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Using the Georgia Economic Model

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The Office of Planning and Budget
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The Georgia Interindustry Study was sponsored by the Office of Planning and Budget and the Department of Industry and Trade. Preliminary results have appeared in Georgia Business (May 1972) and in Introducing the Georgia Economic Model, published by the Department of Industry and Trade (after January 1, 1973, the Department of Community Development).

This document has been published for limited distribution as a public service by the College of Industrial Management, which bears no responsibility for its contents. On leave from Georgia Tech while directing the Study, Dr. Schaffer is now Associate Professor of Economics in the College. Dr. Laurent is presently Associate Marine Scientist at the South Carolina Marine Resources Center. And Mr. Sutter, a 1970 graduate of the College, is now employed by a systems analyst at Computer Management, Inc.

PREFACE

This document is intended to interest readers in using the Georgia Economic Model. To accomplish this end, we attempt to show how businessmen, State and local government officials, and development agencies can use our findings to their advantage.

The authors would be pleased to discuss the Georgia Interindustry Study and to share our conclusions and interpretations with all interested persons in and out of State government. The development simulators, the projection model, and the market information system are in use by the Department of Industry and Trade and the Office of Planning and Budget of the State of Georgia and by members of the College of Industrial Management at the Georgia Institute of Technology. Inquiries may be directed to the above State agencies or to the senior author at Georgia Tech.

We acknowledge with gratitude our sponsors, the Office of Planning and Budget and the Department of Industry and Trade. The continued interest and support of General Louis W. Truman, Executive Director of the Department of Industry and Trade, and of Mr. Tom Linder, Director of the Office of Planning and Budget during the Study period, have made this Study a success.

We received help from many officials in the State government, including: Dr. William W. Nash, Louis Schneider, and Kenneth P. Johnson in the Office of Planning and Budget; James O. Bohanan, James Butler, George Rogers and H.W. Wiley in the Department of Industry and Trade; Joe Woodall and Corine Cross in the Department of Labor; William M. Nixon

in the Department of Audits; and J.B. Murray and R.E. Davis of the Department of Mines, Mining, and Geology. Also helpful were: James D. Cooper of the U.S. Bureau of Mines; Frank H. Welton of the Georgia Agribusiness Council; Dr. Bill R. Miller of the College of Agriculture and Dr. William B. Keeling and Elizabeth E. Barnes of the Division of Research, University of Georgia.

Direct assistance in collecting data has been given by Dr. Charles F. Floyd, Dr. Susan Johnson, Stanlee L. Schaffer, Lawrence H. Hoe, and William M. Arrants. We have benefited substantially from earlier work with Dr. Kong Chu, Richard J. Dolce, and William E. Sumner: this work was supported in part by a grant from the Economic Development Administration to the Regional Development Program of the College of Industrial Management of the Georgia Institute of Technology. Many of the techniques used in the Study were developed in conjunction with the Hawaii Interindustry Study, which was directed by the senior author; the assistance of Dr. Young Joun and others on the staff of the Department of Planning and Economic Development of the State of Hawaii is appreciated.

This manuscript was prepared for publication by Mrs. Sarah Born. We acknowledge her patience through many drafts and we appreciate the care with which she has made innumerable changes; she deserves credit for its appearance.

However, this Study was the primary work of the authors for over a year and this document has consumed much of our lives; we claim both credit and responsibility for our product.

W.A.S.
E.A.L.
E.M.S., Jr.

November 1972

TABLE OF CONTENTS

Preface iii

1 INTRODUCTION AND HIGHLIGHTS 1

1.1 Introduction 1
1.1.1 Significance of the Georgia Economic Model 1
1.1.2 Organization of this Document 3
1.2 Georgia's Gross State Product 4
1.3 Georgia's Economic Structure, 1970 6
1.4 The Logic of the Model 7
1.5 Interindustry Relationships 7
1.6 Economic Structure in 1980 9
1.7 Selecting New Industries 10
1.8 Simulating Economic Development 11
1.9 The Market Information System 12

I THE GEORGIA ECONOMIC MODEL: INTERINDUSTRY RELATIONS, ANALYSIS, INTERPRETATIONS 15

2 THE GEORGIA INPUT-OUTPUT TABLE 17

2.1 Introduction 17
2.2 The State Transactions Table 17
2.3 Income and Product Accounts for Georgia, 1970 25
2.4 Summary 29

3 INPUT-OUTPUT RELATIONS IN THE GEORGIA ECONOMY 31

3.1 Introduction 31
3.2 Final Demand 32
3.2.1 Exporting Industries 33
3.2.2 The Economic Base of Georgia 35
3.2.3 Local Final Demand 38
3.3 Final Payments 40
3.3.1 Importing Industries 40
3.3.2 Imported Products 42
3.3.3 Household Payments 45
3.4 Interindustry Transactions 45

4 THE LOGIC OF INPUT-OUTPUT MODELS 49

4.1 The Rationale for a Model: Analysis vs. Description 49
4.2 Preparing the Transactions Table: Closing with Respect to Households 49
4.3 The Economic Model 50
4.3.1 Identities: the Transactions Table 51
4.3.2 Technical Conditions: the Direct-Requirements Table 53
4.3.3 Equilibrium Condition: Supply Equals Demand 55
4.3.4 Solution to the System: the Total-Requirements Table 55
4.3.5 Summary and Transition 61

