METALS	0.0178	0.0441	0.0212	0.0021
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0026	0.0188	0.0011	0.0024
19 MACHINE TOOLS AND SHOPS	0.0281	0.0106	0.0057	0.0011
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0055	0.0078	0.0038	0.0034
21 ELECTRICAL MACHINERY	0.0171	0.0110	0.0012	0.0041
22 AEROSPACE	1.0006	0.0047	0.0053	0.0053
23 OTHER TRANSPORTATION EQUIPMENT	0.0043	1.0550	0.0040	0.0016
24 OTHER MANUFACTURING	0.0156	0.0039	1.1059	0.0109
25 MISC. CONST., TRADE, SERVICE	0.0249	0.1116	0.1522	1.2515
TOTAL LOCAL PURCHASES	1.1690	1.4970	1.4559	1.3640

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	13.2068	6.5711	10.6775	0.0000	21.1380	1.0225	0.0000
2 OTHER AGRICULTURAL PRODUCTS	23.9906	1.7131	26.4544	0.0000	1.9157	0.5565	0.0432
3 FORESTRY AND FISHERY PRODUCTS	1.7683	3.4459	0.7101	0.0000	0.0000	0.0000	0.7266
4 MINING	0.0262	0.3361	0.0014	6.5845	0.0814	0.1384	0.0054
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0121	0.6176	0.0000	14.3502	0.2701	0.0012
6 TEXTILE MILL PRODUCTS	0.0230	0.0000	0.5532	0.0470	0.0000	25.5159	0.0000
7 APPAREL	0.0330	0.1521	0.0000	0.0000	0.1844	0.5123	15.3436
8 LUMBER AND WOOD PRODUCTS	0.0074	0.4382	0.0000	0.0371	0.1509	0.0108	0.0005
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0341	0.1035
10 PAPER AND ALLIED PRODUCTS	0.0538	0.0110	0.7336	0.6170	1.5593	1.0125	0.9793
11 PRINTING AND PUBLISHING	0.0193	0.0308	0.0031	0.0287	0.1460	0.0716	0.0987
12 CHEMICALS	0.0000	0.0000	0.0000	1.6092	0.6662	0.0000	1.0357
13 PETROLEUM REFINING	0.0000	2.1429	0.2662	0.9744	0.3643	0.2313	0.0499
14 STONE, CLAY AND GLASS	0.0175	0.1081	0.0000	3.8903	0.4873	0.2237	0.0013
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.0000	0.0023	0.0356	0.0119
16 NONFERROUS METALS	0.0038	0.0035	0.0000	0.2229	0.0557	0.0234	0.0006
17 FABRICATED METALS	0.0511	0.0000	0.3503	0.0000	1.7131	0.1012	0.1401
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0197	0.8590	0.0000	4.2833	0.0000	0.0049	0.0000
19 MACHINE TOOLS AND SHOPS	0.0076	0.0119	0.0000	0.0000	0.0232	0.0229	0.0055
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.3200	0.0000	0.5392	0.0110
21 ELECTRICAL MACHINERY	0.0331	0.0970	0.0022	0.2946	0.0540	0.0312	0.0023
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0038	0.0060
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0213	0.4378	0.0000	0.0000	0.0049	0.0003
24 OTHER MANUFACTURING	0.0860	0.6431	0.3208	0.4175	0.2152	0.7622	2.5390
25 MISC. CONST., TRADE, SERVICE	0.0000	15.7401	5.9241	0.0000	10.6552	1.5683	2.6054
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	18.7722	33.9892	34.6289	35.5783	20.5442	4.5187	22.7374
TOTAL LOCAL PURCHASES	57.8195	66.3263	81.6815	54.9051	74.3069	38.2160	46.4486
OTHER LOCAL PAYMENTS	8.2807	14.9932	15.2754	15.6942	9.0624	2.4344	10.0298
IMPORTS	33.8997	18.6805	3.0431	29.4007	16.6307	59.3496	43.5216
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0013	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	2.1762	0.0000	0.0000	0.0000	0.0931	0.0000	0.0435
3 FORESTRY AND FISHERY PRODUCTS	8.5243	0.0000	0.0000	0.0000	0.1014	0.0000	0.0000
4 MINING	0.0247	0.0467	1.0783	0.0000	3.2787	0.0000	5.3273
5 FOOD AND KINDRED PRODUCTS	0.0011	0.6211	0.3054	0.0000	1.2214	0.0610	0.0760
6 TEXTILE MILL PRODUCTS	0.0193	4.6945	0.0000	0.1483	0.0280	0.0002	0.1881
7 APPAREL	0.1446	0.1745	0.2658	0.0001	0.2666	0.0247	0.0499
8 LUMBER AND WOOD PRODUCTS	27.2224	8.1985	4.0047	0.0043	0.2612	0.0140	0.4448
9 FURNITURE AND FIXTURES	0.2525	2.8363	0.0142	0.0383	0.0003	0.0000	0.0161
10 PAPER AND ALLIED PRODUCTS	1.0920	1.4105	19.7211	17.3246	1.5315	0.4904	3.3896
11 PRINTING AND PUBLISHING	0.3717	0.0531	0.9122	11.2541	0.2457	0.0038	0.1961
12 CHEMICALS	1.5280	1.1476	0.2079	1.4031	16.5770	0.0813	3.5660
13 PETROLEUM REFINING	0.6815	0.2089	0.6718	0.0888	4.8969	2.7544	1.0610
14 STONE, CLAY AND GLASS	0.4780	2.2629	0.2457	0.0014	0.4642	0.2047	10.6559
15 IRON AND STEEL	0.0000	3.7542	0.0000	0.0000	1.4293	0.0073	0.0000
16 NONFERROUS METALS	0.0601	0.9774	0.1241	0.1197	0.8748	0.0105	0.1180
17 FABRICATED METALS	0.7301	3.8091	0.6629	0.0000	0.5957	0.9949	1.2072
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0273	0.0738	0.0000	0.0032	0.0463	0.0000	0.0133
19 MACHINE TOOLS AND SHOPS	0.0037	0.1590	0.1109	0.0155	0.0000	0.0166	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0556	0.6098	0.0000	0.3291	0.7313	0.0073	0.0000
21 ELECTRICAL MACHINERY	0.1325	0.3037	0.0300	0.1010	0.0000	0.0471	0.3988
22 AEROSPACE	0.0032	0.0312	0.0030	0.1810	0.0077	0.0000	0.0124
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0863	0.0000	0.0196	0.0005	0.0014	0.0000
24 OTHER MANUFACTURING	0.7506	1.5769	1.2535	0.7984	0.0000	0.0459	1.1407
25 MISC. CONST., TRADE, SERVICE	12.2639	9.1109	8.3249	13.2414	10.4134	4.4342	14.8910
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	22.2048	26.4741	29.6332	25.4009	27.8631	15.9884	33.4535
TOTAL LOCAL PURCHASES	78.7481	68.6211	67.5697	70.4728	70.9293	25.1883	76.2492
OTHER LOCAL PAYMENTS	9.7949	11.6781	13.0717	11.2048	12.2909	7.0528	14.7569
IMPORTS	11.4570	19.7007	19.3586	18.3225	16.7798	67.7589	8.9939
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0165	0.0000	0.0000	0.0000
4 MINING	4.9257	8.0329	0.0418	0.0528	0.0155	0.0433	0.0798
5 FOOD AND KINDRED PRODUCTS	0.0348	0.0062	0.0006	0.0042	0.0000	0.0273	0.0001
6 TEXTILE MILL PRODUCTS	0.0046	0.2016	0.0532	0.0598	0.0000	0.0956	0.0569
7 APPAREL	0.0880	0.0707	0.1024	0.0734	0.1252	0.0959	0.0855
8 LUMBER AND WOOD PRODUCTS	0.1185	0.0291	0.4062	0.1442	0.0326	0.4895	0.1951
9 FURNITURE AND FIXTURES	0.0077	0.0005	0.2039	0.0330	0.0008	0.0295	0.6933
10 PAPER AND ALLIED PRODUCTS	0.3196	0.3343	0.8036	0.1588	0.0129	0.4001	1.2106
11 PRINTING AND PUBLISHING	0.1451	0.0878	0.1212	0.0469	0.0157	0.0977	0.1020
12 CHEMICALS	0.8791	2.0102	0.2760	0.3570	0.0852	0.4263	1.0237
13 PETROLEUM REFINING	0.4619	0.0000	0.0000	0.3876	0.8779	0.4717	0.2090
14 STONE, CLAY AND GLASS	0.0000	0.3245	0.1243	0.5079	1.4900	0.5371	0.0000
15 IRON AND STEEL	19.5911	0.2160	13.6720	0.0000	0.0000	0.0000	0.7668
16 NONFERROUS METALS	1.6359	0.0000	0.0000	0.5221	3.7584	3.2749	2.6173
17 FABRICATED METALS	2.3172	1.9584	0.0000	0.2449	3.3119	1.7780	3.0150
18 NONELECTRICAL MOTIVE EQUIPMENT	0.2420	0.0146	0.7620	6.7598	0.8876	0.0000	0.7469
19 MACHINE TOOLS AND SHOPS	1.1339	1.0588	1.4388	2.1699	8.0655	2.0275	0.9738
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.3085	0.3592	1.8891	5.3195	1.7214	5.5738	1.0056
21 ELECTRICAL MACHINERY	0.0000	1.5556	0.6544	1.7629	1.3606	2.0673	0.1276
22 AEROSPACE	0.0115	0.0171	0.1778	0.1855	0.3823	0.6720	1.1153
23 OTHER TRANSPORTATION EQUIPMENT	0.2718	0.2007	0.9512	1.7075	1.0712	0.7021	0.3941
24 OTHER MANUFACTURING	0.3906	0.3351	1.2360	2.3836	0.0000	1.0956	2.5332
25 MISC. CONST., TRADE, SERVICE	9.8391	0.9121	6.3118	6.9099	7.6717	6.8297	5.9643
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	28.0933	21.8477	23.2571	27.9879	30.7172	27.4315	33.1530
TOTAL LOCAL PURCHASES	72.8199	39.5732	52.4834	57.7954	61.6035	54.1664	56.0687
OTHER LOCAL PAYMENTS	12.3924	9.6374	10.2591	12.3459	13.5498	12.1005	14.6243
IMPORTS	14.7877	50.7895	37.2574	29.8587	24.8466	33.7331	29.3069
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963(CONTINUED)

(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25	26
1	LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0327	0.5459
2	OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0765	0.0906	0.3715
3	FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0271	0.0467	0.0326
4	MINING	0.0174	0.0721	0.0808	0.8118	0.0028
5	FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.1093	0.2337	6.7624
6	TEXTILE MILL PRODUCTS	0.0000	0.0000	1.7314	0.0248	0.0269
7	APPAREL	0.0890	0.2685	0.3187	0.0702	0.2340
8	LUMBER AND WOOD PRODUCTS	0.1282	1.7128	0.5399	0.2582	0.0567
9	FURNITURE AND FIXTURES	0.0718	0.7962	0.1010	0.0081	0.1645
10	PAPER AND ALLIED PRODUCTS	0.0000	0.2166	3.9914	0.5053	0.1560
11	PRINTING AND PUBLISHING	0.0000	0.0000	0.4155	0.8597	0.4325
12	CHEMICALS	0.0000	0.8257	0.0000	0.4931	0.0468
13	PETROLEUM REFINING	0.2116	0.3154	0.2405	0.8489	1.5258
14	STONE, CLAY AND GLASS	0.2854	1.0398	0.3655	0.2202	0.1248
15	IRON AND STEEL	1.5076	7.8999	0.0000	0.2381	0.0326
16	NONFERROUS METALS	0.7435	1.0324	1.2452	0.0000	0.0326
17	FABRICATED METALS	1.4923	3.7097	1.7581	0.0843	0.1149
18	NONELECTRICAL MOTIVE EQUIPMENT	0.1626	1.5137	0.0296	0.1301	0.3120
19	MACHINE TOOLS AND SHOPS	2.4745	0.6415	0.3868	0.0433	0.0255
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.3815	0.4118	0.2142	0.2211	0.1134
21	ELECTRICAL MACHINERY	1.6085	0.8742	0.0000	0.3029	0.0482
22	AEROSPACE	0.0000	0.3707	0.4066	0.4096	0.0000
23	OTHER TRANSPORTATION EQUIPMENT	0.3314	5.0803	0.2963	0.1071	0.1503
24	OTHER MANUFACTURING	1.2899	0.0000	9.3121	0.7272	0.1049
25	MISC. CONST., TRADE, SERVICE	0.9448	5.9536	9.9002	19.4037	49.5831
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	31.5576	25.2435	27.1536	44.4680	0.0000
	TOTAL LOCAL PURCHASES	43.2978	57.9785	58.7004	70.6395	61.0008
	OTHER LOCAL PAYMENTS	13.9206	11.1353	11.9779	19.6156	37.8492
	IMPORTS	42.7816	30.8862	29.3217	9.7449	1.1500
	TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1	LIVESTOCK AND PRODUCTS	1.1935	0.1053	0.1749	0.0185	0.3114	0.0229	0.0147
2	OTHER AGRICULTURAL PRODUCTS	0.2999	1.0586	0.3230	0.0091	0.1050	0.0147	0.0098
3	FORESTRY AND FISHERY PRODUCTS	0.0325	0.0402	1.0227	0.0015	0.0105	0.0013	0.0099
4	MINING	0.0057	0.0110	0.0086	1.0792	0.0091	0.0042	0.0046
5	FOOD AND KINDRED PRODUCTS	0.0452	0.0622	0.0773	0.0545	1.2225	0.0188	0.0394
6	TEXTILE MILL PRODUCTS	0.0012	0.0014	0.0087	0.0017	0.0011	1.3431	0.0014
7	APPAREL	0.0031	0.0050	0.0040	0.0027	0.0056	0.0090	1.1833
8	LUMBER AND WOOD PRODUCTS	0.0047	0.0108	0.0070	0.0048	0.0084	0.0025	0.0037
9	FURNITURE AND FIXTURES	0.0010	0.0015	0.0017	0.0013	0.0013	0.0008	0.0022
10	PAPER AND ALLIED PRODUCTS	0.0083	0.0120	0.0213	0.0192	0.0339	0.0207	0.0228
11	PRINTING AND PUBLISHING	0.0073	0.0112	0.0116	0.0086	0.0119	0.0038	0.0077
12	CHEMICALS	0.0038	0.0063	0.0063	0.0273	0.0152	0.0018	0.0180
13	PETROLEUM REFINING	0.0196	0.0424	0.0305	0.0281	0.0242	0.0081	0.0130
14	STONE, CLAY AND GLASS	0.0032	0.0054	0.0046	0.0502	0.0102	0.0046	0.0025
15	IRON AND STEEL	0.0024	0.0037	0.0048	0.0033	0.0068	0.0018	0.0028
16	NONFERROUS METALS	0.0007	0.0011	0.0011	0.0041	0.0017	0.0010	0.0011
17	FABRICATED METALS	0.0033	0.0043	0.0082	0.0044	0.0240	0.0029	0.0047
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0058	0.0139	0.0075	0.0527	0.0049	0.0013	0.0025
19	MACHINE TOOLS AND SHOPS	0.0009	0.0015	0.0014	0.0022	0.0017	0.0009	0.0009
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0022	0.0037	0.0036	0.0090	0.0033	0.0085	0.0021
21	ELECTRICAL MACHINERY	0.0025	0.0041	0.0034	0.0064	0.0036	0.0013	0.0016
22	AEROSPACE	0.0018	0.0031	0.0030	0.0022	0.0027	0.0008	0.0018
23	OTHER TRANSPORTATION EQUIPMENT	0.0018	0.0028	0.0073	0.0028	0.0023	0.0007	0.0015
24	OTHER MANUFACTURING	0.0082	0.0157	0.0141	0.0125	0.0113	0.0138	0.0375
25	MISC. CONST., TRADE, SERVICE	0.4150	0.6970	0.6904	0.4470	0.6121	0.1493	0.3553
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.5530	0.7558	0.8583	0.6676	0.6689	0.1778	0.4797
	TOTAL LOCAL PURCHASES	2.6268	2.8799	3.3053	2.5208	3.1136	1.8164	2.2245

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0424	0.0238	0.0225	0.0209	0.0248	0.0086	0.0241
2 OTHER AGRICULTURAL PRODUCTS	0.0789	0.0165	0.0138	0.0109	0.0131	0.0042	0.0128
3 FORESTRY AND FISHERY PRODUCTS	0.1227	0.0121	0.0078	0.0029	0.0036	0.0007	0.0029
4 MINING	0.0102	0.0146	0.0216	0.0109	0.0521	0.0030	0.0747
5 FOOD AND KINDRED PRODUCTS	0.0660	0.0644	0.0644	0.0609	0.0762	0.0254	0.0705
6 TEXTILE MILL PRODUCTS	0.0028	0.0664	0.0014	0.0035	0.0014	0.0004	0.0043
7 APPAREL	0.0059	0.0058	0.0070	0.0038	0.0068	0.0015	0.0044
8 LUMBER AND WOOD PRODUCTS	1.3810	0.1220	0.0730	0.0180	0.0100	0.0022	0.0148
9 FURNITURE AND FIXTURES	0.0051	1.0310	0.0018	0.0019	0.0014	0.0006	0.0019
10 PAPER AND ALLIED PRODUCTS	0.0343	0.0340	1.2608	0.2555	0.0354	0.0106	0.0625
11 PRINTING AND PUBLISHING	0.0177	0.0114	0.0232	1.1401	0.0137	0.0042	0.0152
12 CHEMICALS	0.0323	0.0242	0.0106	0.0259	1.2065	0.0034	0.0564
13 PETROLEUM REFINING	0.0332	0.0224	0.0277	0.0225	0.0795	1.0359	0.0371
14 STONE, CLAY AND GLASS	0.0120	0.0311	0.0081	0.0048	0.0122	0.0038	1.1270
15 IRON AND STEEL	0.0064	0.0591	0.0049	0.0043	0.0262	0.0032	0.0074
16 NONFERROUS METALS	0.0024	0.0129	0.0028	0.0031	0.0122	0.0005	0.0034
17 FABRICATED METALS	0.0153	0.0465	0.0129	0.0059	0.0127	0.0118	0.0190
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0056	0.0056	0.0047	0.0042	0.0067	0.0017	0.0079
19 MACHINE TOOLS AND SHOPS	0.0016	0.0046	0.0028	0.0018	0.0019	0.0008	0.0017
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0047	0.0114	0.0033	0.0073	0.0128	0.0015	0.0047
21 ELECTRICAL MACHINERY	0.0052	0.0067	0.0033	0.0043	0.0034	0.0016	0.0081
22 AEROSPACE	0.0034	0.0032	0.0028	0.0051	0.0029	0.0011	0.0036
23 OTHER TRANSPORTATION EQUIPMENT	0.0031	0.0038	0.0023	0.0025	0.0024	0.0010	0.0028
24 OTHER MANUFACTURING	0.0213	0.0281	0.0253	0.0211	0.0084	0.0036	0.0241
25 MISC. CONST., TRADE, SERVICE	0.7507	0.6057	0.6191	0.6873	0.6351	0.2527	0.7651
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.7893	0.6890	0.7333	0.7303	0.7220	0.3020	0.8395
TOTAL LOCAL PURCHASES	3.4534	2.9565	2.9613	3.0598	2.9835	1.6861	3.1956

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0212	0.0126	0.0160	0.0175	0.0187	0.0167	0.0183
2 OTHER AGRICULTURAL PRODUCTS	0.0105	0.0062	0.0062	0.0088	0.0092	0.0085	0.0092
3 FORESTRY AND FISHERY PRODUCTS	0.0020	0.0011	0.0019	0.0019	0.0016	0.0020	0.0019
4 MINING	0.1021	0.0914	0.0191	0.0078	0.0114	0.0098	0.0106
5 FOOD AND KINDRED PRODUCTS	0.0622	0.0369	0.0467	0.0512	0.0548	0.0487	0.0537
6 TEXTILE MILL PRODUCTS	0.0012	0.0034	0.0019	0.0024	0.0010	0.0025	0.0027
7 APPAREL	0.0044	0.0027	0.0038	0.0037	0.0044	0.0038	0.0039
8 LUMBER AND WOOD PRODUCTS	0.0070	0.0034	0.0105	0.0070	0.0050	0.0113	0.0085
9 FURNITURE AND FIXTURES	0.0016	0.0010	0.0034	0.0019	0.0016	0.0018	0.0085
10 PAPER AND ALLIED PRODUCTS	0.0177	0.0121	0.0203	0.0133	0.0111	0.0154	0.0264
11 PRINTING AND PUBLISHING	0.0126	0.0067	0.0096	0.0092	0.0093	0.0093	0.0101
12 CHEMICALS	0.0217	0.0295	0.0104	0.0106	0.0086	0.0117	0.0183
13 PETROLEUM REFINING	0.0266	0.0130	0.0158	0.0207	0.0269	0.0205	0.0191
14 STONE, CLAY AND GLASS	0.0084	0.0099	0.0056	0.0104	0.0222	0.0102	0.0042
15 IRON AND STEEL	1.2529	0.0049	0.1750	0.0063	0.0112	0.0077	0.0193
16 NONFERROUS METALS	0.0227	1.0022	0.0056	0.0106	0.0433	0.0374	0.0289
17 FABRICATED METALS	0.0341	0.0233	1.0090	0.0099	0.0420	0.0249	0.0362
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0121	0.0069	0.0127	1.0767	0.0148	0.0041	0.0122
19 MACHINE TOOLS AND SHOPS	0.0175	0.0129	0.0197	0.0283	1.0909	0.0256	0.0135
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0090	0.0070	0.0241	0.0640	0.0243	1.0628	0.0150
21 ELECTRICAL MACHINERY	0.0041	0.0178	0.0098	0.0232	0.0190	0.0253	1.0050
22 AEROSPACE	0.0032	0.0019	0.0043	0.0052	0.0070	0.0097	0.0137
23 OTHER TRANSPORTATION EQUIPMENT	0.0065	0.0039	0.0128	0.0221	0.0151	0.0103	0.0069
24 OTHER MANUFACTURING	0.0140	0.0089	0.0210	0.0357	0.0083	0.0198	0.0354
25 MISC. CONST., TRADE, SERVICE	0.6470	0.3110	0.4772	0.5122	0.5489	0.4837	0.5118
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.7536	0.4485	0.5698	0.6256	0.6718	0.5923	0.6555
TOTAL LOCAL PURCHASES	3.0759	2.0830	2.5141	2.5863	2.6825	2.4759	2.5489

PART II: "IMPORTS-ONLY" METHOD, UNCORRECTED

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)				
SELLING INDUSTRY	22	23	24	25	26
1 LIVESTOCK AND PRODUCTS	0.0153	0.0175	0.0185	0.0260	0.0415
2 OTHER AGRICULTURAL PRODUCTS	0.0075	0.0097	0.0105	0.0138	0.0200
3 FORESTRY AND FISHERY PRODUCTS	0.0014	0.0037	0.0028	0.0029	0.0030
4 MINING	0.0069	0.0169	0.0092	0.0178	0.0100
5 FOOD AND KINDRED PRODUCTS	0.0449	0.0502	0.0529	0.0753	0.1221
6 TEXTILE MILL PRODUCTS	0.0010	0.0015	0.0265	0.0016	0.0014
7 APPAREL	0.0033	0.0061	0.0070	0.0044	0.0055
8 LUMBER AND WOOD PRODUCTS	0.0050	0.0300	0.0152	0.0092	0.0066
9 FURNITURE AND FIXTURES	0.0020	0.0101	0.0025	0.0018	0.0028
10 PAPER AND ALLIED PRODUCTS	0.0081	0.0138	0.0659	0.0218	0.0168
11 PRINTING AND PUBLISHING	0.0068	0.0087	0.0146	0.0225	0.0172
12 CHEMICALS	0.0046	0.0182	0.0061	0.0135	0.0088
13 PETROLEUM REFINING	0.0155	0.0203	0.0192	0.0317	0.0340
14 STONE, CLAY AND GLASS	0.0064	0.0166	0.0083	0.0075	0.0061
15 IRON AND STEEL	0.0245	0.1145	0.0069	0.0077	0.0053
16 NONFERROUS METALS	0.0103	0.0147	0.0150	0.0015	0.0014
17 FABRICATED METALS	0.0201	0.0466	0.0238	0.0058	0.0063
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0053	0.0217	0.0042	0.0067	0.0072
19 MACHINE TOOLS AND SHOPS	0.0287	0.0112	0.0063	0.0020	0.0016
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0073	0.0098	0.0059	0.0063	0.0050
21 ELECTRICAL MACHINERY	0.0186	0.0127	0.0030	0.0066	0.0043
22 AEROSPACE	1.0021	0.0064	0.0070	0.0077	0.0042
23 OTHER TRANSPORTATION EQUIPMENT	0.0057	1.0566	0.0056	0.0039	0.0038
24 OTHER MANUFACTURING	0.0197	0.0084	1.1106	0.0175	0.0113
25 MISC. CONST., TRADE, SERVICE	0.3782	0.5024	0.5527	1.8170	0.9635
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.5536	0.6122	0.6275	0.8860	1.5094
TOTAL LOCAL PURCHASES	2.2029	2.6403	2.6278	3.0187	2.8191

TABLE 6. INCOME MULTIPLIERS, WASHINGTON, 1963

(IN PERCENT)

	LOCAL PRIVATE INCOME CHANGES PER DOLLAR DELIVERY TO FINAL DEMAND				MULTIPLIERS	
INDUSTRY	DIRECT	INDIRECT	INDUCED	TOTAL	SIMPLE	TOTAL
1 LIVESTOCK AND PRODUCTS	0.188	0.179	0.187	0.553	1.952	2.946
2 OTHER AGRICULTURAL PRODUCTS	0.340	0.161	0.255	0.756	1.473	2.224
3 FORESTRY AND FISHERY PRODUCTS	0.346	0.222	0.290	0.858	1.642	2.479
4 MINING	0.356	0.086	0.225	0.668	1.243	1.876
5 FOOD AND KINDRED PRODUCTS	0.205	0.238	0.226	0.669	2.157	3.256
6 TEXTILE MILL PRODUCTS	0.055	0.063	0.060	0.178	2.135	3.222
7 APPAREL	0.227	0.090	0.162	0.480	1.398	2.110
8 LUMBER AND WOOD PRODUCTS	0.222	0.301	0.266	0.789	2.355	3.555
9 FURNITURE AND FIXTURES	0.265	0.192	0.233	0.689	1.724	2.602
10 PAPER AND ALLIED PRODUCTS	0.296	0.189	0.247	0.733	1.639	2.475
11 PRINTING AND PUBLISHING	0.254	0.230	0.246	0.730	1.905	2.875
12 CHEMICALS	0.279	0.200	0.244	0.722	1.717	2.591
13 PETROLEUM REFINING	0.160	0.040	0.102	0.302	1.252	1.889
14 STONE, CLAY AND GLASS	0.335	0.222	0.283	0.840	1.663	2.509
15 IRON AND STEEL	0.281	0.218	0.254	0.754	1.777	2.682
16 NONFERROUS METALS	0.218	0.079	0.151	0.449	1.360	2.053
17 FABRICATED METALS	0.233	0.145	0.192	0.570	1.623	2.450
18 NONELECTRICAL MOTIVE EQUIPMENT	0.280	0.135	0.211	0.626	1.481	2.235
19 MACHINE TOOLS AND SHOPS	0.307	0.138	0.227	0.672	1.449	2.187
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.274	0.118	0.200	0.592	1.430	2.159
21 ELECTRICAL MACHINERY	0.332	0.103	0.221	0.655	1.310	1.977
22 AEROSPACE	0.316	0.051	0.187	0.554	1.162	1.754
23 OTHER TRANSPORTATION EQUIPMENT	0.252	0.153	0.207	0.612	1.607	2.425
24 OTHER MANUFACTURING	0.272	0.144	0.212	0.627	1.531	2.311
25 MISC. CONST., TRADE, SERVICE	0.445	0.142	0.299	0.886	1.320	1.992
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.000	0.000	1.509	1.509	0.000	0.000