4.4 Economic Change in Input-Output Models 61
4.4.1 Causes vs. Consequences of Change 61
4.4.2 Structural Change 62
4.4.3 Changes in Final Demand 64

5 ECONOMIC MULTIPLIERS FOR GEORGIA INDUSTRIES 67

5.1 Introduction 67
5.2 The Multiplier Concept 67
5.3 Output and Employment Multipliers 70
5.4 Household-Income Multipliers 72
5.5 Government-Income Multipliers 74
5.6 Industry Contributions to the Georgia Economy 76

II EXTENDING THE GEORGIA ECONOMIC MODEL 81

6 ECONOMIC PROJECTIONS 83

6.1 Introduction 83
6.2 Types of Projections 83
6.3 The Projection Model 85
6.3.1 Review of Basic Techniques 85
6.3.2 Construction of the Model 86
6.3.3 Basic Assumptions 88
6.4 Baseline Projections of the Georgia Economy, 1980 88
6.4.1 Estimates of Growth in Exogenous Demands and Productivity 88
6.4.2 The Aggregate Projections 89
6.4.3 Industry Projections 92
6.4.4 Allocation of Employment Projections to Trade Regions 94

7 ECONOMIC INTELLIGENCE 99

7.1 The Strategy of Development and Input-Output Analysis 99
7.2 A Self-Sufficiency Analysis 100
7.3 Income-Per-Employee Index 110
7.4 Synthesis 112

8 IMPACT ANALYSIS 113

8.1 Types of Short-Run Changes 113
8.2 Trade-Pattern Analysis 114
8.3 Development Simulators 115
8.3.1 Introduction 115
8.3.2 New Plant Simulator 116
8.3.3 New-Industry Simulator 116

9 A MARKET INFORMATION SYSTEM FOR GEORGIA 121

9.1 The Input-Output Table as a Market Information System 121
9.2 A Sample Market Analysis 121
9.3 Availability of Market Analyses 131

APPENDICES

A CONSTRUCTING THE TRANSACTIONS TABLE 135

A.1 General Approach 135
A.2 Data Sources 135
A.3 Overview of the Computer System 136
A.3.1 The First Estimate 149
A.3.2 The Second Estimate 151
A.3.3 The Final Estimate 154
A.3.4 Aggregation 157
A.3.5 Use of the System 157
A.4 Conventions and Definitions 159

B A MATHEMATICAL SUMMARY OF THE MODEL AND ASSOCIATED ANALYTICAL TOOLS 165

B.1 The General Mathematical Model 165
B.2 Multiplier Formulation 167
B.2.1 Output Multipliers 167
B.2.2 Employment Multipliers 168
B.2.3 Government-Income Multipliers 168
B.2.4 Household-Income Multipliers 168
B.3 Self-Sufficiency Analysis 169

C INTERVIEW FORM 173

D INCOME AND PRODUCT ACCOUNTS FOR GEORGIA, 1970 189

E INDUSTRY DEFINITIONS AND LIST OF AVAILABLE MARKET ANALYSES 203

F PROJECTIONS OF EMPLOYMENT GROWTH IN GEORGIA: A SHIFT-SHARE ANALYSIS (by Charles F. Floyd) 215

F.1 Introduction 215
F.2 Shift-Share Technique 215
F.2.1 National Growth Component 216
F.2.2 Industrial Mix Component 218
F.2.3 Regional Share Component 219
F.2.4 Net Relative Change 221
F.3 Projection Methodology 224
F.4 An Application of Shift-Share Analysis: Georgia Employment Growth 1950-1980 227

MATRIX TABLES: THE GEORGIA ECONOMIC MODEL 233

SELECTED REFERENCES 267

NOTES 273

ABOUT THE AUTHORS 277

LIST OF TABLES

Table		
2.2a	Aggregated Interindustry Transactions, Georgia, 1970	19
2.2b	Industrial Origins of Value Added in Georgia, 1970, and the United States, 1966	23
2.3a	Income and Product Accounts for Georgia, 1970	26
3.2a	Net Exports by Industries in Georgia, 1970	36
3.2b	Exports by Industries in Georgia as Percent of Total Exports, 1970	37
3.3a	Imports into Georgia, Classified by Producing Industry, 1970	44
4.3a	Direct Requirements of Georgia Industries, 1970	54
4.3b	Total Requirements per Dollar of Delivery to Final Demand, Georgia, 1970	57
4.3c	Total Requirements per Dollar of Delivery to Final Demand, Georgia, 1970 (Based on Interindustry Transactions excluding Households)	59
4.3d	Comparison of Total-Requirements Matrices excluding and including the Household Sector	60
5.3a	Output and Employment Multipliers for Georgia Industries, 1970	71
5.4a	Income Generated by Final Sales, Georgia, 1970	73
5.5a	Government-Income Multipliers, Georgia, 1970	75
5.6a	Contributions to Personal Income, City and County Government Income, and State Government Income by Industry Sales to Final Demand (excluding Households)	77
6.4a	Estimates of Annual Growth in Exogenous Demands and Labor Productivity	90
6.4b	Aggregate Projections of the Georgia Economy, 1980	91
6.4c	Projected Baseline Industry Outputs and Employment, Georgia, 1980	93
6.4d	Annual Growth in Projected Baseline Employment in Georgia, by Industry and Region, 1970-80	96
7.2a	Self-Sufficiency Output, Direct and Indirect Exports and Imports, and Gross Output for Industries in Georgia, 1970	109
7.3a	Indices of Income Generated per Employee (Direct, Indirect, and Induced) for Nonagricultural Industries in Georgia, 1970	111
E.1a	Industries in the 50-Industry Georgia Economic Model, 1970	204
E.2a	Detailed Manufacturing Industries for which Market Analyses Are Available	207

Table

F.2a	Employment and Components of Employment Change, United States, 1950-1959 and 1959-1967	217
F.2b	Employment and Components of Employment Change, Georgia 1950-1959 and 1959-1967	220
F.2c	Significance of Elements of Change in Shift-Share Analysis	222
F.3a	A Shift-Share Projection of Employment, Georgia, 1980	224
1	Interindustry Flow of Goods and Services in Georgia, 1970	234
2	Direct Requirements per Dollar of Gross Output, Georgia, 1970	241
3	Total Requirements (Direct and Indirect) per Dollar of Delivery to Final Demand, Georgia, 1970	251
4	Total Requirements (Direct, Indirect, and Induced) per Dollar of Delivery to Final Demand, Georgia, 1970	259

LIST OF ILLUSTRATIONS

Chart

3.2a	Export Sales as Percent of Gross Output, Georgia, 1970	34
3.2b	Sales to Local Final Demand as Percent of Gross Output, Georgia, 1970	39
3.2c	Sales to Total Final Demand as Percent of Gross Output, Georgia, 1970	41
3.3a	Imports as Percent of Total Inputs, Georgia, 1970	43
3.3b	Payments to Households as Percent of Total Inputs, Georgia, 1970	46
3.4a	Total Local Purchases as Percent of Total Inputs, Georgia, 1970	48
7.2a	Skyline Chart, Georgia, 1970	102

Figure

2.2a	The Transactions Table as a Picture of the Economy	21
4.3a	Algebraic Transactions Table	52
5.2a	The Multiplier Effect of a $100 Sale to Final Demand by the Georgia Manufacturing Sector	68
6.4a	Trade Regions of the Georgia Interindustry Study	95
7.2a	Illustrative Interpretation of Skyline Chart	107
8.3a	Illustration of Computer Printout of the Development Simulator, New-Plant Option	117
8.3b	Illustration of Computer Printout of the Development Simulator, New-Industry Option	119
9.2a	A Sample Market Analysis	123
A.3a	System Flow Chart, Georgia Interindustry Study	138

USING THE GEORGIA ECONOMIC MODEL

1

INTRODUCTION AND HIGHLIGHTS

1.1 Introduction

This chapter discusses the significance of the Georgia Interindustry Study to the State, outlines the remainder of this document, and reports the highlights and conclusions of the Study.

1.1.1 Significance of the Georgia Economic Model

The Georgia Economic Model is the final product of the Georgia Interindustry Study, a year-long and intensive economic study sponsored by the Office of Planning and Budget and the Georgia Department of Industry and Trade. The study identifies sales and purchase patterns in the State in 1970. Systematically assembled and supplemented, this data forms the Georgia Economic Model, showing the dependence of industries in the State upon one another and upon industries outside the State for markets and inputs.

The Georgia Economic Model is useful to businessmen, to area planners, and to state planning and development agencies in a number of ways. First, it compiles in a consistent framework a series of facts about the Georgia economy. This basic economic information system is organized around a transactions, or input-output, table which identifies consumption patterns, the industry structure, income sources, and nonmarket transfers in the Georgia economy. Through it, several important questions can be answered. What is Georgia's gross state product? Who received this income and what are its

major sources? The system also outlines the economic structure of the State, showing who buys Georgia products, who provides the inputs needed in making these outputs, and how production takes place.

Second, the Georgia input-output table is the basis for the Georgia Market Information System, through which market analyses can be provided for over 100 industry groups. Available to businessmen and development agencies, these analyses identify the sizes of Georgia markets, show the portions being served locally, project Georgia markets and production to 1980, and outline the markets and outputs of these industries in the Southeast in 1970.

Third, the Georgia Economic Model shows the importance of the various industries in the State and indicates the impact of changes in the demands for Georgia products on industry outputs, employment, personal incomes, and State and local government revenues.

Fourth, the Georgia Economic Model has been made into a computer-based "development simulator" which can be used to show the effects of changes in the economic structure of the State on other industries, on employment, and on personal and government incomes. The development simulator permits a testing of development programs for planning economic growth in Georgia.

Fifth, the Georgia Economic Model has been used to produce a series of baseline projections of the Georgia economy in 1980. These projections show the growth which might be derived from national growth patterns, and they stress both the need for planning and the importance of continued and stronger efforts by the Georgia Department of Industry and Trade and the other planning and development agencies in the State.