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	19.4	17.3	7.9	0.0	146.6	0.1	0.0
2 OTHER AGRICULTURAL PRODUCTS	49.0	6.4	27.5	0.0	18.7	0.1	0.0
3 FORESTRY AND FISHERY PRODUCTS	4.6	16.0	0.9	0.0	0.0	0.0	0.5
4 MINING	0.0	0.5	0.0	1.2	0.3	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.5	0.0	116.2	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.0	0.1	0.0	0.0	0.7	0.0
7 APPAREL	0.0	0.2	0.0	0.0	0.6	0.0	2.7
8 LUMBER AND WOOD PRODUCTS	0.0	2.1	0.0	0.0	1.9	0.0	0.0
9 FURNITURE AND FIXTURES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	0.1	0.0	0.5	0.2	10.1	0.1	0.3
11 PRINTING AND PUBLISHING	0.0	0.1	0.0	0.0	1.8	0.0	0.1
12 CHEMICALS	0.0	0.0	0.0	0.4	3.2	0.0	0.3
13 PETROLEUM REFINING	0.0	7.9	0.3	0.5	3.5	0.0	0.0
14 STONE, CLAY AND GLASS	0.1	0.9	0.0	4.2	11.1	0.1	0.0
15 IRON AND STEEL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 NONFERROUS METALS	0.0	0.0	0.0	0.2	0.8	0.0	0.0
17 FABRICATED METALS	0.1	0.0	0.4	0.0	19.4	0.0	0.1
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.3	0.0	0.2	0.0	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.0	0.0	0.0	0.0	0.1	0.0	0.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 ELECTRICAL MACHINERY	0.0	0.1	0.0	0.0	0.1	0.0	0.0
22 AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.0	0.0	0.1	0.0	0.0	0.0	0.0
24 OTHER MANUFACTURING	0.0	0.2	0.0	0.0	0.2	0.0	0.1
25 MISC. CONST., TRADE, SERVICE	0.0	53.5	5.6	0.0	95.3	0.2	1.3
TOTAL LOCAL PURCHASES	73.4	105.7	43.9	6.9	429.9	1.2	5.4
VALUE ADDED	85.2	217.8	59.6	33.0	337.0	3.7	21.6
IMPORTS	76.8	99.4	14.8	13.5	346.1	7.4	33.1
TOTAL PURCHASES	235.4	422.9	118.3	53.4	1113.0	12.3	60.2

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	17.5	0.0	0.0	0.0	0.3	0.0	0.1
3 FORESTRY AND FISHERY PRODUCTS	85.9	0.0	0.0	0.0	0.3	0.0	0.0
4 MINING	0.1	0.0	2.6	0.0	3.5	0.0	2.4
5 FOOD AND KINDRED PRODUCTS	0.0	0.2	1.5	0.0	2.7	0.1	0.1
6 TEXTILE MILL PRODUCTS	0.0	0.4	0.0	0.0	0.0	0.0	0.1
7 APPAREL	0.4	0.0	0.5	0.0	0.2	0.0	0.0
8 LUMBER AND WOOD PRODUCTS	283.0	3.7	31.3	0.0	0.9	0.0	0.7
9 FURNITURE AND FIXTURES	0.7	0.3	0.0	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	5.8	0.3	78.7	12.3	2.7	0.8	2.6
11 PRINTING AND PUBLISHING	3.7	0.0	6.9	15.1	0.8	0.0	0.3
12 CHEMICALS	6.1	0.2	0.6	0.7	22.2	0.1	2.0
13 PETROLEUM REFINING	5.5	0.1	4.0	0.1	13.2	6.4	1.2
14 STONE, CLAY AND GLASS	8.9	1.9	3.5	0.0	2.9	1.1	28.5
15 IRON AND STEEL	0.0	0.7	0.0	0.0	1.9	0.0	0.0
16 NONFERROUS METALS	0.7	0.5	1.1	0.2	3.5	0.0	0.2
17 FABRICATED METALS	6.8	1.6	4.6	0.0	1.9	2.7	1.6
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.0	0.0	0.3	0.0	0.0	0.0	0.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.1	0.0	0.0	0.1	0.4	0.0	0.0
21 ELECTRICAL MACHINERY	0.2	0.0	0.0	0.0	0.0	0.0	0.1
22 AEROSPACE	0.0	0.0	0.0	0.1	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24 OTHER MANUFACTURING	0.6	0.1	0.7	0.1	0.0	0.0	0.1
25 MISC. CONST., TRADE, SERVICE	90.2	2.9	46.1	13.1	25.9	9.5	15.7
TOTAL LOCAL PURCHASES	516.2	13.0	182.7	41.9	83.6	20.8	55.7
VALUE ADDED	294.2	15.3	299.8	45.4	129.9	61.2	65.7
IMPORTS	105.3	11.8	206.6	35.5	95.8	183.5	9.8
TOTAL PURCHASES	915.6	40.1	689.1	122.8	309.3	265.5	131.2

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963 (CONTINUED)

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 MINING	1.6	11.7	0.0	0.0	0.0	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.2	0.0	0.0	0.0	0.0	0.0
7 APPAREL	0.0	0.1	0.0	0.0	0.0	0.0	0.0
8 LUMBER AND WOOD PRODUCTS	0.1	0.1	0.7	0.1	0.0	0.4	0.1
9 FURNITURE AND FIXTURES	0.0	0.0	0.1	0.0	0.0	0.0	0.1
10 PAPER AND ALLIED PRODUCTS	0.1	0.8	0.7	0.1	0.0	0.2	0.4
11 PRINTING AND PUBLISHING	0.1	0.4	0.2	0.0	0.0	0.1	0.1
12 CHEMICALS	0.3	3.6	0.2	0.1	0.0	0.1	0.2
13 PETROLEUM REFINING	0.3	0.0	0.0	0.2	0.3	0.3	0.1
14 STONE, CLAY AND GLASS	0.0	2.8	0.4	0.6	1.0	0.7	0.0
15 IRON AND STEEL	5.9	0.4	9.3	0.0	0.0	0.0	0.2
16 NONFERROUS METALS	1.5	0.0	0.0	0.4	1.6	2.8	1.7
17 FABRICATED METALS	1.6	8.3	0.0	0.1	1.1	1.2	1.5
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.0	0.1	0.3	0.0	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.3	1.6	0.8	0.4	1.0	0.5	0.2
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.3	0.5	0.6	0.1	0.7	0.1
21 ELECTRICAL MACHINERY	0.0	1.1	0.2	0.2	0.1	0.2	0.0
22 AEROSPACE	0.0	0.0	0.2	0.1	0.1	0.3	0.3
23 OTHER TRANSPORTATION EQUIPMENT	0.0	0.1	0.2	0.1	0.1	0.1	0.0
24 OTHER MANUFACTURING	0.0	0.1	0.2	0.1	0.0	0.1	0.1
25 MISC. CONST., TRADE, SERVICE	5.4	3.1	7.8	3.1	2.0	3.7	2.4
TOTAL LOCAL PURCHASES	17.2	34.7	21.6	6.5	7.3	11.3	7.6
VALUE ADDED	29.5	155.3	57.0	23.6	17.7	30.4	24.4
IMPORTS	21.6	227.9	76.0	26.5	7.6	25.1	18.5
TOTAL PURCHASES	68.3	418.0	154.6	56.6	32.6	66.7	50.5

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	1.1
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	4.5
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	2.9
4 MINING	0.1	0.1	0.0	15.8
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	9.5
6 TEXTILE MILL PRODUCTS	0.0	0.0	0.2	0.3
7 APPAREL	0.3	0.2	0.0	1.2
8 LUMBER AND WOOD PRODUCTS	1.8	6.0	0.3	16.4
9 FURNITURE AND FIXTURES	0.3	0.7	0.0	0.1
10 PAPER AND ALLIED PRODUCTS	0.0	0.4	1.1	16.4
11 PRINTING AND PUBLISHING	0.0	0.0	0.2	52.7
12 CHEMICALS	0.0	1.1	0.0	12.0
13 PETROLEUM REFINING	2.2	0.9	0.1	41.6
14 STONE, CLAY AND GLASS	7.0	6.6	0.3	25.2
15 IRON AND STEEL	8.0	10.7	0.0	5.8
16 NONFERROUS METALS	11.7	4.1	0.7	0.0
17 FABRICATED METALS	18.3	11.7	0.8	4.8
18 NONELECTRICAL MOTIVE EQUIPMENT	0.1	0.3	0.0	0.5
19 MACHINE TOOLS AND SHOPS	10.8	0.7	0.1	0.9
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.8	0.2	0.0	2.3
21 ELECTRICAL MACHINERY	3.2	0.4	0.0	2.8
22 AEROSPACE	0.0	0.7	0.1	13.9
23 OTHER TRANSPORTATION EQUIPMENT	0.6	2.3	0.0	0.9
24 OTHER MANUFACTURING	1.3	0.0	0.4	3.4
25 MISC. CONST., TRADE, SERVICE	9.2	14.8	3.6	873.4
TOTAL LOCAL PURCHASES	75.8	61.9	8.1	1108.4
VALUE ADDED	573.2	116.3	20.4	3597.5
IMPORTS	561.2	131.0	17.2	896.0
TOTAL PURCHASES	1210.1	309.2	45.7	5601.9

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963 (CONTINUED)

(MILLIONS OF DOLLARS)

SELLING INDUSTRY	TOTAL LOCAL SALES	FINAL DEMAND: LOCAL PRIVATE USE	FINAL DEMAND: STATE AND LOCAL GOVERNMENT	FINAL DEMAND: FEDERAL GOVERNMENT	FINAL DEMAND: EXPORTS	FINAL DEMAND: TOTAL FINAL DEMAND	TOTAL SALES
1 LIVESTOCK AND PRODUCTS	192.4	38.5	0.0	0.0	4.5	43.0	235.4
2 OTHER AGRICULTURAL PRODUCTS	123.9	26.2	0.1	0.0	272.7	299.0	422.9
3 FORESTRY AND FISHERY PRODUCTS	111.2	2.3	0.0	0.0	4.8	7.1	118.3
4 MINING	40.0	0.2	0.3	2.9	10.0	13.4	53.4
5 FOOD AND KINDRED PRODUCTS	131.1	476.9	11.8	34.7	458.5	981.9	1113.0
6 TEXTILE MILL PRODUCTS	2.1	1.9	0.0	1.2	7.1	10.2	12.3
7 APPAREL	6.8	16.5	0.1	0.2	36.6	53.4	60.2
8 LUMBER AND WOOD PRODUCTS	349.7	4.0	2.0	9.5	550.4	565.9	915.6
9 FURNITURE AND FIXTURES	2.4	11.6	0.8	0.1	25.2	37.7	40.1
10 PAPER AND ALLIED PRODUCTS	134.6	11.0	2.1	5.7	535.7	554.5	689.1
11 PRINTING AND PUBLISHING	82.7	30.5	1.2	0.0	8.4	40.1	122.8
12 CHEMICALS	53.4	3.3	0.8	210.3	41.5	255.9	309.3
13 PETROLEUM REFINING	88.6	107.6	5.9	10.6	52.8	176.9	265.5
14 STONE, CLAY AND GLASS	107.8	8.8	1.4	2.1	11.1	23.4	131.2
15 IRON AND STEEL	42.8	2.3	0.2	2.6	20.4	25.5	68.3
16 NONFERROUS METALS	31.8	2.3	0.0	0.7	383.2	386.2	418.0
17 FABRICATED METALS	88.7	8.1	1.1	7.2	49.5	65.9	154.6
18 NONELECTRICAL MOTIVE EQUIPMENT	1.9	22.0	0.3	2.1	30.3	54.7	56.6
19 MACHINE TOOLS AND SHOPS	17.7	1.8	0.4	3.9	8.8	14.9	32.6
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	6.3	8.0	0.1	4.3	48.0	60.4	66.7
21 ELECTRICAL MACHINERY	8.7	3.4	0.3	15.0	23.1	41.8	50.5
22 AEROSPACE	15.9	0.0	0.4	775.4	418.4	1194.2	1210.1
23 OTHER TRANSPORTATION EQUIPMENT	4.5	10.6	1.1	187.5	105.5	304.7	309.2
24 OTHER MANUFACTURING	7.9	7.4	0.6	2.0	27.8	37.8	45.7
25 MISC. CONST., TRADE, SERVICE	1287.8	3496.7	331.9	102.4	383.1	4314.1	5601.9
TOTAL LOCAL PURCHASES		4301.9	362.9	1380.4	3517.4	9562.6	12503.3
VALUE ADDED	6314.5	2669.2	837.1	483.7	0.0	3990.0	10304.5
IMPORTS	3248.1	81.1	0.0	0.0	0.0	81.1	3329.2
TOTAL PURCHASES	12503.3	7052.2	1200.0	1864.1	3517.4	13633.7	26137.0

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	8.2302	4.0950	6.6540	0.0000	13.1728	0.6372	0.0000
2 OTHER AGRICULTURAL PRODUCTS	20.8022	1.5042	23.2290	0.0000	1.4821	0.4886	0.0380
3 FORESTRY AND FISHERY PRODUCTS	1.9467	3.7935	0.7818	0.0000	0.0000	0.0000	0.7999
4 MINING	0.0091	0.1167	0.0005	2.2872	0.0283	0.0481	0.0019
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0088	0.4494	0.0000	10.4430	0.1965	0.0009
6 TEXTILE MILL PRODUCTS	0.0050	0.0000	0.1200	0.0102	0.0000	5.5354	0.0000
7 APPAREL	0.0098	0.0451	0.0000	0.0000	0.0547	0.1518	4.5474
8 LUMBER AND WOOD PRODUCTS	0.0084	0.4975	0.0000	0.0421	0.1714	0.0122	0.0005
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0100	0.0302
10 PAPER AND ALLIED PRODUCTS	0.0312	0.0064	0.4251	0.3575	0.9035	0.5867	0.5674
11 PRINTING AND PUBLISHING	0.0211	0.0337	0.0034	0.0314	0.1597	0.0783	0.1080
12 CHEMICALS	0.0000	0.0000	0.0000	0.6969	0.2885	0.0000	0.4485
13 PETROLEUM REFINING	0.0000	1.8730	0.2377	0.8517	0.3184	0.2022	0.0436
14 STONE, CLAY AND GLASS	0.0358	0.2207	0.0000	7.9400	0.9946	0.4566	0.0027
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.0000	0.0010	0.0156	0.0052
16 NONFERROUS METALS	0.0049	0.0045	0.0000	0.2893	0.0723	0.0303	0.0008
17 FABRICATED METALS	0.0519	0.0000	0.3560	0.0000	1.7406	0.1029	0.1424
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0014	0.0622	0.0000	0.3099	0.0000	0.0004	0.0000
19 MACHINE TOOLS AND SHOPS	0.0027	0.0043	0.0000	0.0000	0.0084	0.0083	0.0020
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.0585	0.0000	0.0985	0.0020
21 ELECTRICAL MACHINERY	0.0054	0.0159	0.0004	0.0483	0.0089	0.0051	0.0004
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0023	0.0036
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0031	0.0635	0.0000	0.0000	0.0007	0.0000
24 OTHER MANUFACTURING	0.0072	0.0541	0.0270	0.0352	0.0181	0.0642	0.2138
25 MISC. CONST., TRADE, SERVICE	0.0000	12.6480	4.7604	0.0000	8.5621	1.2602	2.0936
TOTAL LOCAL PURCHASES	31.1731	24.9866	37.1031	12.9581	38.6285	9.9921	9.0529
VALUE ADDED	36.1899	51.5119	50.3485	61.7755	30.2740	29.9109	35.9576
IMPORTS	32.6371	23.5015	12.5484	25.2663	31.0975	60.0970	54.9895
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	1.9109	0.0000	0.0000	0.0000	0.0817	0.0000	0.0382
3 FORESTRY AND FISHERY PRODUCTS	9.3842	0.0000	0.0000	0.0000	0.1116	0.0000	0.0000
4 MINING	0.0086	0.0162	0.3746	0.0000	1.1389	0.0000	1.8505
5 FOOD AND KINDRED PRODUCTS	0.0008	0.4520	0.2222	0.0000	0.8889	0.0444	0.0553
6 TEXTILE MILL PRODUCTS	0.0042	1.0184	0.0000	0.0322	0.0061	0.0000	0.0408
7 APPAREL	0.0429	0.0517	0.0788	0.0000	0.0790	0.0073	0.0148
8 LUMBER AND WOOD PRODUCTS	30.9038	9.3073	4.5463	0.0049	0.2965	0.0159	0.5050
9 FURNITURE AND FIXTURES	0.0737	0.8276	0.0041	0.0112	0.0001	0.0000	0.0047
10 PAPER AND ALLIED PRODUCTS	0.6327	0.8173	11.4273	10.0386	0.8874	0.2842	1.9641
11 PRINTING AND PUBLISHING	0.4067	0.0581	0.9979	12.3114	0.2687	0.0042	0.2145
12 CHEMICALS	0.6617	0.4970	0.0900	0.6076	7.1788	0.0352	1.5443
13 PETROLEUM REFINING	0.5956	0.1826	0.5872	0.0776	4.2801	2.4074	0.9273
14 STONE, CLAY AND GLASS	0.9756	4.6186	0.5014	0.0029	0.9474	0.4178	21.7484
15 IRON AND STEEL	0.0000	1.6429	0.0000	0.0000	0.6255	0.0032	0.0000
16 NONFERROUS METALS	0.0780	1.2686	0.1611	0.1553	1.1354	0.0136	0.1532
17 FABRICATED METALS	0.7418	3.8703	0.6738	0.0000	0.6053	1.0109	1.2266
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0020	0.0053	0.0000	0.0002	0.0034	0.0000	0.0010
19 MACHINE TOOLS AND SHOPS	0.0014	0.0575	0.0401	0.0056	0.0000	0.0060	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0101	0.1114	0.0000	0.0601	0.1336	0.0013	0.0000
21 ELECTRICAL MACHINERY	0.0217	0.0498	0.0049	0.0165	0.0000	0.0077	0.0653
22 AEROSPACE	0.0019	0.0189	0.0018	0.1098	0.0047	0.0000	0.0075
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0125	0.0000	0.0028	0.0001	0.0002	0.0000
24 OTHER MANUFACTURING	0.0632	0.1328	0.1055	0.0672	0.0000	0.0039	0.0960
25 MISC. CONST., TRADE, SERVICE	9.8548	7.3212	6.6895	10.6402	8.3677	3.5631	11.9657
TOTAL LOCAL PURCHASES	56.3763	32.3379	26.5065	34.1444	27.0416	7.8265	42.4232
VALUE ADDED	32.1271	38.1522	43.5058	36.9826	41.9900	23.0412	50.1113
IMPORTS	11.4966	29.5098	29.9877	28.8730	30.9684	69.1323	7.4655
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0181	0.0000	0.0000	0.0000
4 MINING	2.4057	2.7903	0.0145	0.0183	0.0054	0.0150	0.0277
5 FOOD AND KINDRED PRODUCTS	0.0253	0.0045	0.0004	0.0031	0.0000	0.0199	0.0000
6 TEXTILE MILL PRODUCTS	0.0010	0.0437	0.0115	0.0130	0.0000	0.0207	0.0123
7 APPAREL	0.0261	0.0209	0.0303	0.0217	0.0371	0.0284	0.0253
8 LUMBER AND WOOD PRODUCTS	0.1345	0.0331	0.4611	0.1637	0.0370	0.5557	0.2214
9 FURNITURE AND FIXTURES	0.0023	0.0002	0.0595	0.0096	0.0002	0.0086	0.2023
10 PAPER AND ALLIED PRODUCTS	0.1852	0.1937	0.4656	0.0920	0.0075	0.2319	0.7015
11 PRINTING AND PUBLISHING	0.1587	0.0960	0.1326	0.0513	0.0172	0.1069	0.1116
12 CHEMICALS	0.3807	0.8705	0.1195	0.1546	0.0369	0.1846	0.4433
13 PETROLEUM REFINING	0.4037	0.0000	0.0000	0.3388	0.7673	0.4123	0.1827
14 STONE, CLAY AND GLASS	0.0000	0.6623	0.2536	1.0366	3.0411	1.0963	0.0000
15 IRON AND STEEL	8.5736	0.0945	5.9833	0.0000	0.0000	0.0000	0.3356
16 NONFERROUS METALS	2.1232	0.0000	0.0000	0.6776	4.8780	4.2505	3.3970
17 FABRICATED METALS	2.3544	1.9899	0.0000	0.2488	3.3651	1.8066	3.0634
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0175	0.0011	0.0551	0.4891	0.0642	0.0000	0.0540
19 MACHINE TOOLS AND SHOPS	0.4103	0.3831	0.5206	0.7852	2.9185	0.7336	0.3524
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0564	0.0656	0.3451	0.9718	0.3145	1.0182	0.1837
21 ELECTRICAL MACHINERY	0.0000	0.2548	0.1072	0.2888	0.2229	0.3387	0.0209
22 AEROSPACE	0.0070	0.0104	0.1079	0.1126	0.2320	0.4077	0.6768
23 OTHER TRANSPORTATION EQUIPMENT	0.0395	0.0291	0.1380	0.2478	0.1555	0.1019	0.0572
24 OTHER MANUFACTURING	0.0329	0.0282	0.1041	0.2007	0.0000	0.0922	0.2133
25 MISC. CONST., TRADE, SERVICE	7.9063	0.7329	5.0719	5.5525	6.1647	5.4880	4.7926
TOTAL LOCAL PURCHASES	25.2442	8.3050	13.9821	11.4957	22.2650	16.9179	15.0752
VALUE ADDED	43.1273	37.1644	36.8740	41.7649	54.3133	45.5114	48.2574
IMPORTS	31.6286	54.5306	49.1439	46.7394	23.4218	37.5707	36.6674
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0204
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0672	0.0796
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0298	0.0514
4 MINING	0.0060	0.0250	0.0281	0.2820
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0796	0.1701
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.3756	0.0054
7 APPAREL	0.0264	0.0796	0.0945	0.0208
8 LUMBER AND WOOD PRODUCTS	0.1455	1.9444	0.6129	0.2931
9 FURNITURE AND FIXTURES	0.0210	0.2323	0.0295	0.0024
10 PAPER AND ALLIED PRODUCTS	0.0000	0.1255	2.3128	0.2928
11 PRINTING AND PUBLISHING	0.0000	0.0000	0.4546	0.9405
12 CHEMICALS	0.0000	0.3576	0.0000	0.2135
13 PETROLEUM REFINING	0.1849	0.2757	0.2102	0.7420
14 STONE, CLAY AND GLASS	0.5826	2.1223	0.7460	0.4494
15 IRON AND STEEL	0.6597	3.4572	0.0000	0.1042
16 NONFERROUS METALS	0.9649	1.3399	1.6161	0.0000
17 FABRICATED METALS	1.5163	3.7693	1.7864	0.0857
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0118	0.1095	0.0021	0.0094
19 MACHINE TOOLS AND SHOPS	0.8954	0.2321	0.1400	0.0157
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0697	0.0752	0.0391	0.0404
21 ELECTRICAL MACHINERY	0.2635	0.1432	0.0000	0.0496
22 AEROSPACE	0.0000	0.2250	0.2467	0.2486
23 OTHER TRANSPORTATION EQUIPMENT	0.0481	0.7373	0.0430	0.0155
24 OTHER MANUFACTURING	0.1086	0.0000	0.7841	0.0612
25 MISC. CONST., TRADE, SERVICE	0.7592	4.7841	7.9554	15.5920
TOTAL LOCAL PURCHASES	6.2637	20.0353	17.6536	19.7855
VALUE ADDED	47.3639	37.6067	44.6453	64.2195
IMPORTS	46.3724	42.3580	37.7011	15.9951
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	1.1027	0.0494	0.0863	0.0001	0.1632	0.0081	0.0008
2 OTHER AGRICULTURAL PRODUCTS	0.2403	1.0358	0.2590	0.0002	0.0551	0.0072	0.0027
3 FORESTRY AND FISHERY PRODUCTS	0.0310	0.0414	1.0198	0.0002	0.0058	0.0005	0.0087
4 MINING	0.0005	0.0018	0.0007	1.0257	0.0012	0.0008	0.0002
5 FOOD AND KINDRED PRODUCTS	0.0003	0.0006	0.0054	0.0002	1.1170	0.0024	0.0002
6 TEXTILE MILL PRODUCTS	0.0001	0.0001	0.0013	0.0002	0.0000	1.0586	0.0000
7 APPAREL	0.0002	0.0005	0.0002	0.0000	0.0007	0.0017	1.0477
8 LUMBER AND WOOD PRODUCTS	0.0021	0.0083	0.0027	0.0020	0.0049	0.0009	0.0007
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0003
10 PAPER AND ALLIED PRODUCTS	0.0009	0.0013	0.0056	0.0068	0.0129	0.0075	0.0072
11 PRINTING AND PUBLISHING	0.0008	0.0022	0.0013	0.0009	0.0037	0.0013	0.0017
12 CHEMICALS	0.0001	0.0005	0.0003	0.0096	0.0042	0.0002	0.0052
13 PETROLEUM REFINING	0.0050	0.0214	0.0083	0.0106	0.0062	0.0026	0.0010
14 STONE, CLAY AND GLASS	0.0015	0.0043	0.0016	0.1045	0.0156	0.0065	0.0004
15 IRON AND STEEL	0.0001	0.0002	0.0004	0.0002	0.0015	0.0003	0.0002
16 NONFERROUS METALS	0.0001	0.0001	0.0001	0.0033	0.0010	0.0004	0.0001
17 FABRICATED METALS	0.0008	0.0007	0.0041	0.0016	0.0201	0.0014	0.0017
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0002	0.0007	0.0002	0.0032	0.0001	0.0000	0.0000
19 MACHINE TOOLS AND SHOPS	0.0001	0.0001	0.0001	0.0001	0.0003	0.0001	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0001	0.0001	0.0007	0.0001	0.0011	0.0000
21 ELECTRICAL MACHINERY	0.0001	0.0003	0.0001	0.0006	0.0002	0.0001	0.0000
22 AEROSPACE	0.0001	0.0004	0.0003	0.0001	0.0004	0.0001	0.0001
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0001	0.0007	0.0000	0.0001	0.0000	0.0000
24 OTHER MANUFACTURING	0.0003	0.0007	0.0005	0.0005	0.0004	0.0007	0.0023
25 MISC. CONST., TRADE, SERVICE	0.0388	0.1608	0.0988	0.0177	0.1283	0.0194	0.0288
TOTAL LOCAL PURCHASES	1.4262	1.3318	1.4977	1.1889	1.5431	1.1219	1.1102

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963(CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0132	0.0022	0.0012	0.0002	0.0019	0.0001	0.0004
2 OTHER AGRICULTURAL PRODUCTS	0.0641	0.0066	0.0036	0.0006	0.0022	0.0001	0.0014
3 FORESTRY AND FISHERY PRODUCTS	0.1400	0.0134	0.0073	0.0010	0.0020	0.0001	0.0014
4 MINING	0.0014	0.0028	0.0049	0.0012	0.0138	0.0003	0.0253
5 FOOD AND KINDRED PRODUCTS	0.0013	0.0056	0.0031	0.0007	0.0110	0.0006	0.0015
6 TEXTILE MILL PRODUCTS	0.0003	0.0110	0.0000	0.0004	0.0001	0.0000	0.0006
7 APPAREL	0.0008	0.0007	0.0010	0.0002	0.0010	0.0001	0.0003
8 LUMBER AND WOOD PRODUCTS	1.4499	0.1382	0.0751	0.0094	0.0062	0.0008	0.0125
9 FURNITURE AND FIXTURES	0.0011	1.0085	0.0001	0.0001	0.0000	0.0000	0.0001
10 PAPER AND ALLIED PRODUCTS	0.0135	0.0131	1.1320	0.1304	0.0126	0.0037	0.0303
11 PRINTING AND PUBLISHING	0.0091	0.0031	0.0144	1.1437	0.0048	0.0006	0.0057
12 CHEMICALS	0.0113	0.0081	0.0022	0.0081	1.0783	0.0006	0.0222
13 PETROLEUM REFINING	0.0127	0.0050	0.0084	0.0034	0.0487	1.0251	0.0151
14 STONE, CLAY AND GLASS	0.0200	0.0629	0.0095	0.0022	0.0159	0.0059	1.2824
15 IRON AND STEEL	0.0011	0.0211	0.0007	0.0003	0.0081	0.0008	0.0015
16 NONFERROUS METALS	0.0014	0.0138	0.0020	0.0022	0.0126	0.0002	0.0025
17 FABRICATED METALS	0.0121	0.0422	0.0087	0.0013	0.0081	0.0106	0.0167
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0001	0.0001	0.0000	0.0000	0.0001	0.0000	0.0001
19 MACHINE TOOLS AND SHOPS	0.0001	0.0010	0.0006	0.0002	0.0002	0.0001	0.0002
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0003	0.0014	0.0001	0.0008	0.0016	0.0001	0.0002
21 ELECTRICAL MACHINERY	0.0005	0.0007	0.0002	0.0003	0.0001	0.0001	0.0010
22 AEROSPACE	0.0005	0.0006	0.0003	0.0017	0.0004	0.0001	0.0006
23 OTHER TRANSPORTATION EQUIPMENT	0.0001	0.0002	0.0000	0.0001	0.0000	0.0000	0.0001
24 OTHER MANUFACTURING	0.0012	0.0017	0.0014	0.0010	0.0001	0.0001	0.0014
25 MISC. CONST., TRADE, SERVICE	0.1948	0.1225	0.1043	0.1574	0.1166	0.0455	0.1911
TOTAL LOCAL PURCHASES	1.9509	1.4864	1.3812	1.4671	1.3463	1.0957	1.6144

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0001	0.0000	0.0001	0.0001	0.0001	0.0002	0.0001
2 OTHER AGRICULTURAL PRODUCTS	0.0003	0.0001	0.0004	0.0003	0.0002	0.0005	0.0003
3 FORESTRY AND FISHERY PRODUCTS	0.0004	0.0001	0.0008	0.0005	0.0002	0.0009	0.0005
4 MINING	0.0281	0.0290	0.0022	0.0009	0.0026	0.0020	0.0017
5 FOOD AND KINDRED PRODUCTS	0.0006	0.0002	0.0002	0.0002	0.0002	0.0004	0.0002
6 TEXTILE MILL PRODUCTS	0.0000	0.0005	0.0001	0.0002	0.0001	0.0003	0.0002
7 APPAREL	0.0004	0.0002	0.0004	0.0003	0.0005	0.0004	0.0003
8 LUMBER AND WOOD PRODUCTS	0.0031	0.0011	0.0077	0.0032	0.0017	0.0091	0.0047
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0006	0.0001	0.0000	0.0001	0.0021
10 PAPER AND ALLIED PRODUCTS	0.0035	0.0030	0.0062	0.0020	0.0019	0.0039	0.0089
11 PRINTING AND PUBLISHING	0.0033	0.0014	0.0025	0.0015	0.0014	0.0022	0.0022
12 CHEMICALS	0.0053	0.0099	0.0019	0.0023	0.0019	0.0030	0.0054
13 PETROLEUM REFINING	0.0060	0.0010	0.0011	0.0044	0.0093	0.0053	0.0028
14 STONE, CLAY AND GLASS	0.0042	0.0119	0.0044	0.0146	0.0416	0.0158	0.0015
15 IRON AND STEEL	1.0957	0.0025	0.0658	0.0005	0.0027	0.0016	0.0060
16 NONFERROUS METALS	0.0237	1.0006	0.0020	0.0079	0.0507	0.0437	0.0346
17 FABRICATED METALS	0.0268	0.0205	1.0022	0.0037	0.0367	0.0201	0.0321
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0003	0.0001	0.0006	1.0049	0.0007	0.0000	0.0006
19 MACHINE TOOLS AND SHOPS	0.0049	0.0041	0.0057	0.0083	1.0306	0.0080	0.0041
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0008	0.0008	0.0036	0.0100	0.0035	1.0105	0.0021
21 ELECTRICAL MACHINERY	0.0002	0.0026	0.0012	0.0030	0.0026	0.0036	1.0004
22 AEROSPACE	0.0004	0.0002	0.0013	0.0014	0.0027	0.0044	0.0070
23 OTHER TRANSPORTATION EQUIPMENT	0.0005	0.0003	0.0014	0.0026	0.0017	0.0011	0.0007
24 OTHER MANUFACTURING	0.0005	0.0004	0.0011	0.0021	0.0002	0.0011	0.0023
25 MISC. CONST., TRADE, SERVICE	0.1075	0.0140	0.0701	0.0715	0.0858	0.0730	0.0631
TOTAL LOCAL PURCHASES	1.3168	1.1047	1.1839	1.1465	1.2795	1.2111	1.1839

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0000	0.0003	0.0004	0.0008
2 OTHER AGRICULTURAL PRODUCTS	0.0001	0.0014	0.0015	0.0016
3 FORESTRY AND FISHERY PRODUCTS	0.0002	0.0029	0.0015	0.0012
4 MINING	0.0008	0.0025	0.0014	0.0037
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0003	0.0012	0.0023
6 TEXTILE MILL PRODUCTS	0.0000	0.0001	0.0040	0.0001
7 APPAREL	0.0003	0.0009	0.0011	0.0003
8 LUMBER AND WOOD PRODUCTS	0.0025	0.0298	0.0115	0.0056
9 FURNITURE AND FIXTURES	0.0002	0.0024	0.0003	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0005	0.0031	0.0280	0.0057
11 PRINTING AND PUBLISHING	0.0002	0.0012	0.0068	0.0129
12 CHEMICALS	0.0004	0.0052	0.0008	0.0030
13 PETROLEUM REFINING	0.0022	0.0044	0.0034	0.0094
14 STONE, CLAY AND GLASS	0.0082	0.0291	0.0111	0.0075
15 IRON AND STEEL	0.0083	0.0409	0.0014	0.0015
16 NONFERROUS METALS	0.0105	0.0148	0.0166	0.0002
17 FABRICATED METALS	0.0162	0.0403	0.0191	0.0015
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0001	0.0012	0.0001	0.0001
19 MACHINE TOOLS AND SHOPS	0.0094	0.0029	0.0017	0.0002
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0008	0.0010	0.0005	0.0005
21 ELECTRICAL MACHINERY	0.0027	0.0016	0.0001	0.0006
22 AEROSPACE	1.0001	0.0025	0.0028	0.0030
23 OTHER TRANSPORTATION EQUIPMENT	0.0005	1.0075	0.0005	0.0002
24 OTHER MANUFACTURING	0.0011	0.0002	1.0081	0.0008
25 MISC. CONST., TRADE, SERVICE	0.0136	0.0733	0.1034	1.1902
TOTAL LOCAL PURCHASES	1.0793	1.2699	1.2273	1.2530

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	8.2302	4.0950	6.6540	0.0000	13.1728	0.6372	0.0000
2 OTHER AGRICULTURAL PRODUCTS	20.8022	1.5042	23.2290	0.0000	1.6821	0.4886	0.0380
3 FORESTRY AND FISHERY PRODUCTS	1.9467	3.7935	0.7818	0.0000	0.0000	0.0000	0.7999
4 MINING	0.0091	0.1167	0.0005	2.2872	0.0283	0.0481	0.0019
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0088	0.4494	0.0000	10.4430	0.1965	0.0009
6 TEXTILE MILL PRODUCTS	0.0050	0.0000	0.1200	0.0102	0.0000	5.5354	0.0000
7 APPAREL	0.0098	0.0451	0.0000	0.0000	0.0547	0.1518	4.5474
8 LUMBER AND WOOD PRODUCTS	0.0084	0.4975	0.0000	0.0421	0.1714	0.0122	0.0005
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0100	0.0302
10 PAPER AND ALLIED PRODUCTS	0.0312	0.0064	0.4251	0.3575	0.9035	0.5867	0.5674
11 PRINTING AND PUBLISHING	0.0211	0.0337	0.0034	0.0314	0.1597	0.0783	0.1080
12 CHEMICALS	0.0000	0.0000	0.0000	0.6969	0.2885	0.0000	0.4485
13 PETROLEUM REFINING	0.0000	1.8730	0.2327	0.8517	0.3184	0.2022	0.0436
14 STONE, CLAY AND GLASS	0.0358	0.2207	0.0000	7.9400	0.9946	0.4566	0.0027
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.0000	0.0010	0.0156	0.0052
16 NONFERROUS METALS	0.0049	0.0045	0.0000	0.2893	0.0723	0.0303	0.0008
17 FABRICATED METALS	0.0519	0.0000	0.3560	0.0000	1.7406	0.1029	0.1424
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0014	0.0622	0.0000	0.3099	0.0000	0.0004	0.0000
19 MACHINE TOOLS AND SHOPS	0.0027	0.0043	0.0000	0.0000	0.0084	0.0083	0.0020
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.0585	0.0000	0.0985	0.0020
21 ELECTRICAL MACHINERY	0.0054	0.0159	0.0004	0.0483	0.0089	0.0051	0.0004
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0023	0.0036
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0031	0.0635	0.0000	0.0000	0.0007	0.0000
24 OTHER MANUFACTURING	0.0072	0.0541	0.0270	0.0352	0.0181	0.0642	0.2138
25 MISC. CONST., TRADE, SERVICE	0.0000	12.6480	4.7604	0.0000	8.5621	1.2602	2.0936
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	24.7675	35.2536	34.4574	42.2778	20.7189	20.4703	24.6086
TOTAL LOCAL PURCHASES	55.9406	60.2402	71.5605	55.2359	59.3473	30.4624	33.6615
OTHER LOCAL PAYMENTS	11.4223	16.2583	15.8911	19.4978	9.5552	9.4406	11.3490
IMPORTS	32.6371	23.5015	12.5484	25.2663	31.0975	60.0970	54.9895
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	1.9109	0.0000	0.0000	0.0000	0.0817	0.0000	0.0382
3 FORESTRY AND FISHERY PRODUCTS	9.3842	0.0000	0.0000	0.0000	0.1116	0.0000	0.0000
4 MINING	0.0086	0.0162	0.3746	0.0000	1.1389	0.0000	1.8505
5 FOOD AND KINDRED PRODUCTS	0.0008	0.4520	0.2222	0.0000	0.8889	0.0444	0.0553
6 TEXTILE MILL PRODUCTS	0.0042	1.0184	0.0000	0.0322	0.0061	0.0000	0.0408
7 APPAREL	0.0429	0.0517	0.0788	0.0000	0.0790	0.0073	0.0148
8 LUMBER AND WOOD PRODUCTS	30.9038	9.3073	4.5463	0.0049	0.2965	0.0159	0.5050
9 FURNITURE AND FIXTURES	0.0737	0.8276	0.0041	0.0112	0.0001	0.0000	0.0047
10 PAPER AND ALLIED PRODUCTS	0.6327	0.8173	11.4273	10.0386	0.8874	0.2842	1.9641
11 PRINTING AND PUBLISHING	0.4067	0.0581	0.9979	12.3114	0.2687	0.0042	0.2145
12 CHEMICALS	0.6617	0.4970	0.0900	0.6076	7.1788	0.0352	1.5443
13 PETROLEUM REFINING	0.5956	0.1826	0.5872	0.0776	4.2801	2.4074	0.9273
14 STONE, CLAY AND GLASS	0.9756	4.6186	0.5014	0.0029	0.9474	0.4178	21.7484
15 IRON AND STEEL	0.0000	1.6429	0.0000	0.0000	0.6255	0.0032	0.0000
16 NONFERROUS METALS	0.0780	1.2686	0.1611	0.1553	1.1354	0.0136	0.1532
17 FABRICATED METALS	0.7418	3.8703	0.6736	0.0000	0.6053	1.0109	1.2266
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0020	0.0053	0.0000	0.0002	0.0034	0.0000	0.0010
19 MACHINE TOOLS AND SHOPS	0.0014	0.0575	0.0401	0.0056	0.0000	0.0060	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0101	0.1114	0.0000	0.0601	0.1336	0.0013	0.0000
21 ELECTRICAL MACHINERY	0.0217	0.0498	0.0049	0.0165	0.0000	0.0077	0.0653
22 AEROSPACE	0.0019	0.0189	0.0018	0.1098	0.0047	0.0000	0.0075
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0125	0.0000	0.0028	0.0001	0.0002	0.0000
24 OTHER MANUFACTURING	0.0632	0.1328	0.1055	0.0672	0.0000	0.0039	0.0960
25 MISC. CONST., TRADE, SERVICE	9.8548	7.3212	6.6895	10.6402	8.3677	3.5631	11.9657
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	21.9870	26.1105	29.7744	25.3101	28.7370	15.7689	34.2950
TOTAL LOCAL PURCHASES	78.3633	58.4485	56.2809	59.4545	55.7786	23.5953	76.7182
OTHER LOCAL PAYMENTS	10.1400	12.0417	13.7314	11.6726	13.2530	7.2723	15.8162
IMPORTS	11.4966	29.5098	29.9877	28.8730	30.9684	69.1323	7.4655
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0181	0.0000	0.0000	0.0000
4 MINING	2.4057	2.7903	0.0145	0.0183	0.0054	0.0150	0.0277
5 FOOD AND KINDRED PRODUCTS	0.0253	0.0045	0.0004	0.0031	0.0000	0.0199	0.0000
6 TEXTILE MILL PRODUCTS	0.0010	0.0437	0.0115	0.0130	0.0000	0.0207	0.0123
7 APPAREL	0.0261	0.0209	0.0303	0.0217	0.0371	0.0284	0.0253
8 LUMBER AND WOOD PRODUCTS	0.1345	0.0331	0.4611	0.1637	0.0370	0.5557	0.2214
9 FURNITURE AND FIXTURES	0.0023	0.0002	0.0595	0.0096	0.0002	0.0086	0.2023
10 PAPER AND ALLIED PRODUCTS	0.1852	0.1937	0.4656	0.0920	0.0075	0.2319	0.7015
11 PRINTING AND PUBLISHING	0.1587	0.0960	0.1326	0.0513	0.0172	0.1069	0.1116
12 CHEMICALS	0.3807	0.8705	0.1195	0.1546	0.0369	0.1846	0.4433
13 PETROLEUM REFINING	0.4037	0.0000	0.0000	0.3388	0.7673	0.4123	0.1827
14 STONE, CLAY AND GLASS	0.0000	0.6623	0.2536	1.0366	3.0411	1.0963	0.0000
15 IRON AND STEEL	8.5736	0.0945	5.9833	0.0000	0.0000	0.0000	0.3356
16 NONFERROUS METALS	2.1232	0.0000	0.0000	0.6776	4.8780	4.2505	3.3970
17 FABRICATED METALS	2.3544	1.9899	0.0000	0.2488	3.3651	1.8066	3.0634
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0175	0.0011	0.0551	0.4891	0.0642	0.0000	0.0540
19 MACHINE TOOLS AND SHOPS	0.4103	0.3831	0.5206	0.7852	2.9185	0.7336	0.3524
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0564	0.0656	0.3451	0.9718	0.3145	1.0182	0.1837
21 ELECTRICAL MACHINERY	0.0000	0.2548	0.1072	0.2888	0.2229	0.3387	0.0209
22 AEROSPACE	0.0070	0.0104	0.1079	0.1126	0.2320	0.4077	0.6768
23 OTHER TRANSPORTATION EQUIPMENT	0.0395	0.0291	0.1380	0.2478	0.1555	0.1019	0.0572
24 OTHER MANUFACTURING	0.0329	0.0282	0.1041	0.2007	0.0000	0.0922	0.2133
25 MISC. CONST., TRADE, SERVICE	7.9063	0.7329	5.0719	5.5525	6.1647	5.4880	4.7926
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	29.5153	25.4344	25.2357	28.5829	37.1708	31.1470	33.0262
TOTAL LOCAL PURCHASES	54.7595	33.7395	39.2178	40.0786	59.4357	48.0649	48.1014
OTHER LOCAL PAYMENTS	13.6119	11.7299	11.6383	13.1819	17.1425	14.3644	15.2311
IMPORTS	31.6286	54.5306	49.1439	46.7394	23.4218	37.5707	36.6674
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25	26
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0204	0.5459
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0672	0.0796	0.3715
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0298	0.0514	0.0326
4 MINING	0.0060	0.0250	0.0281	0.2820	0.0028
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0796	0.1701	6.7624
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.3756	0.0054	0.0269
7 APPAREL	0.0264	0.0796	0.0945	0.0208	0.2340
8 LUMBER AND WOOD PRODUCTS	0.1455	1.9444	0.6129	0.2931	0.0567
9 FURNITURE AND FIXTURES	0.0210	0.2323	0.0295	0.0024	0.1645
10 PAPER AND ALLIED PRODUCTS	0.0000	0.1255	2.3128	0.2928	0.1560
11 PRINTING AND PUBLISHING	0.0000	0.0000	0.4546	0.9405	0.4325
12 CHEMICALS	0.0000	0.3576	0.0000	0.2135	0.0468
13 PETROLEUM REFINING	0.1849	0.2757	0.2102	0.7420	1.5258
14 STONE, CLAY AND GLASS	0.5826	2.1223	0.7460	0.4494	0.1248
15 IRON AND STEEL	0.6597	3.4572	0.0000	0.1042	0.0326
16 NONFERROUS METALS	0.9649	1.3399	1.6161	0.0000	0.0326
17 FABRICATED METALS	1.5163	3.7693	1.7864	0.0857	0.1149
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0118	0.1095	0.0021	0.0094	0.3120
19 MACHINE TOOLS AND SHOPS	0.8954	0.2321	0.1400	0.0157	0.0255
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0697	0.0752	0.0391	0.0404	0.1134
21 ELECTRICAL MACHINERY	0.2635	0.1432	0.0000	0.0496	0.0482
22 AEROSPACE	0.0000	0.2250	0.2467	0.2486	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0481	0.7373	0.0430	0.0155	0.1503
24 OTHER MANUFACTURING	0.1086	0.0000	0.7841	0.0612	0.1049
25 MISC. CONST., TRADE, SERVICE	0.7592	4.7841	7.9554	15.5920	49.5831
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	32.4148	25.7372	30.5542	43.9503	0.0000
TOTAL LOCAL PURCHASES	38.6785	45.7725	48.2078	63.7358	61.0008
OTHER LOCAL PAYMENTS	14.9491	11.8695	14.0911	20.2691	37.8492
IMPORTS	46.3724	42.3580	37.7011	15.9951	1.1500
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	1.1126	0.0614	0.0995	0.0125	0.1727	0.0141	0.0079
2 OTHER AGRICULTURAL PRODUCTS	0.2458	1.0425	0.2663	0.0071	0.0604	0.0105	0.0066
3 FORESTRY AND FISHERY PRODUCTS	0.0321	0.0427	1.0211	0.0015	0.0068	0.0012	0.0094
4 MINING	0.0017	0.0032	0.0022	1.0271	0.0023	0.0015	0.0010
5 FOOD AND KINDRED PRODUCTS	0.0434	0.0530	0.0625	0.0543	1.1580	0.0288	0.0313
6 TEXTILE MILL PRODUCTS	0.0003	0.0003	0.0016	0.0004	0.0002	1.0587	0.0002
7 APPAREL	0.0017	0.0023	0.0021	0.0019	0.0022	0.0026	1.0487
8 LUMBER AND WOOD PRODUCTS	0.0046	0.0113	0.0061	0.0051	0.0072	0.0024	0.0025
9 FURNITURE AND FIXTURES	0.0010	0.0012	0.0013	0.0012	0.0009	0.0007	0.0010
10 PAPER AND ALLIED PRODUCTS	0.0044	0.0056	0.0103	0.0112	0.0163	0.0096	0.0097
11 PRINTING AND PUBLISHING	0.0074	0.0102	0.0100	0.0092	0.0100	0.0053	0.0065
12 CHEMICALS	0.0015	0.0022	0.0021	0.0113	0.0055	0.0010	0.0062
13 PETROLEUM REFINING	0.0168	0.0357	0.0239	0.0253	0.0174	0.0098	0.0096
14 STONE, CLAY AND GLASS	0.0053	0.0089	0.0067	0.1093	0.0192	0.0089	0.0032
15 IRON AND STEEL	0.0009	0.0012	0.0015	0.0012	0.0023	0.0008	0.0008
16 NONFERROUS METALS	0.0005	0.0006	0.0006	0.0038	0.0014	0.0007	0.0004
17 FABRICATED METALS	0.0029	0.0032	0.0068	0.0043	0.0221	0.0027	0.0032
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0020	0.0029	0.0026	0.0055	0.0018	0.0011	0.0013
19 MACHINE TOOLS AND SHOPS	0.0003	0.0004	0.0004	0.0004	0.0005	0.0003	0.0002
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0008	0.0011	0.0011	0.0017	0.0009	0.0016	0.0006
21 ELECTRICAL MACHINERY	0.0006	0.0008	0.0007	0.0012	0.0007	0.0004	0.0004
22 AEROSPACE	0.0010	0.0015	0.0014	0.0012	0.0012	0.0006	0.0007
23 OTHER TRANSPORTATION EQUIPMENT	0.0010	0.0012	0.0019	0.0012	0.0009	0.0006	0.0007
24 OTHER MANUFACTURING	0.0011	0.0017	0.0016	0.0016	0.0012	0.0012	0.0029
25 MISC. CONST., TRADE, SERVICE	0.3773	0.5719	0.5478	0.4421	0.4506	0.2265	0.2732
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.5618	0.6824	0.7450	0.7045	0.5348	0.3438	0.4056
TOTAL LOCAL PURCHASES	2.4287	2.5494	2.8272	2.4460	2.4974	1.7354	1.8339

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0261	0.0127	0.0119	0.0106	0.0121	0.0049	0.0148
2 OTHER AGRICULTURAL PRODUCTS	0.0713	0.0124	0.0095	0.0064	0.0078	0.0028	0.0094
3 FORESTRY AND FISHERY PRODUCTS	0.1413	0.0145	0.0084	0.0021	0.0030	0.0006	0.0028
4 MINING	0.0029	0.0040	0.0062	0.0024	0.0150	0.0008	0.0270
5 FOOD AND KINDRED PRODUCTS	0.0570	0.0512	0.0496	0.0458	0.0553	0.0215	0.0641
6 TEXTILE MILL PRODUCTS	0.0005	0.0112	0.0003	0.0006	0.0003	0.0001	0.0009
7 APPAREL	0.0027	0.0023	0.0026	0.0017	0.0025	0.0008	0.0025
8 LUMBER AND WOOD PRODUCTS	1.4531	0.1408	0.0778	0.0121	0.0088	0.0020	0.0161
9 FURNITURE AND FIXTURES	0.0023	1.0095	0.0011	0.0011	0.0010	0.0005	0.0015
10 PAPER AND ALLIED PRODUCTS	0.0180	0.0168	1.1358	0.1341	0.0162	0.0054	0.0355
11 PRINTING AND PUBLISHING	0.0176	0.0101	0.0215	1.1505	0.0116	0.0038	0.0152
12 CHEMICALS	0.0130	0.0095	0.0037	0.0096	1.0797	0.0013	0.0242
13 PETROLEUM REFINING	0.0279	0.0175	0.0211	0.0157	0.0608	1.0309	0.0322
14 STONE, CLAY AND GLASS	0.0249	0.0670	0.0136	0.0062	0.0198	0.0077	1.2880
15 IRON AND STEEL	0.0022	0.0219	0.0016	0.0012	0.0089	0.0012	0.0026
16 NONFERROUS METALS	0.0020	0.0142	0.0025	0.0026	0.0130	0.0004	0.0031
17 FABRICATED METALS	0.0148	0.0444	0.0109	0.0035	0.0103	0.0116	0.0197
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0024	0.0020	0.0020	0.0019	0.0020	0.0009	0.0027
19 MACHINE TOOLS AND SHOPS	0.0005	0.0013	0.0008	0.0005	0.0004	0.0003	0.0005
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0014	0.0023	0.0010	0.0016	0.0024	0.0005	0.0014
21 ELECTRICAL MACHINERY	0.0011	0.0012	0.0007	0.0008	0.0006	0.0003	0.0017
22 AEROSPACE	0.0017	0.0015	0.0012	0.0026	0.0013	0.0005	0.0019
23 OTHER TRANSPORTATION EQUIPMENT	0.0013	0.0012	0.0010	0.0010	0.0010	0.0005	0.0014
24 OTHER MANUFACTURING	0.0023	0.0026	0.0023	0.0019	0.0010	0.0005	0.0027
25 MISC. CONST., TRADE, SERVICE	0.6328	0.4807	0.4693	0.5118	0.4643	0.2099	0.6826
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.7269	0.5945	0.6057	0.5881	0.5771	0.2728	0.8158
TOTAL LOCAL PURCHASES	3.2479	2.5473	2.4620	2.5164	2.3761	1.5826	3.0701