And sixth, the Georgia Economic Model represents a substantial step forward by the State government. The series of programs designed for using

this economic information system makes this the most sophisticated and powerful planning tool in the Southeast. The Georgia Economic Model is a critical element in the overall planning system required for promoting orderly growth in a complex State economy; to facilitate its integration into other data systems in the State, the Model has been developed with care to provide for ease in use, in modification, and in revision. The system can be extended to answer critical environmental questions and to project occupation needs for use in manpower planning and development. Refined and linked with existing data sources, the projection model can become a major instrument of State policy.

1.1.2 Organization of this Document

This volume discusses the use of the Georgia Economic Model in two sections. The Model itself and supporting materials are reported in a series of appendices.

Section I provides a basic guide to the input-output model and interprets many of the relationships uncovered in the Study. Chapter 2 reviews an aggregated version of the Georgia input-output table and develops an estimate of Georgia's gross state product. Chapter 3 highlights the input-output relations depicted in the 50-industry transactions table of Georgia. Chapter 4 shows how the Georgia Economic Model is constructed from this table. And Chapter 5 discusses measures of linkages and interrelationships between Georgia industries as derived from the 50-industry model.

Section II extends the Georgia Economic Model and demonstrates how to use the data generated for planning purposes. Chapter 6 reports a basic system for forecasting income, employment, and tax revenues in the State; in addition, it contains baseline forecasts of economic activity in Georgia in

1980; Chapter 7 discusses use of input-output data to determine the types of industries that contribute the most to the Georgia economy. Chapter 8 outlines a simulator of economic development for use in examining the economic implications of new economic activities, or changes in the economic structure of the State. Chapter 9 describes the interindustry system as a market information system for use by businessmen and public officials and discusses the information printed as part of our market-analysis procedure.

Technical and supporting materials are appended along with the tables recording the 50-industry Georgia Economic Model itself. The appendices review the estimating techniques and sources of data used in the Study, provide a mathematical summary of the Model and the analytical tools used in this document, and record such supplementary data as "shift-share" employment projections (by Charles F. Floyd) and the income and product accounts for Georgia in 1970.

1.2 Georgia's Gross State Product

Analogous in concept to gross national product (GNP), the gross state product (GSP) of a state can be defined as "the product of all economic units in the state" or as "total production without duplication." In 1970, Georgia's GSP was $20.459 billion, or 2.1 percent of GNP for the United States.

This total can be viewed in two ways: (1) as incomes received in payment for producing GSP, or (2) as expenditures to purchase the fruits of these labors. Of incomes received from producing sectors in Georgia, 71 percent went to households, 15 percent was retained as business savings and depreciation, and local, State, and Federal governments respectively received 2, 4, and 8 percent. After taxes, the distribution shifted to

become 57 percent for households, 15 percent as a capital residual, and 4, 6, and 18 percent for governments.

But expenditures are a different matter, for nonmarket transfers between economic units shift the balance again. Household expenditures were 59 percent of GSP, private investment expenditures were 11 percent, and local, State, and Federal government expenditures were 7, 4, and 14 percent, with the remaining 5 percent of GSP appearing as net exports to purchasers outside the State. When grants and defense expenditures are considered, the Federal government spent over $533 million more than it received in Georgia; local governments incurred a deficit of $112 million; and the State government showed a surplus of $55 million.

Most of Georgia's GSP originated in the service, manufacturing, and trade industries, indicating Georgia's position as an industrialized state. The industrial origins of GSP for Georgia in 1970 and of GNP in 1966 are as follows:

Origin	Georgia, percent of GSP, 1970	U.S., percent of GNP, 1966
Agriculture and mining industries	4	5
Construction	4	6
Manufacturing industries	26	29
Transportation, communication and utilities	8	8
Wholesale and retail trade	18	14
Service industries	26	27
Local government payrolls	4	
State government payrolls	2	11
Federal government payrolls	7	
Total	100	100

Georgia manufactures less than the nation as a whole but makes more of her income in trade and government activities, due largely to her central position in the Southeast.

1.3 Georgia's Economic Structure, 1970

The Georgia input-output table provides insight into the economic structure of the State, showing who buys Georgia products, who receives payments for goods produced in Georgia, and how production takes place.

Who buys Georgia products? In producing the gross state income of $20,459 million, economic units in Georgia produced output worth a total of $35,962 million. But 28 percent of this output was sold to other Georgia producers for further processing. Only 29 percent was purchased by Georgia households, while 43 percent was exported, or sold to producers and consumers outside the State.

While 32 out of the 50 industries sold over half of their outputs to purchasers outside the State, a large portion of Georgia's $14,091 million in exports was accounted for by a few major industries. The various textile industries accounted for 18 percent of Georgia's exports, the several transportation equipment industries for 14 percent, the agriculture and food products industries for 11 percent, and the paper industries for 5 percent.