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0105	0.0075	0.0082	0.0088	0.0120	0.0099	0.0101
2 OTHER AGRICULTURAL PRODUCTS	0.0060	0.0042	0.0049	0.0051	0.0068	0.0059	0.0058
3 FORESTRY AND FISHERY PRODUCTS	0.0014	0.0009	0.0016	0.0014	0.0014	0.0019	0.0015
4 MINING	0.0293	0.0299	0.0031	0.0020	0.0040	0.0031	0.0029
5 FOOD AND KINDRED PRODUCTS	0.0455	0.0324	0.0353	0.0379	0.0519	0.0428	0.0436
6 TEXTILE MILL PRODUCTS	0.0003	0.0006	0.0003	0.0003	0.0003	0.0005	0.0004
7 APPAREL	0.0019	0.0014	0.0016	0.0016	0.0022	0.0018	0.0018
8 LUMBER AND WOOD PRODUCTS	0.0057	0.0029	0.0098	0.0054	0.0047	0.0115	0.0072
9 FURNITURE AND FIXTURES	0.0010	0.0007	0.0014	0.0009	0.0012	0.0011	0.0030
10 PAPER AND ALLIED PRODUCTS	0.0072	0.0057	0.0091	0.0051	0.0061	0.0074	0.0124
11 PRINTING AND PUBLISHING	0.0101	0.0063	0.0079	0.0072	0.0093	0.0087	0.0088
12 CHEMICALS	0.0068	0.0109	0.0031	0.0035	0.0036	0.0044	0.0068
13 PETROLEUM REFINING	0.0182	0.0098	0.0107	0.0147	0.0235	0.0169	0.0146
14 STONE, CLAY AND GLASS	0.0081	0.0148	0.0075	0.0179	0.0462	0.0196	0.0054
15 IRON AND STEEL	1.0966	0.0031	0.0664	0.0012	0.0036	0.0023	0.0068
16 NONFERROUS METALS	0.0241	1.0009	0.0023	0.0082	0.0512	0.0440	0.0350
17 FABRICATED METALS	0.0290	0.0220	1.0039	0.0055	0.0392	0.0222	0.0342
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0022	0.0015	0.0021	1.0065	0.0029	0.0018	0.0024
19 MACHINE TOOLS AND SHOPS	0.0052	0.0043	0.0059	0.0085	1.0309	0.0083	0.0043
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0017	0.0014	0.0043	0.0107	0.0045	1.0113	0.0029
21 ELECTRICAL MACHINERY	0.0007	0.0030	0.0015	0.0034	0.0031	0.0041	1.0009
22 AEROSPACE	0.0013	0.0008	0.0020	0.0022	0.0037	0.0052	0.0079
23 OTHER TRANSPORTATION EQUIPMENT	0.0015	0.0010	0.0022	0.0034	0.0028	0.0020	0.0016
24 OTHER MANUFACTURING	0.0014	0.0010	0.0018	0.0029	0.0012	0.0019	0.0031
25 MISC. CONST., TRADE, SERVICE	0.4602	0.2671	0.3460	0.3673	0.4919	0.4059	0.4034
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.5853	0.4200	0.4578	0.4908	0.6739	0.5523	0.5648
TOTAL LOCAL PURCHASES	2.3612	1.8542	2.0007	2.0223	2.4820	2.1967	2.1916

PART III: "IMPORTS-ONLY" METHOD, ADJUSTED FOR EXPORTS

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25	26
1	LIVESTOCK AND PRODUCTS	0.0090	0.0091	0.0102	0.0146	0.0255
2	OTHER AGRICULTURAL PRODUCTS	0.0051	0.0063	0.0070	0.0092	0.0142
3	FORESTRY AND FISHERY PRODUCTS	0.0012	0.0038	0.0025	0.0026	0.0026
4	MINING	0.0018	0.0036	0.0026	0.0053	0.0030
5	FOOD AND KINDRED PRODUCTS	0.0388	0.0384	0.0439	0.0622	0.1109
6	TEXTILE MILL PRODUCTS	0.0002	0.0002	0.0042	0.0004	0.0005
7	APPAREL	0.0016	0.0022	0.0025	0.0023	0.0038
8	LUMBER AND WOOD PRODUCTS	0.0047	0.0320	0.0140	0.0090	0.0064
9	FURNITURE AND FIXTURES	0.0011	0.0033	0.0013	0.0014	0.0024
10	PAPER AND ALLIED PRODUCTS	0.0036	0.0063	0.0315	0.0106	0.0091
11	PRINTING AND PUBLISHING	0.0061	0.0070	0.0133	0.0220	0.0169
12	CHEMICALS	0.0016	0.0064	0.0021	0.0050	0.0035
13	PETROLEUM REFINING	0.0128	0.0148	0.0151	0.0258	0.0303
14	STONE, CLAY AND GLASS	0.0116	0.0324	0.0148	0.0128	0.0098
15	IRON AND STEEL	0.0091	0.0416	0.0022	0.0026	0.0020
16	NONFERROUS METALS	0.0108	0.0152	0.0170	0.0008	0.0010
17	FABRICATED METALS	0.0181	0.0421	0.0211	0.0044	0.0054
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0018	0.0028	0.0018	0.0026	0.0046
19	MACHINE TOOLS AND SHOPS	0.0096	0.0031	0.0019	0.0006	0.0007
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0016	0.0017	0.0014	0.0017	0.0021
21	ELECTRICAL MACHINERY	0.0031	0.0020	0.0006	0.0013	0.0012
22	AEROSPACE	1.0009	0.0033	0.0036	0.0042	0.0022
23	OTHER TRANSPORTATION EQUIPMENT	0.0014	1.0083	0.0014	0.0015	0.0024
24	OTHER MANUFACTURING	0.0019	0.0009	1.0089	0.0019	0.0022
25	MISC. CONST., TRADE, SERVICE	0.3177	0.3731	0.4388	1.6606	0.8709
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.5047	0.4975	0.5566	0.7807	1.4453
	TOTAL LOCAL PURCHASES	1.9798	2.1576	2.2205	2.6460	2.5789

TABLE 6. INCOME MULTIPLIERS, WASHINGTON, 1963

(IN PERCENT)

	INDUSTRY	LOCAL PRIVATE INCOME CHANGES PER DOLLAR DELIVERY TO FINAL DEMAND: DIRECT	INDIRECT	INDUCED	TOTAL	MULTIPLIERS: SIMPLE	TOTAL
1	LIVESTOCK AND PRODUCTS	0.248	0.141	0.173	0.562	1.569	2.268
2	OTHER AGRICULTURAL PRODUCTS	0.353	0.120	0.210	0.682	1.339	1.936
3	FORESTRY AND FISHERY PRODUCTS	0.345	0.171	0.230	0.745	1.496	2.162
4	MINING	0.423	0.065	0.217	0.704	1.153	1.666
5	FOOD AND KINDRED PRODUCTS	0.207	0.163	0.165	0.535	1.786	2.581
6	TEXTILE MILL PRODUCTS	0.205	0.033	0.106	0.344	1.162	1.679
7	APPAREL	0.246	0.035	0.125	0.406	1.140	1.648
8	LUMBER AND WOOD PRODUCTS	0.220	0.283	0.224	0.727	2.287	3.306
9	FURNITURE AND FIXTURES	0.261	0.150	0.183	0.595	1.575	2.277
10	PAPER AND ALLIED PRODUCTS	0.298	0.121	0.187	0.606	1.408	2.034
11	PRINTING AND PUBLISHING	0.253	0.154	0.181	0.588	1.608	2.324
12	CHEMICALS	0.287	0.112	0.178	0.577	1.389	2.008
13	PETROLEUM REFINING	0.158	0.031	0.084	0.273	1.197	1.730
14	STONE, CLAY AND GLASS	0.343	0.222	0.251	0.816	1.646	2.379
15	IRON AND STEEL	0.295	0.110	0.180	0.585	1.372	1.983
16	NONFEROUS METALS	0.254	0.036	0.129	0.420	1.143	1.651
17	FABRICATED METALS	0.252	0.064	0.141	0.458	1.255	1.814
18	NONELECTRICAL MOTIVE EQUIPMENT	0.286	0.054	0.151	0.491	1.188	1.717
19	MACHINE TOOLS AND SHOPS	0.372	0.095	0.208	0.674	1.254	1.813
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.311	0.071	0.170	0.552	1.227	1.773
21	ELECTRICAL MACHINERY	0.330	0.061	0.174	0.565	1.183	1.710
22	AEROSPACE	0.324	0.025	0.155	0.505	1.077	1.557
23	OTHER TRANSPORTATION EQUIPMENT	0.257	0.087	0.153	0.497	1.337	1.933
24	OTHER MANUFACTURING	0.306	0.080	0.171	0.557	1.260	1.822
25	MISC. CONST., TRADE, SERVICE	0.440	0.101	0.241	0.781	1.229	1.776
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.000	0.000	1.445	1.445	0.000	0.000

PART IV: "EXPORTS ONLY" METHOD

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	21.1	17.0	7.6	0.0	155.7	0.1	0.0
2 OTHER AGRICULTURAL PRODUCTS	27.7	5.8	15.6	0.0	37.9	0.5	0.0
3 FORESTRY AND FISHERY PRODUCTS	4.4	15.5	0.9	0.0	4.7	0.0	0.5
4 MINING	0.0	0.3	0.0	0.6	0.1	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	15.5	0.0	0.6	0.0	104.3	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.0	0.1	0.0	0.0	0.3	1.4
7 APPAREL	0.0	0.1	0.0	0.0	0.2	0.0	0.9
8 LUMBER AND WOOD PRODUCTS	0.0	1.8	0.0	0.0	1.7	0.0	0.0
9 FURNITURE AND FIXTURES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	0.1	0.0	0.5	0.2	11.4	0.1	0.3
11 PRINTING AND PUBLISHING	0.0	0.1	0.0	0.0	1.5	0.0	0.0
12 CHEMICALS	0.4	15.2	0.1	0.7	5.8	1.0	0.5
13 PETROLEUM REFINING	0.3	10.8	0.4	0.7	3.3	0.0	0.0
14 STONE, CLAY AND GLASS	0.0	0.4	0.0	1.9	9.9	0.0	0.0
15 IRON AND STEEL	0.0	0.0	0.0	0.3	-0.0	0.0	0.0
16 NONFERROUS METALS	0.0	0.0	0.0	0.0	0.1	0.0	0.0
17 FABRICATED METALS	0.2	0.4	0.2	0.0	11.4	0.0	0.0
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.7	0.0	0.5	0.0	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.0	0.0	0.0	0.0	0.1	0.0	0.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 ELECTRICAL MACHINERY	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.1	0.4	0.3	0.1	0.0	0.0	0.0
24 OTHER MANUFACTURING	0.0	0.1	0.0	0.0	0.2	0.0	0.1
25 MISC. CONST., TRADE, SERVICE	17.6	65.8	6.3	5.4	109.4	0.9	3.7
TOTAL LOCAL PURCHASES	87.6	134.5	32.4	10.4	457.8	3.0	7.4
VALUE ADDED	82.8	212.8	52.1	27.1	294.6	3.2	21.6
IMPORTS	65.0	75.6	33.8	15.9	360.7	6.1	31.2
TOTAL PURCHASES	235.4	422.9	118.3	53.4	1113.0	12.3	60.2

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	9.9	0.0	0.0	0.0	0.1	0.0	0.0
3 FORESTRY AND FISHERY PRODUCTS	82.9	0.0	0.0	0.0	0.3	0.0	0.0
4 MINING	0.0	0.0	1.2	0.0	2.1	21.6	1.5
5 FOOD AND KINDRED PRODUCTS	0.0	0.1	2.6	0.0	2.1	0.1	0.1
6 TEXTILE MILL PRODUCTS	0.0	0.2	0.3	0.0	0.0	0.0	0.0
7 APPAREL	0.1	0.0	0.2	0.0	0.1	0.0	0.0
8 LUMBER AND WOOD PRODUCTS	256.7	4.2	39.0	0.0	0.8	0.0	0.6
9 FURNITURE AND FIXTURES	0.4	0.2	0.0	0.0	0.0	0.0	0.0
10 PAPER AND ALLIED PRODUCTS	5.3	0.5	84.3	11.3	2.8	0.7	2.4
11 PRINTING AND PUBLISHING	2.4	0.0	4.5	10.7	0.5	0.0	0.2
12 CHEMICALS	12.8	0.6	20.1	1.3	54.6	6.4	3.7
13 PETROLEUM REFINING	5.5	0.1	5.0	0.1	10.4	12.1	0.9
14 STONE, CLAY AND GLASS	4.3	0.8	2.9	0.0	1.4	0.5	14.4
15 IRON AND STEEL	0.1	0.4	0.0	0.0	1.2	0.0	0.1
16 NONFERROUS METALS	0.2	0.1	0.1	0.0	0.6	0.0	0.0
17 FABRICATED METALS	3.6	1.0	2.9	0.1	1.5	1.7	0.7
18 NONELECTRICAL MOTIVE EQUIPMENT	0.1	0.0	0.0	0.0	0.0	0.0	0.0
19 MACHINE TOOLS AND SHOPS	0.1	0.0	0.2	0.0	0.1	0.0	0.1
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.3	0.0	0.3	0.0	0.3	0.0	0.0
21 ELECTRICAL MACHINERY	0.1	0.0	0.1	0.0	0.0	0.0	0.0
22 AEROSPACE	0.0	0.0	0.0	0.3	0.0	0.0	0.0
23 OTHER TRANSPORTATION EQUIPMENT	0.4	0.0	0.0	0.0	0.0	0.0	0.0
24 OTHER MANUFACTURING	0.4	0.1	0.5	0.1	0.1	0.0	0.1
25 MISC. CONST., TRADE, SERVICE	91.4	3.7	63.2	14.0	29.8	22.6	15.5
TOTAL LOCAL PURCHASES	477.0	11.9	227.3	38.0	109.1	65.8	40.3
VALUE ADDED	296.6	17.3	254.3	60.6	124.5	53.4	65.1
IMPORTS	142.0	10.9	207.5	24.3	75.7	146.4	25.8
TOTAL PURCHASES	915.6	40.1	689.1	122.8	309.3	265.5	131.2

PART IV: "EXPORTS ONLY" METHOD

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963 (CONTINUED)
(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 MINING	0.9	5.4	0.0	0.0	0.0	0.0	0.0
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 TEXTILE MILL PRODUCTS	0.0	0.1	0.0	0.0	0.0	0.0	0.0
7 APPAREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 LUMBER AND WOOD PRODUCTS	0.1	0.4	0.6	0.1	0.0	0.3	0.1
9 FURNITURE AND FIXTURES	0.0	0.0	0.1	0.0	0.0	0.0	0.1
10 PAPER AND ALLIED PRODUCTS	0.1	0.7	0.7	0.0	0.0	0.1	0.3
11 PRINTING AND PUBLISHING	0.1	0.3	0.1	0.0	0.0	0.0	0.0
12 CHEMICALS	0.6	6.8	1.0	0.2	0.0	0.2	0.6
13 PETROLEUM REFINING	0.3	1.1	0.5	0.1	0.2	0.2	0.1
14 STONE, CLAY AND GLASS	1.0	1.8	1.2	0.3	0.5	0.3	0.6
15 IRON AND STEEL	3.5	1.2	9.7	1.9	0.6	1.4	0.6
16 NONFERROUS METALS	0.2	19.3	1.5	0.1	0.3	0.4	0.4
17 FABRICATED METALS	0.6	3.1	3.5	0.9	0.4	1.1	0.7
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0	0.0	0.2	1.2	0.1	0.2	0.1
19 MACHINE TOOLS AND SHOPS	0.3	1.2	0.6	0.4	0.7	0.4	0.1
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.2	0.3	0.4	0.1	0.8	0.1
21 ELECTRICAL MACHINERY	0.0	0.5	0.2	0.1	0.0	0.3	0.6
22 AEROSPACE	0.0	0.1	0.4	0.1	0.2	0.6	0.7
23 OTHER TRANSPORTATION EQUIPMENT	0.1	0.4	0.8	0.5	0.3	0.2	0.1
24 OTHER MANUFACTURING	0.0	0.1	0.1	0.1	0.0	0.1	0.1
25 MISC. CONST., TRADE, SERVICE	7.4	31.2	10.7	3.9	2.3	5.0	3.6
TOTAL LOCAL PURCHASES	15.3	74.0	32.3	10.4	5.7	11.8	8.9
VALUE ADDED	29.1	135.4	61.1	23.1	17.3	29.8	23.7
IMPORTS	24.0	208.6	61.2	23.2	9.6	25.1	17.9
TOTAL PURCHASES	68.3	418.0	154.6	56.6	32.6	66.7	50.5

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	1.1
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	2.6
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	2.8
4 MINING	0.0	0.0	0.0	7.2
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	0.0	8.5
6 TEXTILE MILL PRODUCTS	0.1	0.1	0.1	0.4
7 APPAREL	0.1	0.1	0.0	0.8
8 LUMBER AND WOOD PRODUCTS	2.0	5.6	0.5	46.8
9 FURNITURE AND FIXTURES	0.3	0.5	0.0	1.1
10 PAPER AND ALLIED PRODUCTS	0.7	0.4	1.0	15.4
11 PRINTING AND PUBLISHING	0.7	0.1	0.1	43.9
12 CHEMICALS	2.7	3.5	2.0	43.3
13 PETROLEUM REFINING	1.9	0.8	0.1	46.7
14 STONE, CLAY AND GLASS	4.3	3.8	0.3	62.1
15 IRON AND STEEL	9.4	8.3	0.2	7.9
16 NONFERROUS METALS	5.4	0.8	0.2	3.0
17 FABRICATED METALS	13.2	7.8	0.4	36.0
18 NONELECTRICAL MOTIVE EQUIPMENT	0.5	2.2	0.0	2.1
19 MACHINE TOOLS AND SHOPS	9.8	0.9	0.0	0.7
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	1.7	0.5	0.0	1.6
21 ELECTRICAL MACHINERY	4.2	1.0	0.1	3.8
22 AEROSPACE	379.0	1.5	0.2	29.7
23 OTHER TRANSPORTATION EQUIPMENT	4.2	20.5	0.1	9.2
24 OTHER MANUFACTURING	1.6	0.3	0.3	2.7
25 MISC. CONST., TRADE, SERVICE	47.2	22.2	4.3	877.1
TOTAL LOCAL PURCHASES	489.2	80.9	10.0	1256.5
VALUE ADDED	483.7	113.2	19.7	3529.3
IMPORTS	237.2	115.1	15.9	816.0
TOTAL PURCHASES	1210.1	309.2	45.7	5601.9

PART IV: "EXPORTS ONLY" METHOD

TABLE 1. SIMULATED INTERINDUSTRY FLOW OF GOODS AND SERVICES IN WASHINGTON, 1963 (CONTINUED)

(MILLIONS OF DOLLARS)

SELLING INDUSTRY	TOTAL LOCAL SALES	LOCAL PRIVATE USE	FINAL DEMAND: STATE AND LOCAL GOVERNMENT	FINAL DEMAND: FEDERAL GOVERNMENT	FINAL DEMAND: EXPORTS	TOTAL FINAL DEMAND	TOTAL SALES
1 LIVESTOCK AND PRODUCTS	202.5	28.2	0.2	0.0	4.5	32.9	235.4
2 OTHER AGRICULTURAL PRODUCTS	100.3	24.9	0.3	24.7	272.7	322.6	422.9
3 FORESTRY AND FISHERY PRODUCTS	111.9	6.1	-1.7	-2.9	4.8	6.4	118.3
4 MINING	41.0	0.5	0.6	1.3	10.0	12.4	53.4
5 FOOD AND KINDRED PRODUCTS	134.2	510.7	4.0	5.7	458.5	978.8	1113.0
6 TEXTILE MILL PRODUCTS	3.1	2.0	0.0	0.1	7.1	9.2	12.3
7 APPAREL	2.6	20.4	0.2	0.4	36.6	57.6	60.2
8 LUMBER AND WOOD PRODUCTS	361.4	3.8	0.0	-0.1	550.4	554.2	915.6
9 FURNITURE AND FIXTURES	2.6	11.2	0.8	0.3	25.2	37.5	40.1
10 PAPER AND ALLIED PRODUCTS	139.3	12.2	0.1	1.8	535.7	549.8	689.1
11 PRINTING AND PUBLISHING	65.3	42.9	3.3	2.9	8.4	57.5	122.8
12 CHEMICALS	184.0	54.6	8.5	20.7	41.5	125.3	309.3
13 PETROLEUM REFINING	101.6	88.3	7.2	15.6	52.8	163.9	265.5
14 STONE, CLAY AND GLASS	112.9	6.5	0.1	0.5	11.1	18.3	131.2
15 IRON AND STEEL	46.9	0.1	0.0	0.9	20.4	21.4	68.3
16 NONFERROUS METALS	32.9	0.2	0.0	1.7	383.2	385.1	418.0
17 FABRICATED METALS	91.2	10.6	0.7	2.7	49.5	63.4	154.6
18 NONELECTRICAL MOTIVE EQUIPMENT	8.0	14.8	0.5	3.0	30.3	48.6	56.6
19 MACHINE TOOLS AND SHOPS	15.9	5.7	0.3	1.9	8.8	16.7	32.6
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	6.8	10.1	0.4	1.4	48.0	59.9	66.7
21 ELECTRICAL MACHINERY	11.3	10.8	0.2	5.0	23.1	39.2	50.5
22 AEROSPACE	412.8	9.8	0.1	369.0	418.4	797.3	1210.1
23 OTHER TRANSPORTATION EQUIPMENT	37.8	142.5	6.7	16.6	105.5	271.4	309.2
24 OTHER MANUFACTURING	7.0	8.9	0.5	1.5	27.8	38.7	45.7
25 MISC. CONST., TRADE, SERVICE	1464.3	3049.9	362.7	341.9	383.1	4137.6	5601.9
TOTAL LOCAL PURCHASES		4075.9	395.9	816.6	3517.4	8805.8	12503.3
VALUE ADDED	6031.1	174.8	601.9	775.9	0.0	1552.6	7583.7
IMPORTS	2774.7	2801.4	202.2	271.7	0.0	3275.3	6050.0
TOTAL PURCHASES	12503.3	7052.2	1200.0	1864.1	3517.4	13633.7	26137.0

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	8.9522	4.0174	6.4126	0.0000	13.9900	0.6141	0.0000
2 OTHER AGRICULTURAL PRODUCTS	11.7759	1.3804	13.1497	0.0000	3.4085	4.3178	0.0215
3 FORESTRY AND FISHERY PRODUCTS	1.8777	3.6591	0.7541	0.0000	0.4189	0.0000	0.7715
4 MINING	0.0041	0.0644	0.0002	1.0411	0.0129	0.0219	0.0008
5 FOOD AND KINDRED PRODUCTS	6.6021	0.0069	0.4924	0.0000	9.3754	0.1527	0.0007
6 TEXTILE MILL PRODUCTS	0.0017	0.0105	0.0581	0.0034	0.0009	2.5395	2.3417
7 APPAREL	0.0029	0.0134	0.0000	0.0000	0.0194	0.0452	1.4416
8 LUMBER AND WOOD PRODUCTS	0.0072	0.4262	0.0033	0.0360	0.1555	0.0105	0.0005
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060	0.0183
10 PAPER AND ALLIED PRODUCTS	0.0286	0.0058	0.3896	0.3277	1.0237	0.5377	0.5201
11 PRINTING AND PUBLISHING	0.0135	0.0215	0.0022	0.0201	0.1332	0.0499	0.0688
12 CHEMICALS	0.1813	3.5981	0.0437	1.2359	0.5186	8.1121	0.7955
13 PETROLEUM REFINING	0.1253	2.5600	0.3439	1.2642	0.2946	0.1530	0.0330
14 STONE, CLAY AND GLASS	0.0164	0.1010	0.0000	3.6354	0.8920	0.2091	0.0012
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.5037	0.0006	0.0088	0.0029
16 NONFERROUS METALS	0.0006	0.0006	0.0000	0.0352	0.0088	0.0037	0.0001
17 FABRICATED METALS	0.0805	0.0836	0.1585	0.0534	1.0206	0.0369	0.0511
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0039	0.1703	0.0006	0.8862	0.0000	0.0010	0.0000
19 MACHINE TOOLS AND SHOPS	0.0021	0.0032	0.0000	0.0118	0.0063	0.0063	0.0015
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.0361	0.0004	0.0608	0.0012
21 ELECTRICAL MACHINERY	0.0026	0.0076	0.0002	0.0232	0.0042	0.0024	0.0002
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0049	0.0077
23 OTHER TRANSPORTATION EQUIPMENT	0.0499	0.0852	0.2285	0.1404	0.0000	0.0025	0.0002
24 OTHER MANUFACTURING	0.0046	0.0341	0.0170	0.0619	0.0138	0.0404	0.1523
25 MISC. CONST., TRADE, SERVICE	7.4755	15.5518	5.3241	10.1554	9.8308	7.3494	6.1190
TOTAL LOCAL PURCHASES	37.2086	31.8012	27.3787	19.4710	41.1293	24.2866	12.3514
VALUE ADDED	35.1764	50.3299	44.0591	50.8415	26.4671	25.9335	35.8174
IMPORTS	27.6149	17.8688	28.5622	29.6876	32.4036	49.7799	51.8312
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART IV: "EXPORTS ONLY" METHOD

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	1.0817	0.0000	0.0000	0.0000	0.0463	0.0000	0.0216
3 FORESTRY AND FISHERY PRODUCTS	9.0519	0.0000	0.0000	0.0000	0.1077	0.0000	0.0000
4 MINING	0.0039	0.0074	0.1705	0.0000	0.6718	8.1397	1.1436
5 FOOD AND KINDRED PRODUCTS	0.0006	0.3510	0.3777	0.0000	0.6904	0.0344	0.0429
6 TEXTILE MILL PRODUCTS	0.0014	0.4098	0.0474	0.0107	0.0020	0.0000	0.0135
7 APPAREL	0.0128	0.0154	0.0247	0.0000	0.0235	0.0022	0.0044
8 LUMBER AND WOOD PRODUCTS	28.0362	10.3986	5.6588	0.0042	0.2540	0.0136	0.4326
9 FURNITURE AND FIXTURES	0.0446	0.5004	0.0025	0.0068	0.0000	0.0000	0.0028
10 PAPER AND ALLIED PRODUCTS	0.5799	1.1464	12.2304	9.2006	0.9164	0.2605	1.8001
11 PRINTING AND PUBLISHING	0.2593	0.0370	0.6465	8.7028	0.1714	0.0027	0.1368
12 CHEMICALS	1.4000	1.4559	2.9125	1.0776	17.6476	2.4055	2.8558
13 PETROLEUM REFINING	0.5954	0.1382	0.7326	0.0587	3.3469	4.5637	0.7020
14 STONE, CLAY AND GLASS	0.4671	2.1147	0.4194	0.0013	0.4640	0.1913	10.9550
15 IRON AND STEEL	0.0107	1.0491	0.0032	0.0000	0.4004	0.0018	0.0916
16 NONFERROUS METALS	0.0181	0.1542	0.0196	0.0189	0.2094	0.0017	0.0306
17 FABRICATED METALS	0.3895	2.3882	0.4162	0.0704	0.4764	0.6372	0.4956
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0098	0.0146	0.0000	0.0006	0.0092	0.0000	0.0026
19 MACHINE TOOLS AND SHOPS	0.0129	0.0434	0.0303	0.0042	0.0279	0.0045	0.0476
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0321	0.0688	0.0401	0.0371	0.1117	0.0008	0.0143
21 ELECTRICAL MACHINERY	0.0104	0.0239	0.0126	0.0079	0.0103	0.0037	0.0373
22 AEROSPACE	0.0041	0.0400	0.0038	0.2320	0.0099	0.0000	0.0159
23 OTHER TRANSPORTATION EQUIPMENT	0.0476	0.0451	0.0000	0.0102	0.0003	0.0007	0.0097
24 OTHER MANUFACTURING	0.0398	0.2160	0.0734	0.0424	0.0480	0.0044	0.0646
25 MISC. CONST., TRADE, SERVICE	9.9875	9.1600	9.1689	11.4217	9.6318	8.4989	11.7971
TOTAL LOCAL PURCHASES	52.0973	29.7781	32.9913	30.9083	35.2780	24.7674	30.7181
VALUE ADDED	32.3892	43.0469	36.8973	49.3135	40.2532	20.1030	49.6022
IMPORTS	15.5135	27.1750	30.1114	19.7782	24.4688	55.1296	19.6797
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0175	0.0000	0.0000	0.0000
4 MINING	1.3034	1.2890	0.0066	0.0083	0.0024	0.0068	0.0126
5 FOOD AND KINDRED PRODUCTS	0.0197	0.0035	0.0003	0.0024	0.0000	0.0154	0.0000
6 TEXTILE MILL PRODUCTS	0.0003	0.0145	0.0038	0.0043	0.0000	0.0069	0.0041
7 APPAREL	0.0078	0.0062	0.0090	0.0065	0.0110	0.0085	0.0075
8 LUMBER AND WOOD PRODUCTS	0.1152	0.0981	0.3950	0.1403	0.0317	0.4761	0.1897
9 FURNITURE AND FIXTURES	0.0014	0.0001	0.0360	0.0058	0.0001	0.0052	0.1223
10 PAPER AND ALLIED PRODUCTS	0.1697	0.1775	0.4268	0.0843	0.0069	0.2125	0.6429
11 PRINTING AND PUBLISHING	0.1012	0.0612	0.0846	0.0327	0.0110	0.0682	0.0712
12 CHEMICALS	0.9001	1.6357	0.6591	0.2742	0.0655	0.3274	1.0904
13 PETROLEUM REFINING	0.4994	0.2718	0.3195	0.2565	0.5809	0.3121	0.1383
14 STONE, CLAY AND GLASS	1.4357	0.4374	0.7810	0.4746	1.3924	0.5020	1.2169
15 IRON AND STEEL	5.1216	0.2893	6.2606	3.3080	1.9226	2.0611	1.1173
16 NONFERROUS METALS	0.2581	4.6258	0.9944	0.1381	1.0286	0.6350	0.7879
17 FABRICATED METALS	0.9513	0.7312	2.2914	1.5703	1.2071	1.5770	1.3876
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0480	0.0029	0.1511	2.0755	0.1759	0.3087	0.1481
19 MACHINE TOOLS AND SHOPS	0.3895	0.2891	0.3928	0.7371	2.2020	0.6354	0.2659
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0513	0.0405	0.2131	0.7395	0.2634	1.1530	0.1134
21 ELECTRICAL MACHINERY	0.0399	0.1223	0.1328	0.2358	0.1070	0.5161	1.2554
22 AEROSPACE	0.0147	0.0220	0.2279	0.2378	0.4901	0.8614	1.4298
23 OTHER TRANSPORTATION EQUIPMENT	0.1419	0.1048	0.4965	0.8914	0.8794	0.3665	0.2057
24 OTHER MANUFACTURING	0.0207	0.0178	0.0656	0.1546	0.0299	0.0900	0.1344
25 MISC. CONST., TRADE, SERVICE	10.7694	7.4623	6.9457	6.9313	7.0797	7.5006	7.2161
TOTAL LOCAL PURCHASES	22.3603	17.7031	20.8937	18.3268	17.4877	17.6458	17.5574
VALUE ADDED	42.5391	32.3841	39.4940	40.7429	53.0738	44.7102	46.9758
IMPORTS	35.1006	49.9128	39.6123	40.9303	29.4385	37.6440	35.4669
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART IV: "EXPORTS ONLY" METHOD