From whom do Georgia producers buy? Of the purchases and payments involved in producing the gross outputs of Georgia industries, 28 percent was paid for purchases from other Georgia producers, 33 percent was paid to households in wages and salaries and other personal income, 8 percent went to depreciation and retained earnings and other capital-associated expenses, and 1, 2, and 4 percent were paid respectively to local, State, and Federal governments. The remaining 23 percent was paid to producers outside of

Georgia in return for goods and services not available in Georgia.

State government imported only 21 percent of its purchases from outside the State. Local governments imported 23 percent, the same as private producers; 31 percent of household purchases were produced outside the State; and 36 percent of investment expenditures were for equipment produced outside of Georgia.

1.4 The Logic of the Model

The Georgia input-output table outlines the economy as it existed in 1970. Through a series of calculations, this accounting system is converted into a model for use in analyzing economic change in the State. Short-run changes in industry sales and trade patterns are traced through a multiplier, or impact, model, while long-run changes are examined through a projection model.

1.5 Interindustry Relationships

The Georgia Economic Model has been used to compute a series of measures of the effects of additional sales on output, employment, and income in the State. Called "multipliers," these measures are derived from economic-base theory, which divides the economy into two sectors: (1) the basic sector, which produces goods and services to be exported, or sold outside the State; and (2) the supporting sector, which provides the local goods and services required for the basic sector to perform its function. Each dollar received by the basic sector in return for exports is respent in part with the supporting sector and in part to import the materials not purchased locally from outside the State. The local money circulation traced in this spending chain depends on the size of the "leaks" in the system, which are

represented by imports. The Georgia Economic Model is a detailed economic-base model which permits identification of exporting industries and import leakages and leads to estimates of multiplier values.

Output multipliers are highest in Georgia among supporting industries which are not directly influenced by development activities and which do not export extensively: dairy products, business services, and finance, insurance, and real estate are examples. (Many supporting industries such as transportation services and trade show high multipliers because their outputs are defined as gross operating margins which have a high labor content relative to other industries. High direct payments to households frequently lead to high multipliers because of large local expenditures by households in succeeding rounds of spending.) The multipliers are low for many industries producing for export. Motor vehicles and aircraft are good examples of industries with low multipliers due primarily to the small amount of local inputs, excluding labor, used in their production processes. With interindustry flows traced through both industries and households, output multipliers range from 3.11 for dairy products to 1.75 for motor vehicles.

Employment multipliers show the number of employees required per $10,000 in additional sales. They also are high for supporting industries but show wide range among manufacturing industries. The highest is in the apparel industry (1.05), well known for the high labor content of its products; lowest are in motor vehicles (.33), grain mill products (.35), and aircraft (.39), all of which have few interindustry linkages in Georgia.

Income multipliers report the personal income generated per unit of additional sales. They range from a high of .88 in finance, insurance, and real estate to a low of .35 in motor vehicles and grain mill products. Much

depends on the initial payments of incomes to households by an industry and on the circulation induced by this income. But indirect income from circulation through the industrial structure is also important, especially in the food, paper, chemical, stone, clay, glass, and service industries.

Generally, the multipliers show that the linkage between industries in Georgia is weak, with much local circulation depending on the respending of incomes by households. Georgia industrialized late, with strong market channels already established by outside producers; much of the linkage present in a more mature economy remains to be developed.

1.6 Economic Structure in 1980

An important use of the Georgia Economic Model is to project the Georgia economy in 1980. With expected national growth rates and expected changes in labor productivity as controlling inputs, the Georgia projection model provides insight into Georgia's potential for growth. If Georgia industries responded only to national needs, Georgia's gross state product would grow at 4 percent annually, personal income at 3.7 percent, employment at 1.7 percent, and population at 1.5 percent. This growth pattern would yield a per capita income growth at 2.2 percent annually, considerably short of the expected 3.1 percent growth in national per capita income.

This potential slowness in growth of per capita income could be avoided in two ways. One is simply to create more jobs and to increase the proportion of the population which is working. An increase in the labor-force/population ratio to expected national levels in 1980 would raise Georgia's per capita income growth rate to 2.9 percent.

The other way is more difficult, for not only must more jobs be created, but they must be the right jobs in the right places. The industries

which dominated Georgia in 1970 are expected to grow slowly during the decade; they are facing strong competition and many pay relatively low wages. To increase the rate of growth in per capita income will require a shift of Georgia's economic structure toward higher-income industries. This task requires continued efforts not only in promoting new industry but also in upgrading labor skills, in educating and assisting new entrepreneurs, in providing public services, and in carefully selecting industries to encourage in the State.

1.7 Selecting New Industries

In selecting industries to encourage in Georgia, development agencies should be concerned with several things. One is activities in which the State has a clear comparative advantage (as in certain stone and clay products, floor coverings, and pulp and paper products). Many of these are resource-related or require special skills or groups of activities which have developed locally; they have emerged because they are obvious. Another concern is the impact of new activities on the environment and on the social needs of the people. A third is the possibility of filling in missing links in the industrial structure and improving the flow of income within the State. And a fourth concern is the effect of new activities on per capita income.