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0197
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0380	0.0459
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0288	0.0496
4 MINING	0.0028	0.0114	0.0128	0.1284
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0618	0.1523
6 TEXTILE MILL PRODUCTS	0.0046	0.0168	0.2507	0.0067
7 APPAREL	0.0078	0.0237	0.0281	0.0141
8 LUMBER AND WOOD PRODUCTS	0.1649	1.8230	1.1635	0.8361
9 FURNITURE AND FIXTURES	0.0287	0.1462	0.0178	0.0188
10 PAPER AND ALLIED PRODUCTS	0.0592	0.1322	2.1197	0.2750
11 PRINTING AND PUBLISHING	0.0553	0.0343	0.2899	0.7840
12 CHEMICALS	0.2265	1.1309	4.3083	0.7722
13 PETROLEUM REFINING	0.1564	0.2515	0.1591	0.8345
14 STONE, CLAY AND GLASS	0.3594	1.2135	0.7506	1.1082
15 IRON AND STEEL	0.7796	2.6987	0.4198	0.1411
16 NONFERROUS METALS	0.4433	0.2599	0.4727	0.0538
17 FABRICATED METALS	1.0921	2.5309	0.8801	0.6430
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0453	0.7232	0.0059	0.0371
19 MACHINE TOOLS AND SHOPS	0.8109	0.2899	0.1056	0.0133
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.1409	0.1778	0.0488	0.0292
21 ELECTRICAL MACHINERY	0.3460	0.3230	0.1271	0.0682
22 AEROSPACE	31.3178	0.4752	0.5212	0.5297
23 OTHER TRANSPORTATION EQUIPMENT	0.3499	6.6365	0.1547	0.1649
24 OTHER MANUFACTURING	0.1342	0.0881	0.6450	0.0478
25 MISC. CONST., TRADE, SERVICE	3.9020	7.1928	9.3700	15.6573
TOTAL LOCAL PURCHASES	40.4276	26.1793	21.9798	22.4306
VALUE ADDED	39.9699	36.6068	43.1347	63.0022
IMPORTS	19.6025	37.2143	34.8854	14.5672
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	1.1190	0.0488	0.0797	0.0001	0.1751	0.0097	0.0009
2 OTHER AGRICULTURAL PRODUCTS	0.1402	1.0255	0.1453	0.0002	0.0611	0.0467	0.0026
3 FORESTRY AND FISHERY PRODUCTS	0.0270	0.0397	1.0148	0.0004	0.0109	0.0024	0.0082
4 MINING	0.0011	0.0039	0.0011	1.0127	0.0013	0.0018	0.0004
5 FOOD AND KINDRED PRODUCTS	0.0820	0.0046	0.0116	0.0004	1.1167	0.0035	0.0004
6 TEXTILE MILL PRODUCTS	0.0001	0.0002	0.0006	0.0001	0.0001	1.0261	0.0244
7 APPAREL	0.0001	0.0002	0.0000	0.0000	0.0003	0.0005	1.0147
8 LUMBER AND WOOD PRODUCTS	0.0030	0.0090	0.0027	0.0030	0.0061	0.0029	0.0016
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0002
10 PAPER AND ALLIED PRODUCTS	0.0023	0.0020	0.0053	0.0056	0.0146	0.0082	0.0069
11 PRINTING AND PUBLISHING	0.0016	0.0022	0.0010	0.0016	0.0033	0.0018	0.0016
12 CHEMICALS	0.0110	0.0484	0.0089	0.0189	0.0132	0.1051	0.0136
13 PETROLEUM REFINING	0.0073	0.0314	0.0090	0.0157	0.0076	0.0078	0.0018
14 STONE, CLAY AND GLASS	0.0031	0.0044	0.0018	0.0434	0.0138	0.0047	0.0013
15 IRON AND STEEL	0.0005	0.0009	0.0005	0.0063	0.0013	0.0009	0.0003
16 NONFERROUS METALS	0.0002	0.0003	0.0001	0.0006	0.0004	0.0004	0.0001
17 FABRICATED METALS	0.0031	0.0030	0.0029	0.0022	0.0133	0.0019	0.0013
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0004	0.0019	0.0003	0.0092	0.0002	0.0002	0.0000
19 MACHINE TOOLS AND SHOPS	0.0001	0.0001	0.0001	0.0003	0.0002	0.0001	0.0001
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0001	0.0002	0.0001	0.0005	0.0001	0.0008	0.0001
21 ELECTRICAL MACHINERY	0.0002	0.0003	0.0001	0.0004	0.0002	0.0001	0.0001
22 AEROSPACE	0.0011	0.0017	0.0008	0.0011	0.0014	0.0010	0.0008
23 OTHER TRANSPORTATION EQUIPMENT	0.0011	0.0015	0.0029	0.0019	0.0006	0.0003	0.0002
24 OTHER MANUFACTURING	0.0002	0.0005	0.0003	0.0008	0.0003	0.0006	0.0016
25 MISC. CONST., TRADE, SERVICE	0.1403	0.2087	0.1034	0.1353	0.1663	0.1152	0.0804
TOTAL LOCAL PURCHASES	1.5450	1.4394	1.3935	1.2607	1.6083	1.3427	1.1633

PART IV: "EXPORTS ONLY" METHOD

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963(CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

	SELLING INDUSTRY	8	9	10	11	12	13	14
1	LIVESTOCK AND PRODUCTS	0.0109	0.0019	0.0016	0.0003	0.0018	0.0002	0.0004
2	OTHER AGRICULTURAL PRODUCTS	0.0339	0.0041	0.0027	0.0004	0.0016	0.0002	0.0007
3	FORESTRY AND FISHERY PRODUCTS	0.1287	0.0139	0.0087	0.0012	0.0022	0.0003	0.0012
4	MINING	0.0017	0.0014	0.0036	0.0009	0.0124	0.0870	0.0146
5	FOOD AND KINDRED PRODUCTS	0.0021	0.0046	0.0055	0.0010	0.0098	0.0009	0.0013
6	TEXTILE MILL PRODUCTS	0.0001	0.0043	0.0006	0.0002	0.0001	0.0000	0.0002
7	APPAREL	0.0002	0.0002	0.0003	0.0001	0.0003	0.0001	0.0001
8	LUMBER AND WOOD PRODUCTS	1.3933	0.1487	0.0919	0.0113	0.0074	0.0023	0.0110
9	FURNITURE AND FIXTURES	0.0007	1.0051	0.0001	0.0001	0.0000	0.0000	0.0001
10	PAPER AND ALLIED PRODUCTS	0.0116	0.0160	1.1423	0.1160	0.0142	0.0046	0.0247
11	PRINTING AND PUBLISHING	0.0058	0.0023	0.0097	1.0977	0.0038	0.0012	0.0035
12	CHEMICALS	0.0285	0.0246	0.0445	0.0206	1.2186	0.0338	0.0426
13	PETROLEUM REFINING	0.0130	0.0052	0.0125	0.0039	0.0446	1.0514	0.0118
14	STONE, CLAY AND GLASS	0.0102	0.0273	0.0083	0.0029	0.0093	0.0077	1.1263
15	IRON AND STEEL	0.0012	0.0134	0.0010	0.0006	0.0060	0.0014	0.0022
16	NONFERROUS METALS	0.0006	0.0022	0.0005	0.0004	0.0029	0.0003	0.0007
17	FABRICATED METALS	0.0075	0.0268	0.0067	0.0027	0.0076	0.0080	0.0074
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0003	0.0003	0.0001	0.0001	0.0003	0.0009	0.0003
19	MACHINE TOOLS AND SHOPS	0.0003	0.0007	0.0005	0.0002	0.0005	0.0001	0.0007
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0006	0.0009	0.0006	0.0006	0.0015	0.0001	0.0003
21	ELECTRICAL MACHINERY	0.0003	0.0004	0.0003	0.0003	0.0003	0.0002	0.0006
22	AEROSPACE	0.0016	0.0019	0.0013	0.0050	0.0014	0.0010	0.0017
23	OTHER TRANSPORTATION EQUIPMENT	0.0015	0.0010	0.0004	0.0005	0.0004	0.0004	0.0005
24	OTHER MANUFACTURING	0.0007	0.0024	0.0010	0.0007	0.0007	0.0002	0.0009
25	MISC. CONST., TRADE, SERVICE	0.1902	0.1436	0.1473	0.1670	0.1532	0.1236	0.1715
	TOTAL LOCAL PURCHASES	1.8455	1.4534	1.4919	1.4345	1.5009	1.3259	1.4249

	SELLING INDUSTRY	15	16	17	18	19	20	21
1	LIVESTOCK AND PRODUCTS	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001
2	OTHER AGRICULTURAL PRODUCTS	0.0002	0.0002	0.0003	0.0002	0.0001	0.0003	0.0002
3	FORESTRY AND FISHERY PRODUCTS	0.0005	0.0004	0.0008	0.0006	0.0003	0.0009	0.0005
4	MINING	0.0151	0.0145	0.0019	0.0012	0.0015	0.0012	0.0011
5	FOOD AND KINDRED PRODUCTS	0.0006	0.0004	0.0003	0.0003	0.0002	0.0004	0.0004
6	TEXTILE MILL PRODUCTS	0.0000	0.0002	0.0001	0.0001	0.0000	0.0001	0.0001
7	APPAREL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
8	LUMBER AND WOOD PRODUCTS	0.0040	0.0031	0.0078	0.0039	0.0022	0.0086	0.0051
9	FURNITURE AND FIXTURES	0.0001	0.0000	0.0004	0.0001	0.0000	0.0001	0.0013
10	PAPER AND ALLIED PRODUCTS	0.0035	0.0032	0.0062	0.0020	0.0011	0.0035	0.0087
11	PRINTING AND PUBLISHING	0.0025	0.0017	0.0020	0.0013	0.0011	0.0018	0.0018
12	CHEMICALS	0.0145	0.0228	0.0113	0.0058	0.0035	0.0065	0.0161
13	PETROLEUM REFINING	0.0078	0.0051	0.0054	0.0043	0.0076	0.0049	0.0034
14	STONE, CLAY AND GLASS	0.0198	0.0074	0.0119	0.0079	0.0181	0.0080	0.0159
15	IRON AND STEEL	1.0553	0.0043	0.0684	0.0377	0.0224	0.0239	0.0137
16	NONFERROUS METALS	0.0032	1.0488	0.0111	0.0021	0.0114	0.0073	0.0088
17	FABRICATED METALS	0.0117	0.0089	1.0254	0.0182	0.0142	0.0180	0.0159
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0008	0.0002	0.0017	1.0214	0.0020	0.0033	0.0017
19	MACHINE TOOLS AND SHOPS	0.0043	0.0032	0.0045	0.0081	1.0229	0.0070	0.0031
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0007	0.0005	0.0023	0.0078	0.0029	1.0118	0.0013
21	ELECTRICAL MACHINERY	0.0006	0.0014	0.0016	0.0027	0.0013	0.0055	1.0129
22	AEROSPACE	0.0015	0.0012	0.0044	0.0047	0.0083	0.0138	0.0220
23	OTHER TRANSPORTATION EQUIPMENT	0.0020	0.0015	0.0058	0.0102	0.0100	0.0045	0.0027
24	OTHER MANUFACTURING	0.0003	0.0003	0.0008	0.0017	0.0004	0.0010	0.0015
25	MISC. CONST., TRADE, SERVICE	0.1452	0.1017	0.1016	0.0967	0.0972	0.1020	0.0991
	TOTAL LOCAL PURCHASES	1.2945	1.2312	1.2763	1.2389	1.2289	1.2346	1.2376

PART IV: "EXPORTS ONLY" METHOD

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)			
SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0001	0.0003	0.0005	0.0008
2 OTHER AGRICULTURAL PRODUCTS	0.0002	0.0008	0.0012	0.0012
3 FORESTRY AND FISHERY PRODUCTS	0.0005	0.0028	0.0023	0.0020
4 MINING	0.0009	0.0015	0.0015	0.0028
5 FOOD AND KINDRED PRODUCTS	0.0002	0.0004	0.0015	0.0022
6 TEXTILE MILL PRODUCTS	0.0001	0.0002	0.0026	0.0001
7 APPAREL	0.0001	0.0003	0.0003	0.0002
8 LUMBER AND WOOD PRODUCTS	0.0049	0.0294	0.0203	0.0147
9 FURNITURE AND FIXTURES	0.0005	0.0016	0.0002	0.0002
10 PAPER AND ALLIED PRODUCTS	0.0019	0.0032	0.0263	0.0056
11 PRINTING AND PUBLISHING	0.0016	0.0016	0.0047	0.0104
12 CHEMICALS	0.0060	0.0181	0.0565	0.0130
13 PETROLEUM REFINING	0.0037	0.0052	0.0054	0.0113
14 STONE, CLAY AND GLASS	0.0078	0.0174	0.0111	0.0155
15 IRON AND STEEL	0.0139	0.0333	0.0058	0.0026
16 NONFERROUS METALS	0.0073	0.0036	0.0054	0.0009
17 FABRICATED METALS	0.0176	0.0296	0.0108	0.0085
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0008	0.0081	0.0002	0.0005
19 MACHINE TOOLS AND SHOPS	0.0123	0.0036	0.0013	0.0003
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0022	0.0022	0.0007	0.0004
21 ELECTRICAL MACHINERY	0.0053	0.0037	0.0015	0.0009
22 AEROSPACE	1.4569	0.0086	0.0088	0.0094
23 OTHER TRANSPORTATION EQUIPMENT	0.0059	1.0717	0.0020	0.0022
24 OTHER MANUFACTURING	0.0021	0.0011	1.0066	0.0006
25 MISC. CONST., TRADE, SERVICE	0.0772	0.1103	0.1303	1.1972
TOTAL LOCAL PURCHASES	1.6297	1.3584	1.3080	1.3036

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963

(IN PERCENT)

	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	8.9522	4.0174	6.4126	0.0000	13.9900	0.6141	0.0000
2 OTHER AGRICULTURAL PRODUCTS	11.7759	1.3804	13.1497	0.0000	3.4085	4.3178	0.0215
3 FORESTRY AND FISHERY PRODUCTS	1.8777	3.6591	0.7541	0.0000	0.4189	0.0000	0.7715
4 MINING	0.0041	0.0644	0.0002	1.0411	0.0129	0.0219	0.0008
5 FOOD AND KINDRED PRODUCTS	6.6021	0.0069	0.4924	0.0000	9.3754	0.1527	0.0007
6 TEXTILE MILL PRODUCTS	0.0017	0.0105	0.0581	0.0034	0.0009	2.5395	2.3417
7 APPAREL	0.0029	0.0134	0.0000	0.0000	0.0194	0.0452	1.4416
8 LUMBER AND WOOD PRODUCTS	0.0072	0.4262	0.0033	0.0360	0.1555	0.0105	0.0005
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060	0.0183
10 PAPER AND ALLIED PRODUCTS	0.0286	0.0058	0.3896	0.3277	1.0237	0.5377	0.5201
11 PRINTING AND PUBLISHING	0.0135	0.0215	0.0022	0.0201	0.1332	0.0499	0.0688
12 CHEMICALS	0.1813	3.5981	0.0437	1.2359	0.5186	8.1121	0.7955
13 PETROLEUM REFINING	0.1253	2.5600	0.3439	1.2642	0.2946	0.1530	0.0330
14 STONE, CLAY AND GLASS	0.0164	0.1010	0.0000	3.6354	0.8920	0.2091	0.0012
15 IRON AND STEEL	0.0000	0.0000	0.0000	0.5037	0.0006	0.0088	0.0029
16 NONFERROUS METALS	0.0006	0.0006	0.0000	0.0352	0.0088	0.0037	0.0001
17 FABRICATED METALS	0.0805	0.0836	0.1585	0.0534	1.0206	0.0369	0.0511
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0039	0.1703	0.0006	0.8862	0.0000	0.0010	0.0000
19 MACHINE TOOLS AND SHOPS	0.0021	0.0032	0.0000	0.0118	0.0063	0.0063	0.0015
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	0.0000	0.0000	0.0361	0.0004	0.0608	0.0012
21 ELECTRICAL MACHINERY	0.0026	0.0076	0.0002	0.0232	0.0042	0.0024	0.0002
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0049	0.0077
23 OTHER TRANSPORTATION EQUIPMENT	0.0499	0.0852	0.2285	0.1404	0.0000	0.0025	0.0002
24 OTHER MANUFACTURING	0.0046	0.0341	0.0170	0.0619	0.0138	0.0404	0.1523
25 MISC. CONST., TRADE, SERVICE	7.4755	15.5518	5.3241	10.1554	9.8308	7.3494	6.1190
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	32.7112	46.8027	40.9713	47.2784	24.6123	24.1160	33.3073
TOTAL LOCAL PURCHASES	69.9198	78.6039	68.3500	66.7493	65.7415	48.4026	45.6586
OTHER LOCAL PAYMENTS	2.4653	3.5273	3.0878	3.5631	1.8549	1.8175	2.5102
IMPORTS	27.6149	17.8688	28.5622	29.6876	32.4036	49.7799	51.8312
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART IV: "EXPORTS ONLY" METHOD

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963(CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	1.0817	0.0000	0.0000	0.0000	0.0463	0.0000	0.0216
3 FORESTRY AND FISHERY PRODUCTS	9.0519	0.0000	0.0000	0.0000	0.1077	0.0000	0.0000
4 MINING	0.0039	0.0074	0.1705	0.0000	0.6718	8.1497	1.1436
5 FOOD AND KINDRED PRODUCTS	0.0006	0.3510	0.3777	0.0000	0.6904	0.0344	0.0429
6 TEXTILE MILL PRODUCTS	0.0014	0.4098	0.0474	0.0107	0.0020	0.0000	0.0135
7 APPAREL	0.0128	0.0154	0.0247	0.0000	0.0235	0.0022	0.0044
8 LUMBER AND WOOD PRODUCTS	28.0362	10.3986	5.6588	0.0042	0.2540	0.0136	0.4326
9 FURNITURE AND FIXTURES	0.0446	0.5004	0.0025	0.0068	0.0000	0.0000	0.0028
10 PAPER AND ALLIED PRODUCTS	0.5799	1.1464	12.2304	9.2006	0.9164	0.2605	1.8001
11 PRINTING AND PUBLISHING	0.2593	0.0370	0.6465	8.7028	0.1714	0.0027	0.1368
12 CHEMICALS	1.4000	1.4559	2.9125	1.0776	17.6476	2.4055	2.8558
13 PETROLEUM REFINING	0.5954	0.1382	0.7326	0.0587	3.3469	4.5637	0.7020
14 STONE, CLAY AND GLASS	0.4671	2.1147	0.4194	0.0013	0.4640	0.1913	10.9550
15 IRON AND STEEL	0.0107	1.0491	0.0032	0.0000	0.4004	0.0018	0.0916
16 NONFERROUS METALS	0.0181	0.1542	0.0196	0.0189	0.2094	0.0017	0.0306
17 FABRICATED METALS	0.3895	2.3882	0.4162	0.0704	0.4764	0.6372	0.4956
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0098	0.0146	0.0000	0.0006	0.0092	0.0000	0.0026
19 MACHINE TOOLS AND SHOPS	0.0129	0.0434	0.0303	0.0042	0.0279	0.0045	0.0476
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0321	0.0688	0.0401	0.0371	0.1117	0.0008	0.0143
21 ELECTRICAL MACHINERY	0.0104	0.0239	0.0126	0.0079	0.0103	0.0037	0.0373
22 AEROSPACE	0.0041	0.0400	0.0038	0.2320	0.0099	0.0000	0.0159
23 OTHER TRANSPORTATION EQUIPMENT	0.0476	0.0451	0.0000	0.0102	0.0003	0.0007	0.0097
24 OTHER MANUFACTURING	0.0398	0.2160	0.0734	0.0424	0.0480	0.0044	0.0646
25 MISC. CONST., TRADE, SERVICE	9.9875	9.1600	9.1689	11.4217	9.6318	8.4989	11.7971
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	30.1193	40.0301	34.3115	45.8575	37.4321	18.6941	46.1260
TOTAL LOCAL PURCHASES	82.2166	69.8082	67.3027	76.7658	72.7102	43.4615	76.8441
OTHER LOCAL PAYMENTS	2.2699	3.0168	2.5859	3.4560	2.8210	1.4089	3.4763
IMPORTS	15.5135	27.1750	30.1114	19.7782	24.4688	55.1296	19.4797
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0175	0.0000	0.0000	0.0000
4 MINING	1.3034	1.2890	0.0066	0.0083	0.0024	0.0068	0.0126
5 FOOD AND KINDRED PRODUCTS	0.0197	0.0035	0.0003	0.0024	0.0000	0.0154	0.0000
6 TEXTILE MILL PRODUCTS	0.0003	0.0145	0.0038	0.0043	0.0000	0.0069	0.0041
7 APPAREL	0.0078	0.0062	0.0090	0.0065	0.0110	0.0085	0.0075
8 LUMBER AND WOOD PRODUCTS	0.1152	0.0981	0.3950	0.1403	0.0317	0.4761	0.1897
9 FURNITURE AND FIXTURES	0.0014	0.0001	0.0360	0.0058	0.0001	0.0052	0.1223
10 PAPER AND ALLIED PRODUCTS	0.1697	0.1775	0.4268	0.0843	0.0069	0.2125	0.6429
11 PRINTING AND PUBLISHING	0.1012	0.0612	0.0846	0.0327	0.0110	0.0682	0.0712
12 CHEMICALS	0.9001	1.6357	0.6591	0.2742	0.0655	0.3274	1.0904
13 PETROLEUM REFINING	0.4994	0.2718	0.3195	0.2565	0.5809	0.3121	0.1383
14 STONE, CLAY AND GLASS	1.4357	0.4374	0.7810	0.4746	1.3924	0.5020	1.2169
15 IRON AND STEEL	5.1216	0.2693	6.2606	3.3080	1.9226	2.0611	1.1173
16 NONFERROUS METALS	0.2581	4.6258	0.9944	0.1381	1.0286	0.6350	0.7879
17 FABRICATED METALS	0.9513	0.7312	2.2914	1.5703	1.2071	1.5770	1.3876
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0480	0.0029	0.1511	2.0755	0.1759	0.3087	0.1481
19 MACHINE TOOLS AND SHOPS	0.3895	0.2891	0.3928	0.7371	2.2020	0.6354	0.2659
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0513	0.0405	0.2131	0.7395	0.2634	1.1530	0.1134
21 ELECTRICAL MACHINERY	0.0399	0.1223	0.1328	0.2358	0.1070	0.5161	1.2554
22 AEROSPACE	0.0147	0.0220	0.2279	0.2378	0.4901	0.8614	1.4298
23 OTHER TRANSPORTATION EQUIPMENT	0.1419	0.1048	0.4965	0.8914	0.8794	0.3665	0.2057
24 OTHER MANUFACTURING	0.0207	0.0178	0.0656	0.1546	0.0299	0.0900	0.1344
25 MISC. CONST., TRADE, SERVICE	10.7694	7.4623	6.9457	6.9313	7.0797	7.5006	7.2161
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	39.5578	30.1145	36.7262	37.8875	49.3542	41.5768	43.6836
TOTAL LOCAL PURCHASES	61.9182	47.8176	57.6199	56.2143	66.8419	59.2226	61.2409
OTHER LOCAL PAYMENTS	2.9813	2.2696	2.7678	2.8554	3.7196	3.1334	3.2922
IMPORTS	35.1006	49.9128	39.6123	40.9303	29.4385	37.6440	35.4669
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

PART IV: "EXPORTS ONLY" METHOD

TABLE 4. DIRECT REQUIREMENTS, INCLUDING LOCAL PRIVATE INPUTS (HOUSEHOLDS), PER DOLLAR OF GROSS OUTPUT, WASHINGTON, 1963 (CONTINUED)

(IN PERCENT)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	22	23	24	25	26
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0197	0.4002
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0380	0.0459	0.3535
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0288	0.0496	0.0868
4 MINING	0.0028	0.0114	0.0128	0.1284	0.0068
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0618	0.1523	7.2416
6 TEXTILE MILL PRODUCTS	0.0046	0.0168	0.2507	0.0067	0.0282
7 APPAREL	0.0078	0.0237	0.0281	0.0141	0.2893
8 LUMBER AND WOOD PRODUCTS	0.1649	1.8230	1.1635	0.8361	0.0545
9 FURNITURE AND FIXTURES	0.0287	0.1462	0.0178	0.0188	0.1584
10 PAPER AND ALLIED PRODUCTS	0.0592	0.1322	2.1197	0.2750	0.1727
11 PRINTING AND PUBLISHING	0.0553	0.0343	0.2899	0.7840	0.6085
12 CHEMICALS	0.2265	1.1309	4.3083	0.7722	0.7749
13 PETROLEUM REFINING	0.1564	0.2515	0.1591	0.8345	1.2518
14 STONE, CLAY AND GLASS	0.3594	1.2135	0.7506	1.1082	0.0927
15 IRON AND STEEL	0.7796	2.6987	0.4198	0.1411	0.0014
16 NONFERROUS METALS	0.4433	0.2599	0.4727	0.0538	0.0034
17 FABRICATED METALS	1.0921	2.5309	0.8801	0.6430	0.1497
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0453	0.7232	0.0059	0.0371	0.2105
19 MACHINE TOOLS AND SHOPS	0.8109	0.2899	0.1056	0.0133	0.0809
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.1409	0.1778	0.0488	0.0292	0.1430
21 ELECTRICAL MACHINERY	0.3460	0.3230	0.1271	0.0682	0.1534
22 AEROSPACE	31.3178	0.4752	0.5212	0.5297	0.1389
23 OTHER TRANSPORTATION EQUIPMENT	0.3499	6.6365	0.1547	0.1649	2.0211
24 OTHER MANUFACTURING	0.1342	0.0881	0.6450	0.0478	0.1265
25 MISC. CONST., TRADE, SERVICE	3.9020	7.1928	9.3700	15.6573	43.2478
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	37.1687	34.0409	40.1117	58.5868	0.0000
TOTAL LOCAL PURCHASES	77.5963	60.2202	62.0916	81.0174	57.7966
OTHER LOCAL PAYMENTS	2.8012	2.5655	3.0230	4.4154	2.4793
IMPORTS	19.6025	37.2143	34.8854	14.5672	39.7240
TOTAL PURCHASES	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	1.1354	0.0685	0.0969	0.0177	0.1895	0.0212	0.0129
2 OTHER AGRICULTURAL PRODUCTS	0.1487	1.0358	0.1544	0.0094	0.0687	0.0527	0.0088
3 FORESTRY AND FISHERY PRODUCTS	0.0298	0.0431	1.0177	0.0034	0.0134	0.0043	0.0102
4 MINING	0.0035	0.0069	0.0036	1.0154	0.0035	0.0036	0.0022
5 FOOD AND KINDRED PRODUCTS	0.1576	0.0957	0.0911	0.0819	1.1833	0.0568	0.0557
6 TEXTILE MILL PRODUCTS	0.0005	0.0006	0.0010	0.0005	0.0004	1.0264	0.0247
7 APPAREL	0.0029	0.0036	0.0030	0.0030	0.0027	0.0025	1.0167
8 LUMBER AND WOOD PRODUCTS	0.0112	0.0187	0.0112	0.0117	0.0133	0.0086	0.0076
9 FURNITURE AND FIXTURES	0.0016	0.0020	0.0017	0.0018	0.0014	0.0012	0.0014
10 PAPER AND ALLIED PRODUCTS	0.0063	0.0092	0.0116	0.0121	0.0199	0.0124	0.0112
11 PRINTING AND PUBLISHING	0.0122	0.0150	0.0122	0.0130	0.0126	0.0093	0.0093
12 CHEMICALS	0.0271	0.0679	0.0258	0.0363	0.0274	0.1165	0.0254
13 PETROLEUM REFINING	0.0251	0.0529	0.0277	0.0349	0.0233	0.0203	0.0147
14 STONE, CLAY AND GLASS	0.0118	0.0149	0.0110	0.0528	0.0214	0.0108	0.0076
15 IRON AND STEEL	0.0026	0.0034	0.0027	0.0085	0.0031	0.0024	0.0019
16 NONFERROUS METALS	0.0007	0.0010	0.0007	0.0012	0.0009	0.0008	0.0005
17 FABRICATED METALS	0.0096	0.0110	0.0098	0.0093	0.0191	0.0066	0.0061
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0027	0.0048	0.0028	0.0118	0.0023	0.0018	0.0018
19 MACHINE TOOLS AND SHOPS	0.0011	0.0014	0.0011	0.0014	0.0011	0.0009	0.0008
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0017	0.0021	0.0017	0.0022	0.0015	0.0019	0.0012
21 ELECTRICAL MACHINERY	0.0021	0.0025	0.0021	0.0024	0.0019	0.0015	0.0015
22 AEROSPACE	0.0071	0.0089	0.0071	0.0076	0.0066	0.0052	0.0051
23 OTHER TRANSPORTATION EQUIPMENT	0.0220	0.0267	0.0248	0.0244	0.0190	0.0150	0.0155
24 OTHER MANUFACTURING	0.0017	0.0023	0.0019	0.0024	0.0016	0.0016	0.0027
25 MISC. CONST., TRADE, SERVICE	0.6356	0.8057	0.6239	0.6692	0.6026	0.4641	0.4424
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.9187	1.1071	0.9654	0.9902	0.8092	0.6471	0.6714
TOTAL LOCAL PURCHASES	3.1815	3.4116	3.1131	3.0246	3.0497	2.4955	2.3593

PART IV: "EXPORTS ONLY" METHOD

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

	SELLING INDUSTRY	8	9	10	11	12	13	14
1	LIVESTOCK AND PRODUCTS	0.0295	0.0192	0.0176	0.0196	0.0189	0.0100	0.0199
2	OTHER AGRICULTURAL PRODUCTS	0.0437	0.0132	0.0111	0.0106	0.0106	0.0053	0.0110
3	FORESTRY AND FISHERY PRODUCTS	0.1318	0.0168	0.0114	0.0044	0.0051	0.0020	0.0045
4	MINING	0.0045	0.0040	0.0060	0.0038	0.0150	0.0885	0.0175
5	FOOD AND KINDRED PRODUCTS	0.0882	0.0847	0.0796	0.0905	0.0893	0.0862	0.0916
6	TEXTILE MILL PRODUCTS	0.0006	0.0047	0.0010	0.0007	0.0005	0.0003	0.0007
7	APPAREL	0.0034	0.0032	0.0031	0.0034	0.0033	0.0017	0.0034
8	LUMBER AND WOOD PRODUCTS	1.4025	0.1573	0.0998	0.0209	0.0159	0.0071	0.0206
9	FURNITURE AND FIXTURES	0.0025	1.0068	0.0017	0.0020	0.0017	0.0010	0.0020
10	PAPER AND ALLIED PRODUCTS	0.0185	0.0224	1.1482	0.1231	0.0205	0.0082	0.0319
11	PRINTING AND PUBLISHING	0.0179	0.0136	0.0202	1.1103	0.0150	0.0076	0.0162
12	CHEMICALS	0.0468	0.0417	0.0603	0.0397	1.2356	0.0435	0.0618
13	PETROLEUM REFINING	0.0332	0.0240	0.0299	0.0249	0.0633	1.0621	0.0330
14	STONE, CLAY AND GLASS	0.0201	0.0365	0.0168	0.0132	0.0184	0.0129	1.1367
15	IRON AND STEEL	0.0036	0.0156	0.0030	0.0031	0.0083	0.0027	0.0047
16	NONFERROUS METALS	0.0012	0.0028	0.0011	0.0011	0.0035	0.0006	0.0014
17	FABRICATED METALS	0.0150	0.0338	0.0131	0.0105	0.0146	0.0120	0.0152
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0030	0.0028	0.0025	0.0029	0.0028	0.0023	0.0031
19	MACHINE TOOLS AND SHOPS	0.0015	0.0018	0.0015	0.0014	0.0016	0.0008	0.0019
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0024	0.0026	0.0022	0.0024	0.0031	0.0011	0.0022
21	ELECTRICAL MACHINERY	0.0025	0.0024	0.0022	0.0025	0.0023	0.0013	0.0028
22	AEROSPACE	0.0084	0.0082	0.0072	0.0121	0.0077	0.0046	0.0088
23	OTHER TRANSPORTATION EQUIPMENT	0.0253	0.0232	0.0209	0.0252	0.0224	0.0130	0.0255
24	OTHER MANUFACTURING	0.0024	0.0040	0.0025	0.0024	0.0023	0.0011	0.0027
25	MISC. CONST., TRADE, SERVICE	0.7542	0.6684	0.6329	0.7533	0.6739	0.4206	0.7629
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	1.0460	0.9732	0.9006	1.0873	0.9658	0.5509	1.0966
	TOTAL LOCAL PURCHASES	3.7088	3.1870	3.0962	3.3714	3.2212	2.3072	3.3784

	SELLING INDUSTRY	15	16	17	18	19	20	21
1	LIVESTOCK AND PRODUCTS	0.0160	0.0121	0.0146	0.0145	0.0177	0.0156	0.0162
2	OTHER AGRICULTURAL PRODUCTS	0.0085	0.0064	0.0079	0.0077	0.0094	0.0084	0.0086
3	FORESTRY AND FISHERY PRODUCTS	0.0032	0.0024	0.0032	0.0030	0.0033	0.0035	0.0033
4	MINING	0.0175	0.0163	0.0041	0.0034	0.0041	0.0035	0.0035
5	FOOD AND KINDRED PRODUCTS	0.0738	0.0556	0.0672	0.0668	0.0819	0.0718	0.0746
6	TEXTILE MILL PRODUCTS	0.0004	0.0005	0.0004	0.0004	0.0004	0.0005	0.0005
7	APPAREL	0.0028	0.0021	0.0026	0.0026	0.0032	0.0028	0.0029
8	LUMBER AND WOOD PRODUCTS	0.0118	0.0090	0.0150	0.0110	0.0110	0.0162	0.0131
9	FURNITURE AND FIXTURES	0.0016	0.0012	0.0018	0.0015	0.0018	0.0016	0.0029
10	PAPER AND ALLIED PRODUCTS	0.0093	0.0076	0.0115	0.0072	0.0076	0.0092	0.0146
11	PRINTING AND PUBLISHING	0.0128	0.0094	0.0114	0.0107	0.0126	0.0118	0.0123
12	CHEMICALS	0.0301	0.0346	0.0256	0.0200	0.0209	0.0217	0.0320
13	PETROLEUM REFINING	0.0250	0.0180	0.0211	0.0199	0.0268	0.0217	0.0208
14	STONE, CLAY AND GLASS	0.0282	0.0138	0.0196	0.0156	0.0275	0.0162	0.0245
15	IRON AND STEEL	1.0574	0.0058	0.0702	0.0396	0.0247	0.0259	0.0157
16	NONFERROUS METALS	0.0037	1.0492	0.0116	0.0026	0.0120	0.0078	0.0094
17	FABRICATED METALS	0.0180	0.0137	1.0313	0.0239	0.0213	0.0242	0.0224
18	NONELECTRICAL MOTIVE EQUIPMENT	0.0031	0.0020	0.0038	1.0235	0.0046	0.0056	0.0040
19	MACHINE TOOLS AND SHOPS	0.0053	0.0040	0.0054	0.0090	1.0240	0.0079	0.0042
20	NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0022	0.0017	0.0038	0.0092	0.0046	1.0133	0.0029
21	ELECTRICAL MACHINERY	0.0024	0.0028	0.0032	0.0043	0.0034	0.0073	1.0148
22	AEROSPACE	0.0073	0.0056	0.0098	0.0099	0.0147	0.0194	0.0279
23	OTHER TRANSPORTATION EQUIPMENT	0.0222	0.0167	0.0243	0.0286	0.0326	0.0242	0.0232
24	OTHER MANUFACTURING	0.0018	0.0014	0.0021	0.0030	0.0020	0.0024	0.0030
25	MISC. CONST., TRADE, SERVICE	0.6245	0.4634	0.5395	0.5323	0.6322	0.5692	0.5858
26	LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.8889	0.6707	0.8120	0.8079	0.9921	0.8664	0.9026
	TOTAL LOCAL PURCHASES	2.8779	2.4259	2.7228	2.6781	2.9962	2.7780	2.8454

PART IV: "EXPORTS ONLY" METHOD

TABLE 5. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, WASHINGTON, 1963 (CONTINUED)

(EACH ENTRY APPROXIMATES THE TOTAL OUTPUT REQUIRED FROM THE SECTOR AT THE BEGINNING OF EACH ROW FOR EVERY DOLLAR OF DELIVERY TO FINAL DEMAND BY THE SECTOR NUMBERED AT THE HEAD OF EACH COLUMN)

	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)				
SELLING INDUSTRY	22	23	24	25	26
1 LIVESTOCK AND PRODUCTS	0.0184	0.0148	0.0164	0.0225	0.0293
2 OTHER AGRICULTURAL PRODUCTS	0.0098	0.0084	0.0096	0.0126	0.0154
3 FORESTRY AND FISHERY PRODUCTS	0.0036	0.0053	0.0050	0.0057	0.0050
4 MINING	0.0036	0.0037	0.0038	0.0061	0.0044
5 FOOD AND KINDRED PRODUCTS	0.0848	0.0676	0.0750	0.1026	0.1356
6 TEXTILE MILL PRODUCTS	0.0005	0.0006	0.0030	0.0006	0.0007
7 APPAREL	0.0033	0.0028	0.0031	0.0039	0.0050
8 LUMBER AND WOOD PRODUCTS	0.0139	0.0366	0.0282	0.0255	0.0146
9 FURNITURE AND FIXTURES	0.0022	0.0030	0.0018	0.0024	0.0029
10 PAPER AND ALLIED PRODUCTS	0.0086	0.0086	0.0322	0.0135	0.0108
11 PRINTING AND PUBLISHING	0.0135	0.0110	0.0150	0.0246	0.0191
12 CHEMICALS	0.0241	0.0324	0.0721	0.0344	0.0289
13 PETROLEUM REFINING	0.0235	0.0210	0.0227	0.0349	0.0319
14 STONE, CLAY AND GLASS	0.0175	0.0251	0.0195	0.0270	0.0156
15 IRON AND STEEL	0.0162	0.0351	0.0079	0.0054	0.0038
16 NONFERROUS METALS	0.0079	0.0041	0.0060	0.0016	0.0010
17 FABRICATED METALS	0.0249	0.0354	0.0172	0.0172	0.0118
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0035	0.0102	0.0025	0.0037	0.0043
19 MACHINE TOOLS AND SHOPS	0.0135	0.0045	0.0023	0.0017	0.0018
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0040	0.0036	0.0022	0.0025	0.0029
21 ELECTRICAL MACHINERY	0.0074	0.0054	0.0033	0.0034	0.0034
22 AEROSPACE	1.4636	0.0139	0.0146	0.0173	0.0107
23 OTHER TRANSPORTATION EQUIPMENT	0.0293	1.0902	0.0224	0.0300	0.0375
24 OTHER MANUFACTURING	0.0037	0.0024	1.0081	0.0026	0.0027
25 MISC. CONST., TRADE, SERVICE	0.6313	0.5502	0.6117	1.8549	0.8885
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	1.0277	0.8160	0.8928	1.2197	1.6478
TOTAL LOCAL PURCHASES	3.4605	2.8120	2.8983	3.4762	2.9353

TABLE 6. INCOME MULTIPLIERS, WASHINGTON, 1963

(IN PERCENT)

	LOCAL PRIVATE INCOME CHANGES PER DOLLAR DELIVERY TO FINAL DEMAND				MULTIPLIERS	
INDUSTRY	DIRECT	INDIRECT	INDUCED	TOTAL	SIMPLE	TOTAL
1 LIVESTOCK AND PRODUCTS	0.327	0.230	0.361	0.919	1.704	2.809
2 OTHER AGRICULTURAL PRODUCTS	0.468	0.204	0.435	1.107	1.436	2.366
3 FORESTRY AND FISHERY PRODUCTS	0.410	0.176	0.380	0.965	1.430	2.356
4 MINING	0.473	0.128	0.389	0.990	1.271	2.094
5 FOOD AND KINDRED PRODUCTS	0.246	0.245	0.318	0.809	1.995	3.288
6 TEXTILE MILL PRODUCTS	0.241	0.152	0.254	0.647	1.629	2.683
7 APPAREL	0.333	0.074	0.264	0.671	1.223	2.016
8 LUMBER AND WOOD PRODUCTS	0.301	0.334	0.411	1.046	2.108	3.473
9 FURNITURE AND FIXTURES	0.400	0.190	0.383	0.973	1.475	2.431
10 PAPER AND ALLIED PRODUCTS	0.343	0.203	0.354	0.901	1.593	2.625
11 PRINTING AND PUBLISHING	0.459	0.201	0.427	1.087	1.439	2.371
12 CHEMICALS	0.374	0.212	0.380	0.966	1.566	2.580
13 PETROLEUM REFINING	0.187	0.147	0.217	0.551	1.788	2.947
14 STONE, CLAY AND GLASS	0.461	0.204	0.431	1.097	1.443	2.377
15 IRON AND STEEL	0.396	0.144	0.349	0.889	1.364	2.247
16 NONFERROUS METALS	0.301	0.106	0.264	0.671	1.352	2.227
17 FABRICATED METALS	0.367	0.126	0.319	0.812	1.342	2.211
18 NONELECTRICAL MOTIVE EQUIPMENT	0.379	0.111	0.318	0.808	1.294	2.132
19 MACHINE TOOLS AND SHOPS	0.494	0.109	0.390	0.992	1.220	2.010
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.416	0.110	0.341	0.866	1.265	2.084
21 ELECTRICAL MACHINERY	0.437	0.111	0.355	0.903	1.254	2.066
22 AEROSPACE	0.372	0.252	0.404	1.028	1.678	2.765
23 OTHER TRANSPORTATION EQUIPMENT	0.340	0.155	0.321	0.816	1.455	2.397
24 OTHER MANUFACTURING	0.401	0.141	0.351	0.893	1.351	2.226
25 MISC. CONST., TRADE, SERVICE	0.586	0.154	0.479	1.220	1.263	2.082
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.000	0.000	1.648	1.648	0.000	0.000

PART V: APPENDIX TABLES

TABLE A. INTERINDUSTRY TRANSACTIONS IN THE UNITED STATES IN 1958, AGGREGATED FOR SIMULATION OF A MODEL OF WASHINGTON, 1963

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	3820.4	1568.8	317.3	0.0	14998.6	137.5	0.0
2 OTHER AGRICULTURAL PRODUCTS	6071.8	651.3	786.2	0.0	4415.2	1168.0	7.3
3 FORESTRY AND FISHERY PRODUCTS	453.2	808.1	21.1	0.0	254.0	0.0	122.4
4 MINING	6.7	95.4	0.0	1232.5	52.4	18.6	0.9
5 FOOD AND KINDRED PRODUCTS	2993.7	2.8	25.9	0.0	10680.1	36.3	0.2
6 TEXTILE MILL PRODUCTS	5.9	34.3	24.0	8.8	8.4	4742.7	5477.0
7 APPAREL	8.5	35.7	0.0	0.0	141.9	68.9	2751.7
8 LUMBER AND WOOD PRODUCTS	1.9	102.8	0.1	6.9	103.0	1.5	0.1
9 FURNITURE AND FIXTURES	0.0	0.0	0.0	0.0	0.0	4.6	17.4
10 PAPER AND ALLIED PRODUCTS	13.8	2.6	21.8	115.5	1241.2	136.1	164.9
11 PRINTING AND PUBLISHING	4.9	7.2	0.1	5.4	122.9	9.6	16.6
12 CHEMICALS	60.5	1098.7	1.7	301.2	434.8	1420.2	174.4
13 PETROLEUM REFINING	48.6	907.4	15.4	357.7	286.7	31.1	8.4
14 STONE, CLAY AND GLASS	4.5	25.4	0.0	728.2	614.6	30.1	0.2
15 IRON AND STEEL	0.0	0.0	0.0	382.2	1.5	4.8	2.0
16 NONFERROUS METALS	1.0	0.8	0.0	41.7	35.9	3.1	0.1
17 FABRICATED METALS	56.6	53.8	12.9	27.4	1803.0	13.6	23.6
18 NONELECTRICAL MOTIVE EQUIPMENT	5.1	201.4	0.1	836.8	0.0	0.7	0.0
19 MACHINE TOOLS AND SHOPS	1.9	2.8	0.0	8.1	14.9	3.1	0.9
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0	0.0	0.0	59.9	2.1	72.5	1.8
21 ELECTRICAL MACHINERY	8.5	22.7	0.1	55.1	34.8	4.2	0.4
22 AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.5	1.0
23 OTHER TRANSPORTATION EQUIPMENT	24.5	38.3	13.0	50.3	0.0	0.7	0.1
24 OTHER MANUFACTURING	22.1	150.8	9.5	218.4	167.5	102.5	483.5
25 MISC. CONST., TRADE, SERVICE	2740.3	5216.4	226.3	2718.8	9053.1	1413.4	1473.8
TOTAL LOCAL PURCHASES	16354.3	11027.7	1475.6	7155.1	44446.5	9424.2	10728.8
VALUE ADDED	9043.6	11853.5	1310.7	9516.8	17057.2	3487.2	6039.5
IMPORTS	231.7	571.0	185.6	2046.7	2863.5	534.7	71.7
TOTAL PURCHASES	25629.6	23452.1	2971.9	18718.6	64387.2	13446.0	16840.0

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.3	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	194.7	0.0	0.0	0.0	23.3	0.0	4.3
3 FORESTRY AND FISHERY PRODUCTS	762.8	0.0	0.0	0.0	25.3	0.0	0.0
4 MINING	2.2	2.3	154.2	0.0	1061.9	9364.3	718.9
5 FOOD AND KINDRED PRODUCTS	0.1	30.1	95.5	0.0	305.3	11.1	7.6
6 TEXTILE MILL PRODUCTS	1.7	275.8	94.2	19.0	7.0	0.0	18.7
7 APPAREL	12.9	8.5	40.1	0.0	66.6	4.5	5.0
8 LUMBER AND WOOD PRODUCTS	2579.5	518.0	831.8	0.6	65.3	2.5	44.2
9 FURNITURE AND FIXTURES	22.6	137.4	2.0	4.9	0.1	0.0	1.6
10 PAPER AND ALLIED PRODUCTS	97.7	104.6	3292.4	2218.2	431.3	89.2	336.9
11 PRINTING AND PUBLISHING	33.3	2.6	132.5	1597.3	61.4	0.7	19.5
12 CHEMICALS	163.1	91.8	542.2	179.6	5743.2	569.7	369.6
13 PETROLEUM REFINING	80.5	10.1	158.3	11.4	1264.3	1254.6	105.5
14 STONE, CLAY AND GLASS	44.7	109.6	64.2	0.2	124.1	37.2	1165.2
15 IRON AND STEEL	3.9	206.0	1.9	0.0	405.7	1.3	36.9
16 NONFERROUS METALS	10.3	47.4	17.7	15.3	331.8	1.9	19.3
17 FABRICATED METALS	95.6	317.4	163.2	24.7	326.7	318.0	135.1
18 NONELECTRICAL MOTIVE EQUIPMENT	4.4	3.6	0.0	0.4	11.6	0.0	1.3
19 MACHINE TOOLS AND SHOPS	4.2	7.7	15.9	2.0	25.6	3.0	17.3
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	25.5	29.5	50.8	42.1	247.4	1.3	12.6
21 ELECTRICAL MACHINERY	11.9	14.7	23.0	12.9	32.8	8.6	47.2
22 AEROSPACE	0.3	1.5	0.4	23.2	1.9	0.0	1.2
23 OTHER TRANSPORTATION EQUIPMENT	8.2	4.2	0.0	2.5	0.1	0.2	1.8
24 OTHER MANUFACTURING	67.2	197.2	197.9	102.2	226.2	15.2	121.0
25 MISC. CONST., TRADE, SERVICE	1278.2	634.7	1874.8	2091.6	3443.1	2211.1	1677.1
TOTAL LOCAL PURCHASES	5505.5	2754.8	7752.9	6348.1	14232.3	13894.7	4867.9
VALUE ADDED	2945.5	2086.0	5275.0	6320.4	10062.9	3656.7	4930.7
IMPORTS	497.1	4.1	1268.3	135.0	698.6	638.5	141.2
TOTAL PURCHASES	8948.1	4844.8	14296.2	12803.5	24993.9	18189.9	9939.8

PART V: APPENDIX TABLES

TABLE A. INTERINDUSTRY TRANSACTIONS IN THE UNITED STATES IN 1958, AGGREGATED FOR SIMULATION OF A MODEL OF WASHINGTON, 1963 (CONTINUED)

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	0.0	1.5	0.0	0.0	0.0
4 MINING	1624.2	838.3	8.6	4.8	0.8	4.8	17.3
5 FOOD AND KINDRED PRODUCTS	6.9	0.6	0.1	0.4	0.0	3.0	0.0
6 TEXTILE MILL PRODUCTS	0.9	20.7	11.0	5.4	0.0	10.5	12.3
7 APPAREL	17.3	7.3	21.2	6.7	6.7	10.5	18.5
8 LUMBER AND WOOD PRODUCTS	23.3	10.4	84.0	13.1	1.7	53.8	42.2
9 FURNITURE AND FIXTURES	1.5	0.1	42.2	3.0	0.0	3.2	150.0
10 PAPER AND ALLIED PRODUCTS	63.0	34.4	166.1	14.5	0.7	44.0	262.0
11 PRINTING AND PUBLISHING	28.6	9.0	25.1	4.3	0.8	10.7	22.1
12 CHEMICALS	230.9	219.0	177.4	32.5	4.6	46.8	307.3
13 PETROLEUM REFINING	148.7	42.2	99.8	35.3	47.0	51.8	45.2
14 STONE, CLAY AND GLASS	302.7	48.1	172.8	46.2	79.7	59.0	281.8
15 IRON AND STEEL	4090.7	120.6	5247.1	1220.8	416.9	918.1	980.2
16 NONFERROUS METALS	322.3	3014.7	1302.9	79.7	348.7	442.2	1080.7
17 FABRICATED METALS	514.2	206.3	1299.8	392.2	177.1	475.4	823.9
18 NONELECTRICAL MOTIVE EQUIPMENT	47.7	1.5	157.5	953.2	47.5	171.1	161.6
19 MACHINE TOOLS AND SHOPS	281.1	108.9	297.5	245.8	431.4	255.7	210.8
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	89.6	36.9	390.6	596.9	124.9	1123.2	217.6
21 ELECTRICAL MACHINERY	99.9	160.0	349.3	273.1	72.8	721.4	3456.1
22 AEROSPACE	2.3	1.8	36.8	16.9	20.4	73.8	241.4
23 OTHER TRANSPORTATION EQUIPMENT	53.6	20.6	196.6	155.4	90.1	77.1	85.3
24 OTHER MANUFACTURING	77.0	34.5	255.5	265.3	30.2	186.3	548.2
25 MISC. CONST., TRADE, SERVICE	3034.8	1097.5	2053.8	902.5	541.6	1178.8	2233.7
TOTAL LOCAL PURCHASES	11061.2	6033.5	12395.7	5269.4	2443.6	5921.4	11198.4
VALUE ADDED	8382.0	3330.6	8175.5	3714.0	2844.4	4933.7	10234.8
IMPORTS	259.5	919.1	103.2	120.4	60.5	133.1	209.3
TOTAL PURCHASES	19702.7	10283.3	20674.4	9103.7	5348.5	10988.2	21642.5