A useful feature of the Georgia Economic Model is its ability to reveal both the direct and the indirect effects of changes in imports and exports. Thus, it can trace the importing of raw milk through the dairy products industry or the exporting of pulpwood through the paperboard container industry. An analysis of direct and indirect import and export patterns reveals that Georgia's strength lies in agriculture, textiles, apparel, lumber and wood products, and pulp and paper products. The State

holds its own in supporting and service industries. The largest missing links are in petroleum production and in primary iron and steel, industries about which little can be done. Although strong in producing certain durable goods such as aircraft, mobile homes, and electrical transmission equipment, the State's deficiencies are primarily in durable-goods manufacturing. To round out the economy and to improve its industrial linkages, the State should encourage activities in this area.

Which export activities will yield the greatest increases in per capita income? In 1970, $11,213 million in personal income was associated with an industrial labor force of 1,244,076 for an average of $9,093 in personal income per worker. With the Georgia Economic Model, an index comparing income and employment generated per dollar of additional sales can be computed to include both direct and indirect effects of new activities. Values greater than $9,093 show industries which clearly contribute to higher per capita income. These industries are finance, insurance, and real estate; aircraft and parts; pulp and paper mills; beverages; miscellaneous electrical equipment; motor vehicles and parts; primary iron and steel; printing and publishing; other mining; nonferrous metal manufacturing; business services; dairy products; fabricated metal products; paperboard containers; machinery; plastics, drugs, and paints; communications and utilities; government enterprises; and stone and clay mining.

1.8 Simulating Economic Development

The Georgia Economic Model has been programmed to permit the simulation of economic change in the State. The 50-industry model maintained at the Office of Planning and Budget and the Department of Industry and Trade can be modified to show the effects of a new plant or an entirely new industry on

the economy. The analyst specifies the industry code and size of the new plant and the computing system responds by constructing a 51-industry model containing the new industry. The printout shows the probable effects of the new activity on industry outputs, employment, personal income, and government revenues. The analyst can then use this information, modified as needed to fit the specific nature of the new plant, to make decisions as to the importance of the new activity and can identify ways to better integrate it into the Georgia economy.

1.9 The Market Information System

To insure maximum use of the Georgia Economic Model as an economic information system, a series of programs have been carefully developed to print the information developed in the study in the form of market analyses. These analyses report sales and production in Georgia in 1970, expected markets and production in 1980, and summary sales and production figures for the Southeast in 1970. Covering 140 industries, they are available from the Department of Industry and Trade upon an expression of interest.

SECTION I

THE GEORGIA ECONOMIC MODEL: INTERINDUSTRY RELATIONS, ANALYSIS, INTERPRETATIONS

SECTION I

THE GEORGIA ECONOMIC MODEL: INTERINDUSTRY RELATIONS, ANALYSIS, INTERPRETATIONS

This section summarizes and interprets the empirical findings of the Georgia Interindustry Study. Chapter 2 describes the format of the State input-output table and constructs from the table a set of income and product accounts for Georgia. Chapter 3 discusses the various summary measures of relationships in Georgia which have been derived from the 50-industry model. Chapter 4 outlines the logic of input-output models and places the notion of economic change into the context of such models. Chapter 5 develops the concept of export multipliers and reports these multipliers for industries in Georgia.

As its name implies, "interindustry" economics investigates the relationships "between industries;" it emphasizes the structural interdependence of the producing and consuming units of an economy. In its analytical role, it is essentially a theory of production based on the interrelations between producing units. In its social-accounting role, it is a useful supplement to more highly aggregated systems and provides a

convenient display of data relating to economic problems. In fact, it derives its popular name, "input-output economics," from the double-entry accounting in interindustry transactions tables for each cell entry as both a purchase of an input and a sale of an output.

The Georgia Economic Model is an open, static, input-output model which conforms generally to the national input-output study in format, definitions, and conventions. For the reader who is unfamiliar with the terms used by regional economists, we will note here several important definitions. An industry is a producing activity; what it produces is of little consequence and may range from cows on one hand to the postal service on the other. Final-demand sectors are the ultimate or final consumers of goods and services. In an open economy such as a state, in which trade occurs freely across boundaries, the export sector is an important final-demand sector. We treat a good which is exported across the state's boundaries as if it will not return in any form -- it has gone to its ultimate consumer. Similarly, final-payment sectors are the ultimate receivers of payments or incomes and the import sector is an important final-payment sector. We treat a payment which crosses the state's boundaries as if it will not return. The economic transactions in the model are recorded in producers' prices, which means that the output of the trade industry represents only the gross margins or the markups on goods sold. This convention permits us to trace sales back to the industries which produce goods rather than to the trade sector which simply handled them. Other conventions concerning the treatment of such things as secondary products, excise taxes, imputed value of owner-occupied housing, etc., are not important to the understanding of this review.

2

THE GEORGIA INPUT-OUTPUT TABLE

2.1 Introduction

This chapter presents the input-output table as an accounting system for an economy. It relies on a 5-industry aggregation of the basic 50-industry table for Georgia. First, we look at the table as a whole and then we examine in more detail the quadrant of the table which reports the income and product accounts for Georgia.

2.2 The State Transactions Table

A state input-output model shows the interactions of industries in a state with each other, with industries outside the state, and with final demand sectors. The central element in this model is a state transactions table such as that shown in Table 2.2a. To avoid overwhelming the reader with details, we have aggregated the Georgia transactions table. Fifty industries are combined into five broad industries, six final-payments sectors are presented as three, and six final-demand sectors are shown as three.

Each row in this table accounts for the sales by the industry named at its left to the industries identified across the top of the table and to the final consumers listed in the right-hand section of the table. Intermediate goods are sold to local industries for use in producing other

products while finished goods are sold to final consumers. Goods exported from the state to other parts of the nation and the world are listed under exports in the final-demand section, regardless of their stage of production. The sum of a row is the total output or total sales of an industry.

Thus, the sales by the extractive industry (a combination of agricultural, forestry, fishing, and mining industries) of Georgia are shown in row one of Table 2.2a. Of the total output worth $1,674 million, over 35 percent is sold to light manufacturing (which processes it for further sale), and over 35 percent is sold outside the state. The remaining sales are largely to other industries within the broad extractive industry itself.

Each column in Table 2.2a records the purchases, or inputs, of the industry identified at the top of the column from the industries named at the left. Payments by the industry to employees, holders of capital, and governments are contained in the first two rows of the final-payments section of the table. These payments constitute the "value added" by the industry in question. Purchases from industries outside the state are identified in the last row of the final-payments section and are called "imports." These imports may be either of goods not produced at all in the state or of goods produced in quantities insufficient to meet local needs. The sum of the entries in each column represents the total purchases by the industry in question. Since profits, losses, depreciation, taxes, etc., are recorded in the table as final payments, the total purchases and payments must equal total sales. Inputs equal outputs; hence the term "input-output."

For example, the purchases and payments of the extractive industry in Georgia are shown in column 1 of Table 2.2a. Since this industry is almost 90 percent agriculture, the column reflects large intraindustry

Table 2.2a Aggregated Interindustry Transactions, Georgia, 1970

In millions of dollars		Buying Industries						Final Demand				Total outputs
		Extractive industry (1)	Construction (2)	Manufacturing (3)	Trade (4)	Services (5)	Total local sales	Household expenditures	Other local final demand	Exports	Total final demand	
Selling Industries	Extractive Industry (1)	182.9	30.9	599.0	6.1	73.1	892.0	98.5	87.9	595.8	782.2	1,674.2
	Construction (2)	13.9	.9	42.7	13.8	292.9	364.2	0.0	1,802.6	352.7	2,155.4	2,519.6
	Manufacturing (3)	141.9	413.8	1,390.4	109.9	356.1	2,412.0	1,275.2	1,130.4	9,344.0	11,749.5	14,161.5
	Trade (4)	52.3	224.2	520.4	71.9	256.9	1,125.7	2,563.4	160.8	970.4	3,694.6	4,820.3
	Services (5)	102.0	220.9	862.1	558.3	1,990.1	3,733.4	4,262.3	522.8	2,828.3	7,613.4	11,346.8
	Total local purchases	492.9	890.8	3,414.6	760.0	2,969.1	8,527.3	8,199.3	3,704.5	14,091.3	25,995.1	34,522.3
Final payments	Households	595.0	665.0	3,695.5	2,385.0	4,603.1	11,943.6	99.7	2,523.7	0.0	2,623.3	14,567.0
	Other payments	261.1	240.6	1,623.5	1,364.8	2,402.2	5,892.2	(3,789.2)	(943.2)	(1,097.5)	(5,829.8)	5,892.2
	Imports	325.2	773.2	5,427.9	310.5	1,372.4	8,159.2	3,777.8	1,056.8	-12,993.8	-8,159.2	0
	Total final payments	1,181.2	1,628.8	10,747.0	4,060.3	8,377.7	25,995.1	3,877.5	3,580.5	-12,993.8	-5,535.8	20,459.2
Total inputs		1,674.2	2,519.6	14,161.6	4,820.3	11,346.8	34,522.3	12,076.8	7,285.0	1,097.5	20,459.2	54,981.5

Notes: 1) Based on Georgia Interindustry Study.
2) Other payments by final-demand sectors (in parentheses) are not included in totals.
3) Totals may not add due to rounding.

transactions (purchases of feeder stocks, baby chicks, grains, etc.), substantial purchases from light manufacturing (feeds), and a large payment to households for labor and proprietors' income. Georgia farmers also import from outside of the state large amounts of feeds and other supplies. Notice that the total inputs is the same as the total outputs identified in row 1.

Now, with this brief introduction to a state transactions table, let us look at the table as an accounting system for an economy. Figure 1 shows an input-output table in skeleton form and divided into four quadrants. Quadrant I describes consumer behavior, identifying consumption patterns of households and such other local final users of goods as private investors and governments. Another important part of Quadrant I is the export column, which shows sales to other industries and consumers outside the state economy. Since these goods would not normally reappear in the state in the same form, these sales are regarded as final. According to economic-base theory, in which final demand is the motivating force in an economy, we would look in this quadrant for activity-generating forces and we would especially examine the government and export sectors.