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0	0.0	0.0	131.9
2 OTHER AGRICULTURAL PRODUCTS	0.0	0.0	16.8	372.4
3 FORESTRY AND FISHERY PRODUCTS	0.0	0.0	6.0	188.1
4 MINING	3.1	20.0	17.8	3272.3
5 FOOD AND KINDRED PRODUCTS	0.0	0.0	24.1	1086.0
6 TEXTILE MILL PRODUCTS	11.2	64.6	766.5	373.3
7 APPAREL	15.8	74.6	70.2	642.8
8 LUMBER AND WOOD PRODUCTS	30.0	520.6	263.4	3465.5
9 FURNITURE AND FIXTURES	28.8	230.1	22.2	428.4
10 PAPER AND ALLIED PRODUCTS	19.7	69.1	878.7	2087.1
11 PRINTING AND PUBLISHING	14.0	13.6	91.5	4530.4
12 CHEMICALS	52.2	409.0	1234.9	4052.8
13 PETROLEUM REFINING	41.8	105.6	52.9	5084.3
14 STONE, CLAY AND GLASS	68.1	360.6	176.8	4780.4
15 IRON AND STEEL	559.5	3038.3	374.6	2305.5
16 NONFERROUS METALS	497.3	457.4	659.5	1373.6
17 FABRICATED METALS	530.4	1928.5	531.5	7111.0
18 NONELECTRICAL MOTIVE EQUIPMENT	40.5	1013.2	6.5	754.6
19 MACHINE TOOLS AND SHOPS	525.8	294.9	85.2	196.3
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	221.1	437.7	95.3	1042.3
21 ELECTRICAL MACHINERY	779.2	1141.0	355.9	3495.0
22 AEROSPACE	4324.9	103.0	89.5	1665.6
23 OTHER TRANSPORTATION EQUIPMENT	118.7	3530.7	65.2	1273.7
24 OTHER MANUFACTURING	447.8	461.0	2676.2	3629.4
25 MISC. CONST., TRADE, SERVICE	987.9	2857.1	2950.1	90268.1
TOTAL LOCAL PURCHASES	9318.0	17130.7	11511.3	143610.7
VALUE ADDED	8294.9	10195.6	9521.2	254439.8
IMPORTS	89.8	446.4	981.3	5044.3
TOTAL PURCHASES	17702.6	27772.6	22013.7	403094.7

PART V: APPENDIX TABLES

TABLE A. INTERINDUSTRY TRANSACTIONS IN THE UNITED STATES IN 1958, AGGREGATED FOR SIMULATION OF A MODEL OF WASHINGTON, 1963(CONTINUED)

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	TOTAL LOCAL SALES	LOCAL PRIVATE USE	STATE AND LOCAL GOVERNMENT	FEDERAL GOVERNMENT	EXPORTS	TOTAL FINAL DEMAND	TOTAL SALES
		- - - - - - - FINAL DEMAND - - - - - - -					
1 LIVESTOCK AND PRODUCTS	20974.8	2520.1	10.4	-1.2	34.5	2563.8	23538.7
2 OTHER AGRICULTURAL PRODUCTS	13711.3	2689.4	24.7	1559.0	2670.2	6943.3	20654.6
3 FORESTRY AND FISHERY PRODUCTS	2642.5	309.1	-61.8	-84.6	30.9	193.5	2835.9
4 MINING	18522.4	163.8	159.7	260.8	484.7	1069.0	19591.4
5 FOOD AND KINDRED PRODUCTS	15309.8	48450.5	274.8	315.3	1346.5	50387.1	65696.9
6 TEXTILE MILL PRODUCTS	11994.0	1478.9	12.5	55.7	262.7	1809.7	13803.7
7 APPAREL	4035.7	12402.2	96.3	147.8	161.5	12807.8	16843.5
8 LUMBER AND WOOD PRODUCTS	8766.3	212.0	1.0	-3.6	124.6	334.1	9100.5
9 FURNITURE AND FIXTURES	1100.3	3395.6	180.1	50.0	32.8	3658.5	4758.7
10 PAPER AND ALLIED PRODUCTS	11905.4	1229.6	7.9	109.1	416.1	1762.7	13668.1
11 PRINTING AND PUBLISHING	6764.2	3298.9	184.7	129.8	105.9	3719.2	10483.4
12 CHEMICALS	17918.3	3815.6	430.4	845.5	1426.5	6518.1	24436.4
13 PETROLEUM REFINING	10294.6	7154.6	426.3	739.2	664.2	8984.3	19278.9
14 STONE, CLAY AND GLASS	9324.6	375.0	4.4	18.4	169.9	567.8	9892.5
15 IRON AND STEEL	20318.6	21.4	3.5	114.3	540.4	679.7	20998.2
16 NONFERROUS METALS	10105.3	82.6	0.0	333.7	315.2	731.5	10836.8
17 FABRICATED METALS	17362.4	1552.9	73.5	229.5	553.3	2409.2	19771.6
18 NONELECTRICAL MOTIVE EQUIPMENT	4420.3	4015.3	93.2	474.1	1219.9	5802.5	10222.8
19 MACHINE TOOLS AND SHOPS	3040.7	1120.2	42.8	219.8	357.1	1740.0	4780.7
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	4921.9	4794.8	149.2	380.0	943.3	6267.2	11189.1
21 ELECTRICAL MACHINERY	11180.5	7377.7	113.1	2001.1	897.9	10389.7	21570.2
22 AEROSPACE	6606.3	409.8	3.9	9032.1	593.2	10039.1	16645.4
23 OTHER TRANSPORTATION EQUIPMENT	5811.0	14641.1	502.8	999.9	1253.0	17396.9	23207.9
24 OTHER MANUFACTURING	10692.4	9014.0	365.9	880.2	685.5	10945.5	21638.0
25 MISC. CONST., TRADE, SERVICE	44158.4	233910.1	20263.2	15344.9	5473.0	274991.2	419149.6
TOTAL LOCAL PURCHASES		364435.2	23362.5	34150.9	20762.7	442711.3	834593.4
VALUE ADDED	417652.2	3418.8	23429.0	21206.3	0.0	48054.1	465706.3
IMPORTS	18254.5	10305.9	78.8	3141.2	0.0	13526.0	31780.5
TOTAL PURCHASES	827788.8	378159.9	46870.4	58498.4	20762.7	504291.4	1332080.2

TABLE B. INDUSTRY DEFINITIONS, INTERINDUSTRY MODEL OF WASHINGTON, 1963

INDUSTRY NUMBER AND TITLE	RELATED AREA SURVEY INDUSTRY NUMBERS
1 LIVESTOCK AND PRODUCTS	3
2 OTHER AGRICULTURAL PRODUCTS	1 2 4
3 FORESTRY AND FISHERY PRODUCTS	5 15
4 MINING	14
5 FOOD AND KINDRED PRODUCTS	6 7 8 9 10 11
6 TEXTILE MILL PRODUCTS	12
7 APPAREL	13
8 LUMBER AND WOOD PRODUCTS	16 17 18 19
9 FURNITURE AND FIXTURES	20
10 PAPER AND ALLIED PRODUCTS	21 22 23
11 PRINTING AND PUBLISHING	24
12 CHEMICALS	25 26
13 PETROLEUM REFINING	27
14 STONE, CLAY AND GLASS	28 29
15 IRON AND STEEL	30
16 NONFERROUS METALS	31 32
17 FABRICATED METALS	33 34
18 NONELECTRICAL MOTIVE EQUIPMENT	35
19 MACHINE TOOLS AND SHOPS	36
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	37
21 ELECTRICAL MACHINERY	38
22 AEROSPACE	39
23 OTHER TRANSPORTATION EQUIPMENT	40 41
24 OTHER MANUFACTURING	42
25 MISC. CONST., TRADE, SERVICE	43 44 45 46 47 48 49 50 51 52 53 54
VALUE ADDED & LOCAL PRIVATE USE	
VALUE ADDED & STATE & LOCAL GOVT.	
VALUE ADDED & FEDERAL GOVERNMENT	
VALUE ADDED & EXPORTS	
IMPORTS & LOCAL PRIVATE USE	
IMPORTS & STATE & LOCAL GOVERNMENT	
IMPORTS & FEDERAL GOVERNMENT	
IMPORTS & EXPORTS	

********** COLUMN DEFINITIONS FOR FINAL DEMAND SECTOR **********

LOCAL PRIVATE USE	2 3
STATE AND LOCAL GOVERNMENT	1
FEDERAL GOVERNMENT	4
EXPORTS	5 6

PART V: APPENDIX TABLES

TABLE C. INDUSTRY DEFINITIONS, SIMULATED MODEL OF WASHINGTON, 1963

INDUSTRY NUMBER AND TITLE	RELATED 1958 INPUT-OUTPUT STUDY INDUSTRY NUMBERS
1 LIVESTOCK AND PRODUCTS	1
2 OTHER AGRICULTURAL PRODUCTS	2
3 FORESTRY AND FISHERY PRODUCTS	3 4
4 MINING	5 6 7 8 9 10
5 FOOD AND KINDRED PRODUCTS	14
6 TEXTILE MILL PRODUCTS	16 17
7 APPAREL	18 19
8 LUMBER AND WOOD PRODUCTS	20 21
9 FURNITURE AND FIXTURES	22 23
10 PAPER AND ALLIED PRODUCTS	24 25
11 PRINTING AND PUBLISHING	26
12 CHEMICALS	27 28 29 30
13 PETROLEUM REFINING	31
14 STONE, CLAY AND GLASS	35 36
15 IRON AND STEEL	37
16 NONFERROUS METALS	38
17 FABRICATED METALS	39 40 41 42
18 NONELECTRICAL MOTIVE EQUIPMENT	43 44 45 46
19 MACHINE TOOLS AND SHOPS	47 50
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	48 49 51 52
21 ELECTRICAL MACHINERY	53 54 55 56 57 58
22 AEROSPACE	13 60
23 OTHER TRANSPORTATION EQUIPMENT	59 61
24 OTHER MANUFACTURING	32 33 34 62 63 64
25 MISC. CONST., TRADE, SERVICE	11 12 65 66 67 68 69 70 71 72 73 74 75 76 77
VALUE ADDED & LOCAL PRIVATE USE	81 82 83 85 86 87
VALUE ADDED & STATE & LOCAL GOVT.	79
VALUE ADDED & FEDERAL GOVERNMENT	84
VALUE ADDED & EXPORTS	
IMPORTS & LOCAL PRIVATE USE	
IMPORTS & STATE & LOCAL GOVERNMENT	
IMPORTS & FEDERAL GOVERNMENT	78
IMPORTS & EXPORTS	15 80

********** COLUMN DEFINITIONS FOR FINAL DEMAND SECTOR **********

LOCAL PRIVATE USE	1 2 3
STATE AND LOCAL GOVERNMENT	7
FEDERAL GOVERNMENT	6
EXPORTS	4

TABLE D. IMPORTS, WASHINGTON, 1963

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	1	2	3	4	5	6	7
1 LIVESTOCK AND PRODUCTS	4.0000	0.5000	0.0000	0.0000	24.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	4.5000	0.0000	0.0000	55.0000	1.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000	10.4000	0.0000	0.0000
4 MINING	0.0000	0.3000	0.0000	0.0000	0.0000	0.0000	0.0000
5 FOOD AND KINDRED PRODUCTS	30.0000	0.0000	0.3000	0.0000	24.9000	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	1.6000	0.3000	0.0000	1.2000	1.2000	21.5000
7 APPAREL	0.0000	0.0000	0.1000	0.0000	0.4000	0.0000	0.6000
8 LUMBER AND WOOD PRODUCTS	0.0000	0.0000	0.1000	0.0000	0.1000	0.0000	0.0000
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0000	0.0000	0.0000	0.0000	4.1000	0.0000	0.0000
11 PRINTING AND PUBLISHING	0.0000	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000
12 CHEMICALS	4.5000	25.0000	0.3000	0.0000	0.1000	4.0000	0.0000
13 PETROLEUM REFINING	3.2000	7.3000	0.3000	0.5000	0.9000	0.0000	0.0000
14 STONE, CLAY AND GLASS	0.0000	0.0000	0.0000	0.0000	5.2000	0.0000	0.0000
15 IRON AND STEEL	0.0000	0.5000	0.0000	1.6000	0.0000	0.0000	0.0000
16 NONFERROUS METALS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17 FABRICATED METALS	0.4000	1.0000	0.1000	0.2000	12.1000	0.0000	0.0000
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.1000	0.1000	0.0000	0.0000	0.0000
19 MACHINE TOOLS AND SHOPS	0.0000	0.0000	0.0000	0.2000	0.0000	0.0000	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.0000	4.0000	0.0000	0.0000	0.2000	0.0000	0.0000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.5000	0.6000	0.0000	0.4000	0.2000	0.0000	0.0000
24 OTHER MANUFACTURING	0.0000	0.0000	0.0000	0.4000	0.5000	0.0000	0.2000
25 MISC. CONST., TRADE, SERVICE	37.2000	27.5000	2.0000	12.3000	37.9000	1.1000	3.7000

TABLE D. IMPORTS, WASHINGTON, 1963 (CONTINUED)

(MILLIONS OF DOLLARS)

PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)

SELLING INDUSTRY	8	9	10	11	12	13	14
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 MINING	0.0000	0.0000	0.0000	0.0000	3.0000	0.4000	2.5000
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	2.5000	0.0000	0.0000	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.4000	5.5000	0.0000	0.0000	0.0000	0.0000
7 APPAREL	0.0000	0.0000	0.1000	0.0000	0.0000	0.0000	0.0000
8 LUMBER AND WOOD PRODUCTS	14.7000	1.0000	12.5000	0.0000	0.0000	0.0000	0.0000
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0000	0.3000	22.8000	0.0000	0.6000	0.0000	0.0000
11 PRINTING AND PUBLISHING	0.0000	0.0000	0.1000	1.5000	0.0000	0.0000	0.0000
12 CHEMICALS	2.7000	0.3000	24.7000	0.0000	19.8000	8.1000	0.2000
13 PETROLEUM REFINING	2.0000	0.0000	3.0000	0.0000	0.5000	11.0000	0.0000
14 STONE, CLAY AND GLASS	0.2000	0.0000	1.4000	0.0000	0.1000	0.0000	1.4000
15 IRON AND STEEL	0.6000	0.2000	0.3000	0.0000	0.6000	0.0000	2.4000
16 NONFERROUS METALS	0.5000	0.0000	0.0000	0.0000	1.4000	0.0000	0.1000
17 FABRICATED METALS	3.1000	1.1000	3.3000	0.7000	2.2000	2.0000	0.2000
18 NONELECTRICAL MOTIVE EQUIPMENT	0.2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19 MACHINE TOOLS AND SHOPS	0.4000	0.0000	0.0000	0.0000	0.9000	0.0000	0.3000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	2.1000	0.0000	5.9000	0.0000	0.8000	0.0000	0.2000
21 ELECTRICAL MACHINERY	0.0000	0.0000	0.9000	0.0000	1.0000	0.0000	0.1000
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	1.8000	0.0000	0.9000	0.0000	0.0000	0.0000	0.5000
24 OTHER MANUFACTURING	0.0000	1.0000	0.9000	0.0000	7.3000	0.1000	0.1000
25 MISC. CONST., TRADE, SERVICE	18.5000	1.6000	33.0000	3.8000	10.4000	20.5000	2.6000

SELLING INDUSTRY	15	16	17	18	19	20	21
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 MINING	0.9000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6 TEXTILE MILL PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.6000	0.0000	0.0000
7 APPAREL	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8 LUMBER AND WOOD PRODUCTS	0.0000	0.3000	0.0000	0.0000	0.0000	0.0000	0.0000
9 FURNITURE AND FIXTURES	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10 PAPER AND ALLIED PRODUCTS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11 PRINTING AND PUBLISHING	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12 CHEMICALS	0.2000	0.5000	0.9000	0.0000	0.0000	0.0000	0.2000
13 PETROLEUM REFINING	0.2000	5.0000	1.0000	0.0000	0.0000	0.0000	0.0000
14 STONE, CLAY AND GLASS	1.2000	0.6000	1.1000	0.0000	0.0000	0.0000	0.9000
15 IRON AND STEEL	0.8000	4.0000	18.1000	8.4000	3.8000	8.3000	1.9000
16 NONFERROUS METALS	0.0000	143.0000	12.1000	0.2000	0.9000	0.5000	1.2000
17 FABRICATED METALS	0.2000	0.2000	12.3000	2.3000	0.0000	1.7000	0.4000
18 NONELECTRICAL MOTIVE EQUIPMENT	0.0000	0.0000	0.0000	2.1000	0.0000	2.3000	0.0000
19 MACHINE TOOLS AND SHOPS	0.2000	0.0000	0.0000	0.3000	0.0000	0.2000	0.0000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	0.1000	0.0000	0.0000	0.7000	0.2000	3.1000	0.0000
21 ELECTRICAL MACHINERY	2.0000	0.0000	1.6000	0.7000	0.0000	3.0000	8.0000
22 AEROSPACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23 OTHER TRANSPORTATION EQUIPMENT	0.0000	0.0000	0.0000	0.0000	0.2000	0.0000	0.0000
24 OTHER MANUFACTURING	0.0000	0.0000	0.0000	0.3000	1.6000	0.4000	0.0000
25 MISC. CONST., TRADE, SERVICE	3.8000	40.8000	5.6000	1.7000	0.8000	2.6000	2.2000

SELLING INDUSTRY	22	23	24	25
1 LIVESTOCK AND PRODUCTS	0.0000	0.0000	0.0000	0.0000
2 OTHER AGRICULTURAL PRODUCTS	0.0000	0.0000	0.0000	0.1000
3 FORESTRY AND FISHERY PRODUCTS	0.0000	0.0000	0.0000	0.0000
4 MINING	0.0000	0.0000	0.0000	0.0000
5 FOOD AND KINDRED PRODUCTS	0.0000	0.0000	0.0000	2.0000
6 TEXTILE MILL PRODUCTS	1.8000	0.8000	0.8000	3.8000
7 APPAREL	0.0000	0.0000	0.0000	5.0000
8 LUMBER AND WOOD PRODUCTS	0.5000	0.5000	0.3000	33.7000
9 FURNITURE AND FIXTURES	1.1000	0.1000	0.0000	5.5000
10 PAPER AND ALLIED PRODUCTS	2.1000	0.1000	0.0000	0.7000
11 PRINTING AND PUBLISHING	6.5000	0.2000	0.0000	14.8000
12 CHEMICALS	9.7000	2.0000	3.8000	28.7000
13 PETROLEUM REFINING	0.3000	0.2000	0.0000	23.1000
14 STONE, CLAY AND GLASS	1.2000	0.8000	0.2000	54.1000
15 IRON AND STEEL	20.0000	9.4000	1.7000	18.7000
16 NONFERROUS METALS	25.0000	1.9000	0.8000	26.7000
17 FABRICATED METALS	18.2000	10.0000	0.3000	94.1000
18 NONELECTRICAL MOTIVE EQUIPMENT	0.8000	6.6000	0.0000	3.2000
19 MACHINE TOOLS AND SHOPS	6.0000	1.3000	0.0000	0.3000
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	10.5000	3.6000	0.1000	2.1000
21 ELECTRICAL MACHINERY	33.8000	10.0000	1.1000	31.6000
22 AEROSPACE	05.0000	0.0000	0.0000	0.2000
23 OTHER TRANSPORTATION EQUIPMENT	4.1000	23.6000	0.0000	11.7000
24 OTHER MANUFACTURING	15.0000	8.8000	1.3000	9.7000
25 MISC. CONST., TRADE, SERVICE	56.1000	13.4000	1.6000	167.5000

TABLE E. CHI-SQUARE STATISTICS COMPARING ESTIMATES WITH SURVEY-BASED REGIONAL COEFFICIENTS, WASHINGTON, 1963

INDUSTRY (COLUMN)	IMPORTS-ONLY METHOD UNADJUSTED	IMPORTS-ONLY METHOD ADJUSTED	EXPORTS-ONLY METHOD
1 LIVESTOCK AND PRODUCTS	456.28	352.00	120.69
2 OTHER AGRICULTURAL PRODUCTS	7968.60	3683.57	2885.09
3 FORESTRY AND FISHERY PRODUCTS	10155.73	6566.60	2266.61
4 MINING	61.27	16.71	5.12
5 FOOD AND KINDRED PRODUCTS	283.95	275.39	275.35
6 TEXTILE MILL PRODUCTS	12.87	0.34	3.36
7 APPAREL	22.53	4.68	8.07
8 LUMBER AND WOOD PRODUCTS	3227.04	1345.57	489.00
9 FURNITURE AND FIXTURES	42.91	27.91	7.86
10 PAPER AND ALLIED PRODUCTS	649.11	363.84	221.35
11 PRINTING AND PUBLISHING	80.01	77.11	27.19
12 CHEMICALS	657.45	257.25	433.01
13 PETROLEUM REFINING	25.22	19.69	1277.60
14 STONE, CLAY AND GLASS	64.22	40.63	65.53
15 IRON AND STEEL	232.04	76.87	35.15
16 NONFERROUS METALS	2405.48	887.73	183.49
17 FABRICATED METALS	183.02	21.53	17.81
18 NONELECTRICAL MOTIVE EQUIPMENT	75.61	13.83	10.25
19 MACHINE TOOLS AND SHOPS	25.32	24.85	3.48
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	102.66	86.99	19.20
21 ELECTRICAL MACHINERY	47.06	10.98	15.58
22 AEROSPACE	2766.51	809.53	9834.67
23 OTHER TRANSPORTATION EQUIPMENT	466.40	143.10	581.62
24 OTHER MANUFACTURING	19.57	7.91	42.33
25 MISC. CONST., TRADE, SERVICE	2939.48	758.74	1571.04

TABLE F. GROSS SALES ESTIMATED BY MULTIPLYING ESTIMATED INVERSE MATRIX BY THE SURVEY-BASED BILL OF GOODS, WASHINGTON, 1963

INDUSTRY	SURVEY	IMPORTS-ONLY METHOD UNADJUSTED	IMPORTS-ONLY METHOD ADJUSTED	EXPORTS-ONLY METHOD
1 LIVESTOCK AND PRODUCTS	235.4	387.3	235.4	246.7
2 OTHER AGRICULTURAL PRODUCTS	422.9	475.4	422.9	401.3
3 FORESTRY AND FISHERY PRODUCTS	118.3	109.2	118.3	120.9
4 MINING	53.4	145.7	53.4	58.1
5 FOOD AND KINDRED PRODUCTS	1113.0	1173.4	1113.0	1119.0
6 TEXTILE MILL PRODUCTS	12.3	25.5	12.3	13.3
7 APPAREL	60.2	81.4	60.2	56.0
8 LUMBER AND WOOD PRODUCTS	915.6	870.7	915.6	938.7
9 FURNITURE AND FIXTURES	40.1	46.8	40.1	40.6
10 PAPER AND ALLIED PRODUCTS	689.1	821.5	689.1	696.5
11 PRINTING AND PUBLISHING	122.8	121.5	122.8	106.9
12 CHEMICALS	309.3	397.8	309.3	473.8
13 PETROLEUM REFINING	265.5	290.0	265.5	288.3
14 STONE, CLAY AND GLASS	131.2	78.0	131.2	144.9
15 IRON AND STEEL	68.3	145.3	68.3	80.9
16 NONFERROUS METALS	418.0	418.9	418.0	422.7
17 FABRICATED METALS	154.6	164.1	154.6	168.0
18 NONELECTRICAL MOTIVE EQUIPMENT	56.6	89.7	56.6	63.5
19 MACHINE TOOLS AND SHOPS	32.6	71.2	32.6	36.0
20 NONELECTRICAL INDUSTRIAL EQUIPMENT	66.7	102.7	66.7	68.5
21 ELECTRICAL MACHINERY	50.5	99.0	50.5	55.6
22 AEROSPACE	1210.1	1223.8	1210.1	1790.5
23 OTHER TRANSPORTATION EQUIPMENT	309.2	339.8	309.2	347.8
24 OTHER MANUFACTURING	45.7	150.1	45.7	45.9
25 MISC. CONST., TRADE, SERVICE	5601.9	6060.0	5601.9	5868.5
26 LOCAL PRIVATE INPUTS (HOUSEHOLDS)	0.0	0.0	0.0	0.0

ATTACHMENT 2

William A. Schaffer, "Education in Regional Economics," Discussion Paper 17

EDUCATION IN REGIONAL ECONOMICS

by

William A. Schaffer*

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March 1970

Discussion Paper 17

A Program on Regional Industrial Development**
Georgia Institute of Technology

*The author is Associate Professor of Economics at Georgia Tech.

**This program is supported by the Office of Economic Research, Economic Development Administration, U.S. Department of Commerce (OER-163-G-67-13) and the college of Industrial Management, Georgia Institute of Technology.

EDUCATION IN REGIONAL ECONOMICS

by

William A. Schaffer*
Georgia Institute of Technology

The Southeastern United States, as defined by the Southeastern Regional Science Association, is the focus of this report on current trends in the teaching of regional economics. Following the introductory remarks describing the purpose of our study is an outline of our survey procedures. We then present a statistical profile of education in regional science in the United States. After a similar review of regional economics as taught in the Southeast, we discuss various aspects of the courses themselves.

The interest of society in the regional approach to solving current social and economic problems is clear. The last two decades have seen rapid increases in the number of private, academic, and government programs stressing regional development. Low-income areas, for example, have been assisted for some time by such government agencies as the Area Redevelopment Administration and the Economic Development Administration, with its associated regional planning commissions. Urban areas and their mounting problems have recently attracted public interest resulting in the growth of programs sponsored by the Departments of Housing and Urban Development and of Health, Education, and Welfare.

One measure of the response of the academic community to this interest is the formal research publications of regional scientists. The

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*The author is Associate Professor of Economics at Georgia Tech.
The research underlying this paper was supported by the Office of Economic Research, Economic Development Administration, U.S. Department of Commerce (OER-163-G-67-13). I am indebted to Mr. Charles L. Webb and Mrs. Stanlee L. Schaffer for their assistance.

Regional Science Association, now numbering over 2500 members, was organized in 1954 to foster an interdisciplinary exchange of ideas and to promote studies in regional science. Since its inception, this association has regularly published the Papers presented at its annual meetings. The Journal of Regional Science is now in its twelfth year as our major theoretical outlet and has enlarged its contents in recent years. The quality of articles appearing in such long-standing journals as Land Economics and Economic Geography has increased markedly as has the quantity of regional studies described in traditional economics journals.

Of particular interest is the trend toward new sectional publications in regional science. While sectional journals have long reported work in economics and geography, none have specialized in regional studies until recently. The Western Regional Science Association began publishing the Annals of Regional Science in 1967. The Mid-Continent Regional Science Association now appears ready to launch an annual publication associated with its meetings. But the most rapid expansion has taken place in the Southeast. The University of Kentucky published the first issue of Growth and Change in January 1970, and the Virginia Polytechnic Institute, in cooperation with the Southeastern Regional Science Association, publishes the first issue of the Review of Regional Studies in April 1970.

This paper is concerned with the number and content of region-related courses introduced into college curricula. This second measure is indicative not only of the value of the regional approach but also of the quality and usefulness of regional research and publications as well. Are the techniques of regional analysis worth including in the bag of tools assembled for tomorrow's leaders? Are university curricula reflecting changes in regional policy and research interest? In which schools and at the hands of professors with which backgrounds? And how do the courses themselves reflect current

interests? These and other related questions are approached in the following sections.

Survey Procedure

The information reported here was gathered through two surveys of regional scientists.

The first survey was conducted in the summer of 1968. A questionnaire was mailed in mid-July to members of the Regional Science Association living in the United States. Questionnaires were not mailed to Canada because of a postal strike; due to language barriers and postal expense, none were mailed to other countries. Of the approximately 1400 questionnaires mailed, 188 were returned, a response of approximately 13 percent. This low response may be attributed to two reasons. Many educators are away for the summer, on vacation or working on special studies of research projects. This absence caused some gaps which have not yet been filled. Thus, we missed entirely the regional program at Washington University and received replies from not a single Washington graduate. In addition, since members of the Regional Science Association are not all necessarily in the teaching profession, we did not expect response from those persons employed with government and private development agencies.

In retrospect, we can see several problems associated with the questions asked. One was in the definition of a "regional science" department, professor, or course. Several respondents expressed confusion on this point -- many courses and professors which some would classify as related to "regional science" are traditionally classified in a specific subdiscipline. Another was in forcing the educator to recall the year in which a course was first offered, its frequency of offering, and the average number of students. Only where the educator appears intimate with (was teaching) a particular course

could we rely on his response, which was typically hurried. An early conclusion of our analysis is that most professors are neither familiar with nor interested in courses offered by colleagues and other departments. One final observation is that well-meant short-answer questions receive well-meant short-answer replies. Thus, in attempting to draw out descriptions of classroom material, we asked "Have your regional research activities been useful in the classroom?" Of course most replies were positive, with comments ranging from a short sermon -- "Otherwise, teaching is sterile and boring" -- to a frank "Many students have research fellowships."

Included in our questionnaire was a request for copies of materials used by the respondent in teaching his courses, to give us insight into the current state of the art of teaching regional science. We felt that course outlines and reading lists, as well as quizzes or special class handouts, would indicate which topics are considered by most professors to be important in helping students approach today's regional problems. Our request for teaching materials drew a response of 88 outlines, or reading list-outline combinations. Of these, 68 courses seem to represent a true regional approach and have formed our sample for a review of courses across the nation.

The second survey was conducted in March and April 1970. This time we concentrated our effort on the courses associated with the economics of space and regions as offered by colleges in the Southeast. We limited our survey of the Southeast to those states contained within the bounds defined by the Southeastern Regional Science Association. Included by this definition are Maryland, West Virginia, Virginia, Kentucky, Tennessee, North and South Carolina, Georgia, Florida, Alabama, and Mississippi. A fairly extensive collection of catalogues for colleges in the Southeast was reviewed for initial coverage. We should note here that the catalogues available were not always the most recent and that even the most recent are not always

accurate records of courses actually being offered. Statements describing the course offerings of departments of economics, geography, and business were examined for their regional content. We noted courses in the economics of location, regional or urban economics, regional science, and economic geography. Since geography departments by nature teach courses dealing with space we selected only those explicitly associated with economics. Planning departments were lightly considered for the same reason and because of their relative scarcity in the Southeast.

Given this list of colleges offering regional courses we then attempted to interview by telephone an appropriate faculty member at each institution in order to collect information comparable to that collected earlier on the national level. While our coverage of the area has not amounted to a census, we have nevertheless gotten in touch with someone at most of the major colleges and universities listing regional economics courses in their catalogues. These interviews form the basis for our conclusions with respect to the Southeast.

Characteristics of Regional Scientists and Their Institutions

Our survey of the Regional Science Association drew replies from 188 persons. Of these respondents, 68 were employed by organizations not usually classified as teaching institutions, although an occasional response mentioned previous or possible future teaching duties, presumably in addition to the primary job. Table 1 shows that most of these respondents were working for government agencies. Almost 70 percent held a master's degree, with the remainder split evenly between bachelor and doctoral degrees. While a significant 60 percent graduated after 1960, almost 25 percent graduated

Table 1. Characteristics of Regional Scientists Employed by Non-Educational Institutions.

Characteristic		Percent
Types of institutions:	Government	68
	Private	32
Degree level:	Bachelor	16
	Master	68
	Ph.D.	16
Date conferred:	Before 1930	-
	1930 - 1939	4
	1940 - 1949	18
	1950 - 1959	17
	1960 - 1968	61

before 1950. The schools from which they graduated were scattered across the nation, with no one school providing more than 3 graduates in our sample. (Three came from the University of Washington.)

Table 2 records the characteristics of regional scientists responding to our survey who were teaching at the time. These educators represent 106 institutions in 33 states plus the District of Columbia. Less than one fourth of these institutions are privately supported. Over 80 percent of these respondents possess a doctorate; most degrees were in economics (42 percent), geography (34 percent), and regional science (6 percent). Over 70 percent of this sample graduated after 1960, with the remainder concentrated largely in the 1950's. By school, some concentration was also evident, with the University of Washington producing 10 percent of the sample, Pennyslvania 9 percent, Chicago 6 percent, and Berkeley, Harvard, Michigan, and Syracuse 5 percent each.

Thirty-three of the respondents holding teaching positions were in the Southeast, accounting for about 27 percent of the educator sample. While this sample is small to be the base for any but broad generalizations, we can conclude that Southeastern regional scientists have similar characteristics to those in the rest of the nation. Most of them hold a doctoral degree and they are generally young, having received their degrees in the 1960's. One difference is their specialization: fewer are geographers and more are economists. By degree, professors in the Southeast are reasonably scattered. Nine percent (3 respondents) of the sample graduated from each of the following: Harvard, North Carolina, Ohio State, Syracuse, and Tennessee. Michigan and West Virginia each provided 6 percent (2 respondents) of the sample.

Table 3 yields some generalizations about the institutions offering courses in regional science. Most are large universities offering courses used at all three degree levels. But 25 percent concentrate their work

Table 2. Characteristics of Educators in Regional Science, 1968

Characteristic		Percent for-- Nation	Southeast
1) Highest academic degree			
Bachelor:	Economics	1	3
Master:	Economics or Business	5	12
	Geography	7	3
	Urban Planning	3	-
	Sociology	1	-
Total Master's		16	15
Doctor:	Agricultural Economics	4	-
	Business Administration	3	-
	Economics	37	58
	Geography	24	21
	Economic Geography	3	-
	Operations Research	1	-
	Political Science	1	-
	Regional Science	6	-
	Sociology	3	-
	Natural Sciences (Water Resources)	1	-
Total Doctor's		83	79
2) Date degree conferred			
Before 1930		1	-
1930 - 1939		3	3
1940 - 1949		3	-
1950 - 1959		21	12
1960 - 1968		72	85
		100	100

Table 3. Profile Characteristics of Institutions Offering Courses Related to Regional Science, 1968

Characteristic	Percent for-- Nation	Southeast
1) Size of institution		
Less than 1,000	2	-
1,000 - 4,999	9	9
5,000 - 9,999	24	26
10,000 - 19,999	35	52
20,000 - 50,000	28	13
Over 50,000	2	-
	100	100
2) Orientation of institution		
University	78	92
Liberal arts	15	4
Engineering	3	4
Teacher education	4	-
	100	100
3) Degree levels involving regional-science courses		
Bachelor only	18	13
Master only	9	-
Doctor only	6	-
Bachelor and Master	12	33
Master and Doctor	10	4
Bachelor, Master, and Doctor	45	50
	100	100
4) Departments offering regional-science courses		
Agricultural Economics	3	3
Economics	36	47
Geography	35	38
Planning	14	3
Sociology	3	3
Urban Affairs or Real Estate	9	6
	100	100

exclusively on the graduate level, while 18 percent teach only to undergraduates. Economics barely predominates as a department, followed closely by geography.

Schools in the Southeast generally conform to this pattern. Southern schools tend to be smaller and bear larger titles. The degree levels involving regional-science courses are roughly similar to those in the national pattern. Slightly more of the courses than would be expected are taught in economics departments.

Regional Economics in the Southeast

The following remarks tentatively summarize our survey of regional courses in the Southeast in 1970. We reviewed 261 catalogues covering most of the major colleges and universities in the region. This review has been supplemented by telephone interviews at major institutions and our count will probably be revised as interviews continue. Our results to date are reported in Table 4.

Economic geography is a frequent course across the Southeast. We have simply listed these courses by state, including occasional courses such as urban and industrial geography when the course description indicates a strong economic content. The number of courses offered per state generally correlates with population, with North Carolina and Tennessee leading by number.

Regional-economics courses are not quite so ubiquitous and appear to depend more upon special faculty skills. Not every economist is prepared to teach a regional specialty. Tennessee leads, with many courses spread throughout the state system. Alabama follows, with interests largely based on faculty holding degrees from the University of Tennessee. The courses

Table 4. Region-Related Courses in Economics and Geography in the Southeast, 1970.

School	Offering department		
	Economics	Other	Geography
Alabama	9	-	5
University of Alabama (Tuscaloosa)	4		
University of Alabama (Birmingham)	2		
University of Alabama (Huntsville)	1		
Florence State College	1		
Samford University	1		
Florida	8	4	5
Florida State University	3	1	
Florida Technological University	1		
University of Florida	2	3	
Jacksonville University	1		
University of Miami	1		
Georgia	7	4	16
Emory University	1		
Georgia Institute of Technology	2		
Georgia State University	2	2	
University of Georgia	2	2	
Kentucky	4	1	18
University of Kentucky	3		
Murray State University	-	1	
Morehead State University	1		
Maryland	4	-	13
Johns Hopkins University	1		
University of Maryland	3		
Mississippi	2	-	7
Mississippi College	1		
University of Southern Mississippi	1		
North Carolina	7	-	28
Atlantic Christian University	1		
Duke University	1		
UNC (Asheville)	1		
UNC (Chapel Hill)	3		
Wake Forest University	1		
South Carolina	5	-	5
Clemson University	2		
University of South Carolina	3		

Table 4. Region-Related Courses in Economics and Geography in the Southeast, 1970. (continued)

School	Offering department		
	Economics	Other	Geography
Tennessee	14	2	22
East Tennessee State University	1		
King College	1		
Memphis State University	2		
Middle Tennessee State University	2		
University of the South	1		
University of Tennessee	5	2	
Vanderbilt University	2		
Virginia	4	1	12
Richmond Professional Institute	1		
Virginia Polytechnic Institute	2		
College of William and Mary	1		
West Virginia	3	-	8
West Virginia University	3		
Total	67	12	139

tend to be concentrated in the universities, where graduate work and faculty versatility are the rule. The exception is Mississippi, where we found only two courses throughout the state and these at neither of the two largest schools in the state.

Organization of Courses in Regional Economics

Limiting our range only to the broad outline of courses in location, regional, and urban economics, let us briefly examine several course formats. This task is quite difficult. Very few of the courses we have reviewed are similarly organized. Some provide only one-level divisions followed by reading assignments whose titles indicate the major contents of each section; others are detailed at several levels. And none can be relied upon to use definitions comparable to those of others. As a consequence, we review these courses with up to two-level detail at the hazard of slighting some respondents and confusing some readers.

Few courses identifiable as "location theory" or "the economics of location" appear to be pure. One exception is a graduate-level course by Hugh Nourse (Illinois). It concentrates on location questions presented in the first part of his text[1] and is organized as follows:

I. Introduction
II. Location of the individual producer
III. Systems of cities
  A. Trading areas in a homogeneous plain
  B. A simple model of a system of cities
  C. Trading areas in more complex situations
  D. Systems of systems of cities

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[1]Hugh O. Nourse, Regional Economics (New York: McGraw-Hill Book Co., 1968).

IV. Industrial location patterns
  A. Geographic dispersion of manufacturing
  B. Geographic variations in input prices
  C. Orientation
  D. Agglomeration economies
V. Land use
  A. Rent
  B. Supply areas
  C. Agricultural land use
  D. Commercial and industrial land use
  E. Residential land use
  F. Spatial equilibrium and land-use patterns
VI. General equilibrium in location theory

Nourse extends his text material with numerous reading references. In a lower-level course Nourse remains substantially within the confines of his text, adding the following topics to the first five listed above:

VI. Measurement of regional economic activity
VII. Interregional theory of income and trade
VIII. Regional economic growth
IX. The impact of growth on regional structure
X. Public policy

Another variation on the upper-level course, labelled "The Economics of Spatial Relations," has been organized by Alan Winger (Kentucky) around Martin Beckmann's text[2] as follows:

I. Space in the economic system
II. Earlier location models
III. Location of the plant
IV. Location of an industry
V. Central places
VI. Intra-urban location
VII. Equilibrium
VIII. Locational dynamics

Here Winger deemphasizes the regional structure, concentrating on more traditional location models.

A more typical senior-level course is that of Bernard McCarney (Illinois State). Called "Location Theory and Regional Analysis," this

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[2]Martin Beckmann, Location Theory (New York: Random House, 1968)

survey course is outlined as follows around a series of readings:

I. Introduction
   A. Definitions and purposes of regional economics
   B. Scope of regional economics
II. Location theory -- broad outlines
   A. Von Thünen -- location of agricultural activities
   B. Alfred Weber -- the location of a firm
   C. August Lösch -- the locational pattern of industries
   D. Extensions and synthesis of location theory
III. Specific topics in location theory
   A. Transfer costs
   B. Scale economies, market and supply areas
   C. Spatial differentials in cost of local inputs, and substitution
   D. Competition for space
   E. Labor and location
   F. Agglomeration
IV. Regional economic analysis -- techniques and a survey of applications
   A. The economic base approach
   B. Regional input-output analysis
   C. Regional income accounts

While this organization provides the instructor more opportunities to create interest in continued study, it obviously pushes against some serious time constraints for a one-quarter course. Policy implications and special topics seem crowded out by a need to cover the essential economic framework.

If more time is available or if the course is cast on a less restricted graduate level, other variations are common. John Cumberland (Maryland), for example, extends his course (Location Theory and Regional Analysis) to include other methods of analysis and concludes with a topic of personal interest, natural resource management and environmental quality. Koichi Mera (Harvard) intensifies his one-semester course on "Location and Regional Economics" for undergraduates and graduates to include all of the above plus policy discussions:

I. Introduction
   A. Objectives of regional analysis
   B. History of regional growth
   C. Regional policies
   D. Definition of regions
II. Theory of industrial location
   A. Competition along a linear space
   B. Comparative-cost analysis
   C. Current formulations
III. Interregional trade
   A. Factor and resource endowment

B. Direction of trade and change over time

IV. Spatial and interregional equilibrium theory
- A. Spatial competition equilibrium
- B. Interregional equilibrium
- C. Central place theory
- D. Interregional input-output model

V. Regional growth: theory and history
- A. Factor movements
- B. Regional efficiency
- C. Measurement of historical growth patterns
- D. Changes in the distribution over time

VI. Regional income and employment
- A. Income components
- B. Produced and received income
- C. Cyclical fluctuations

VII. Economies of agglomeration
- A. Scale economies
- B. Industrial complex analysis
- C. Urbanization economies

Other courses could be outlined. In general, our review indicates that introductory regional courses spread over a wide range, almost always starting with a review of location theory and venturing into regional economics, but usually staying within the context of traditional economics. The approach commonly depends on the text. Edgar Hoover's The Location of Economic Activity[3] is an easy text for a course such as McCarney's, allowing room for expansion or change as desired. Nourse's Regional Economics forces a fairly broad coverage, but requires more economic sophistication. Beckmann's Location Theory, clear and concise, provides ample opportunity to use supplementary material. Siebert's Regional Economic Growth[4] is more specific and demands closer attention to an integrated text; it is less readily divisible.

Before leaving the location course, we might compare the approach of the economist with that of the geographer. Peter Muller (Villanova)

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[3]Edgar M. Hoover, The Location of Economic Activity (New York: The McGraw-Hill Book Co., 1948)

[4]Horst Siebert, Regional Economic Growth: Theory and Policy (Scranton: International Textbook Co., 1969)

presents what seems to be a comparable economic geography course:

I. Introduction to economic geography
   A. Definition of the field of inquiry
   B. Scope of the field
   C. Locational analytical approach to economic geography
II. The location of primary activities
   A. Economic characteristics of agriculture
   B. The Von Thünen model of agricultural location
   C. Areal association as a technique in agricultural geography
III. Transportation theory
   A. Justification of transportation as a secondary economic activity
   B. Dynamic spatial patterns and transportation
   C. Ullman's three-factor theory of spatial interaction
   D. Freight rate structure of the United States
IV. The location of secondary activities
   A. Elementary notions of industrial location theory
   B. Cost structure of industry with emphasis on transfer costs
   C. Isodapane analysis
   D. Agglomeration theory
   E. The role of population and labor as a factor in determining industrial type
   F. An example of the "total approach" (combination of all previous factors) in the industrial location of the paperboard container industry in the U.S.
   G. Changing importance of industrial location variables
   H. American vs. Soviet principles of industrial location
V. The location of tertiary activities
   A. General discussion and brief presentation of location factors
   B. Mention of central-place theory
   C. Relation to course in urban geography in which tertiary locational analysis becomes the basis for an exhaustive analysis of the geography of cities

Emphasizing the division of activities into primary, secondary, and tertiary categories, his organization is common for geography courses. Geography courses appear to be taught more on spatial grounds and with a firmer descriptive base than are the more abstract economics courses.

Urban economics is a substantially more demanding topic, requiring the instructor to be more of a political economist than an economic analyst. Through its high density, the city intensifies problems of location, movement, and growth and clearly forces us to examine problems overlapping with those of other disciplines. Topics covered at three schools give the tenor of these courses as currently taught.

R.L. Pfister (Indiana) organizes his "Applied Urban Economics" course as follows:

I. Introduction -- regional and urban growth trends
II. Location theory
III. The theory of urban growth
IV. Urban transportation
V. Urban public economy
VI. Pollution and the urban environment
VII. Urban poverty and racial problems
VIII. Urban housing, urban renewal, and city planning
IX. The private sector and urban development
X. Overview

While maintaining contact with an economic base, Pfister quickly moves on to a discussion of transportation, pollution, poverty, housing, and other critical problems.

While changing the economic base of the course slightly, Hugh Knox (North Carolina) presents a similar list of topics in his "Urban Economics:"

I. General equilibrium theory and urban development
II. Urban economic growth theory
III. Optimum city size and spatial patterns
IV. Urban growth and the environment
V. Urban public economy
VI. Housing and urban renewal
VII. Urban transportation
VIII. Urban poverty and race
IX. A national urban policy

A third arrangement is that of a course presented jointly by John Meyer, John Kain, and Koichi Mera (Harvard):

I. General theoretical models
II. Simulation models of metropolitan structure
III. Intra-metropolitan industry location
IV. The determinants of residential location and the travel behavior of urban households
V. Racial problems in metropolitan areas
VI. Urban education systems, de facto segregation, and equality of educational opportunity
VII. Costs and benefits of urban services and municipal finance
VIII. Housing markets

Again, the major difference appears to be in the theoretical base of the course and perhaps in the emphasis awarded to problems. While course details

and readings may differ substantially, the general outlines appear similar.

In conclusion, we can simply note that regional economics is generally taught in three stages. The first takes a microeconomic approach in examining traditional location problems. The second takes a macroeconomic approach to regional economics and explores methods of regional analysis. The third tackles urban problems in an economic context. Neither the undergraduate nor the graduate curriculum in today's diversified programs in economics seems capable of expanding to permit an orderly development of these stages. Given this restriction it seems that we should make room in our introductory surveys for at least a brush with urban problems.

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A PROGRAM OF RESEARCH AND TRAINING IN REGIONAL INDUSTRIAL DEVELOPMENT

Final Report

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Office of Economic Research
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U. S. Department of Commerce

College of Industrial Management
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A PROGRAM OF RESEARCH AND TRAINING IN REGIONAL INDUSTRIAL DEVELOPMENT

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FINAL REPORT

on

A Program of Research and Training in
Regional Industrial Development

June 1, 1967 to June 30, 1970

Project No. OER 163-G-67-13 Georgia Institute of Technology

Through Grant OER-163-G-67-13, the Office of Economic Research supported a program of research and training in regional development at the Georgia Institute of Technology over the period June 1, 1967 through June 30, 1970. This grant has materially aided the College of Industrial Management in sponsoring a series of conferences on regional economics for professors in the Southeast, in redirecting the research efforts of faculty members and students toward regional problems, and in organizing a curriculum leading to a master of science in industrial development.

1) Seven conferences and seminars were conducted, with over 80 college professors of economics from 38 schools being introduced to techniques of regional analysis. The conference series has been instrumental in promoting new regional concern in colleges in the Southeast and in significantly strengthening the regional science curricula in these institutions.

2) Over the grant period, research conducted under

support of the Economic Development Administration has resulted in ten publications of a regional nature. Other papers are either under editorial consideration or are in draft form. This re-directed research effort continues in several areas, particularly those of the simulation of regional models and of employment analyses.

3) Faculty members have presented papers at over twelve association meetings, conferences, or forums and have significantly widened their regional affiliations.

4) With assistance from the Economic Development Administration, the College of Industrial Management launched a graduate degree program in regional development. Thirteen offerings of five specialized courses in regional science have reached an average of over fifteen students each. Five students have been graduated from the program and many others have been significantly influenced.

5) Over twelve research papers or theses have been completed by graduate students and have been circulated as program discussion papers or filed in fulfillment of degree requirements.

In briefly describing the activities pursued under this grant, we consider three topics: 1) the research program, 2) the conference program, and 3) the training program.

I. The Research Program

As the research program evolved, three major emphases became evident: 1) employment problems and patterns around urban areas, 2) the role of the entrepreneur and technology in regional development, and 3) models of regional economies.

A. Employment patterns. Dr. Fred A. Tarpley, Jr., initiated a study of the decentralization of industry to meet urban labor shortages. This study had as its focus the observed tendency in Atlanta of the Southern Bell Telephone Company to re-locate its exchanges in outlying areas. Tarpley's study was presented at the 1968 meeting of the Southeastern Regional Science Association; his conclusions are summarized in "Technology, Labor Markets, and Location," Southeastern Regional Science Association Papers, volume I.

In association with Lawrence S. Davidson and David D. Clark, Tarpley also completed a related study of the decentralization of office activities. This study, entitled "Flight to the Fringes: An Empirical Study of Office Decentralization in Atlanta," was presented at the 1969 meeting of the Southeastern Regional Science Association and will appear in the Review of Regional Studies, volume I.

With Dr. Jerry L. Dake, Tarpley read a paper at the 1968 meeting of the Transportation Research Forum. This paper, "The Timing Dimension of Urban Transport Decisions," is included in Transportation and Social Change, volume II of the papers of the Ninth Transportation Research Forum.

A second study effort concentrates on the role of private and public employment agencies in regional development. Conducted by Dr. Mack A. Moore, this study is a comparative analysis of the effectiveness of public and private employment agencies in bringing clerical applicants and jobs together in an expanding urban area. With the cooperation of several local employment agencies, Moore has assembled a substantial collection of data on job applicants and job openings. The first essay in a series examining this data was drafted late in the grant period; Moore's research will continue over the next year.

B. The entrepreneur and technology. Dr. Glenn Gilman has directed his attention toward the role of the entrepreneur and technology in economic development. While examining the role of research complexes in area development in his earlier efforts, Gilman found the topic to be one of little general substance and switched his queries toward more socially relevant topics. Two papers on "Developing Local Leadership" and "Managers and Entrepreneurs: Some Similarities and Differences" have appeared in the AIDC Journal, volumes III and IV. A third paper on "Technological Innovation, National Goals, and Public Policy" has been accepted for publication by the California Management Review.

Supplementing Gilman's work has been a research paper by Mr. Frederick C. Apple on "Industrial Spinoff from Georgia Tech: A Study in the Impact of a Technological Center on Its Surroundings." This paper has been circulated locally.

C. Models of Regional Economies. This research effort by Drs. Kong Chu and William A. Schaffer has evolved through several stages. Commencing with computer simulations, they have examined aggregate econometric models and program-budgeting techniques and have extended their explorations into the simulating of regional interindustry models.

Chu presented a paper on "Computer Simulation for Regional Economic Planning" at the 1968 meeting of the Western Regional Science Association. A revision of this paper by Chu and Schaffer appears in the Annals of Regional Science, volume II. This paper was followed by one by Chu and Schaffer on "Regional Models and Program Budgeting." Read at the 1968 meeting of the Southeastern Regional Science Association, it appears in the Southeastern Regional Science Association Papers, volume I. Chu and Schaffer also read a paper on "A Program-Budgeting Procedure for Regional Planning" at the 1969 meeting of the Western Regional Science Association.

Shifting their concern to regional input-output models, Schaffer and Chu presented a paper on "Nonsurvey Techniques for Constructing Regional Interindustry Models" at the 1968 meeting of the Regional Science Association; it appears in the Regional Science Association Papers, volume XXIII. Testing procedures for inexpensively producing regional models from national data against survey-based models of Washington, New Mexico, and Utah, Schaffer and Chu presented a paper on "Simulating Regional Interindustry Models of Western States"

at the 1969 Pacific Regional Science Conference. It will be published in the papers of that conference.

A third paper by Schaffer on "Estimating Regional Input-Output Coefficients" is under editorial consideration. This paper explores limited survey techniques and tests them against the survey-based Washington Study. As the grant period ended, Schaffer was in the process of converting the input-output programs for use with the 1963 national study in constructing teaching models of local economies. This work is continuing into the next several quarters.

II. The Conference Program

Conceived in the framework of a "trickle-down" theory of education, our conference series was designed to bring professors of economics in the Southeast into contact with new techniques of regional analysis and with leading scholars in the field. Seven conferences and seminars were conducted, with four being extended three-day conferences. Over 80 college professors from more than 38 schools attended. We judge the series to have been successful. A survey of these participants yielding 28 responses showed that, with five regional courses offered prior to the conference series, five new courses were offered in 1968 and eight more were proposed the following year.

In connection with the series a survey of education in regional science was conducted. Schaffer reported the results of the survey to the Southeastern Regional Science

Association in 1970 in a paper, "Education in Regional Economics." The paper will appear in the Review of Regional Studies, volume II. The survey also yielded a voluminous collection of course outlines and materials; this collection is still under review and has been valuable in preparing courses in the training program.

III. The Training Program

Concurrent with accepting the EDA grant, the College of Industrial Management also instituted a program of studies in regional and industrial development leading to the degree of master of science. Five specialized courses in regional science have been combined with courses in city planning, economics, and management to produce a curriculum designed to rationalize the process of development. These courses are titled the economics of industrial location, regional economics, development finance, research methods in development, and the entrepreneur, innovation, and change.

While the program has enrolled over eight students at times, only five have been graduated. The draft and a low starting salary for graduates working in the field have led to more than average attrition for the program. As a consequence, our major impact has been through the management and planning degree programs. In thirteen offerings, our regional courses have reached an average of over 15 students. These courses have also provided a testing ground for developing

such educational tools as a program for computing export-base models and our programs for simulating regional interindustry models for teaching purposes.

A significant by-product of the program has been over twelve research papers by students associated with the program. While to date receiving limited circulation, some of these case studies in development are the basis for continuing research into the economic impact of development subsidies, on an evaluation of development advertising, and on the location of the aluminum industry. Further studies on these topics are underway by the faculty.

IV. Conclusions

We feel that the grant by the Economic Development Administration has yielded significant benefits. It has played a substantial part in orienting our faculty toward research in regional problems and has stimulated investigations which will continue long past this date. It has brought a large part of the economics community of the Southeast together in pursuit of new techniques to solve regional problems and has fostered numerous new associations among regional analysts in the South. And it has permitted us to develop a degree program in regional development which may in time prove an important factor in the economic growth of the South.

We are pleased to have had some part in achieving the long-range goals of the Public Works and Economic Development Act and wish to express our appreciation to the Economic Development Administration for making our work possible.

Respectfully submitted

William A. Schaffer
Program Director

Sherman F. Dallas
Dean, College of
Industrial Management

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