Quadrant II depicts production relationships in the economy, showing the ways that raw materials and intermediate goods are combined to produce outputs for sale to other industries and to ultimate consumers. This is the most important quadrant in an input-output table. For regions and states, it typically ranges in size between 30 and 39 industries. Quadrant II is the basis for the input-output model itself.

Quadrant III shows incomes of primary units of the economy, including the incomes of households, the depreciation and retained earnings of

Figure 2.2a. The Transactions Table as a Picture of the Economy

	PROCESSING	FINAL DEMAND	
PROCESSING	II INTERINDUSTRY STRUCTURE	I CONSUMP- TION PATTERNS	TOTAL OUTPUTS
PAYMENTS	III INCOMES	IV TRANSFERS	
	TOTAL INPUTS		

industries, and the taxes paid to various levels of government. These payments are also called value added; since they are so hard to identify individually, these incomes are frequently recorded as one value-added row. The quadrant also includes payments to industries outside the economy for materials and intermediate goods which are imported into the state. Since all of these payments to resource owners and to outsiders leave the industrial system of the state, they are called "final payments."

Quadrant IV identifies primarily nonmarket transfers between sectors of the economy and might properly be labeled the "social transfers" quadrant. Here we see gifts, savings, and taxes of households; we see the surpluses and deficits of governments and their payments to households and intergovernmental transfers. The quadrant also typically includes purchases by final-demand sectors from industries outside the state.

A glance across Table 2.2a yields several interesting points about Georgia, and about input-output tables. First, out of a total output of over $34 billion, Georgia's manufacturing output in 1970 was valued at over $14 billion and its service output at over $11 billion, indicating that Georgia's economy is dominated by the manufacturing and service industries. Even so, Georgia is not a major manufacturing or service economy by national standards. Table 2.2b compares the origins of gross income or value added in Georgia and the United States. Georgia has larger contributions to value added from trade and government than does the nation, and smaller contributions from the extractive industries, construction, manufacturing, utilities, and services. This deviation from the national pattern is an expression of the state's still modest stage of development and its central position in the Southeast.

It is useful to note that the "importance" of an industry is

Table 2.2b Industrial Origins of Value Added in Georgia, 1970, and the United States, 1966

Sector	Georgia, in percent of GSP	U.S., in percent of GNP
Agriculture, mining	4.2	5.2
Construction	4.4	5.6
Manufacturing	26.0	28.9
Transportation, utilities	7.7	8.1
Trade	18.3	14.6
Services	25.6	26.9
Government	13.7	10.7

Sources: Computed from the Georgia input-output table and from Input-Output Transactions: 1966, Staff Paper in Economics and Statistics, No. 19, February 1972, Bureau of Economic Analysis, U.S. Department of Commerce.

completely dependent on the definitions and aggregation patterns employed in constructing a table. By enlarging the table and altering sector definitions, we could change the apparent importance of industries. For example, by combining the agricultural industries with the food-processing industry (normally in manufacturing) we could make the "agriculture-based" industry larger than any of the components of the "trade" or "service" industries. In fact, in the 29-industry version of the Georgia table, the five largest industries in terms of output are: 1) trade, 2) finance, insurance and real estate, 3) services, 4) textile mill products, and 5) transportation equipment.

A second interesting item in Table 2.2a is the gross state product (GSP) of Georgia. Analogous in concept to the gross national product, GSP can be defined as total production without duplication, or as the economic product of all factors of production residing in the state. It can also be seen as the total final payments (adjusted for imports) in the state, 20.459 billion dollars. Alternatively, it is also the total final demand by ultimate consumers of the state's products (net of imports).

In summary, an input-output table traces the paths by which incomes flow through the economy. Quadrant I is where the spending cycle begins and is where finished goods go to satisfy the needs of final consumers. Quadrant III is where the production cycle starts, with households and other resource owners, including governments, receiving payments for their contributions to the production process. Quadrant II traces production relationships, describing the technology of production in the economy. It outlines the market sector of the economy. Quadrant IV identifies nonmarket flows of money, showing purchases of labor inputs by governments, taxes paid by

households, surpluses and deficits of governments, and transfers between governments and other governments and people.

2.3 Income and Product Accounts for Georgia, 1970

The input-output table embodies not only measures of gross state product but also a summary set of social, or income and product, accounts for the state. Like the input-output table itself, these accounts are part of a double-entry accounting system for the economy. In the same way that a businessman uses his accounts to develop a consolidated income statement for his firm, the economist uses income and product accounts to measure the performance of the economy and to compare the behavior of parts of the economy with other standards.

Table 2.3a is a transactions table for Georgia rearranged to emphasize Quadrant IV, the sector in which social accounts are traced. This social-accounts table completely eliminates the flows of intermediate products through the production quadrant and suppresses the details of the other quadrants. It emphasizes (1) the total final payments to resource owners for their contributions to production, (2) the aggregate demand for final products, and (3) the transfers which take place between primary units of the economy.

We have slightly rearranged the table. The row showing purchases from nonlocal industries (imports) has been moved above the final-payments rows. A row for transfers to households has been added to account for nonproductive money transfers to persons. And the one row for other payments in Table 2.2a has been expanded into four to show the details of final payments and transfers.

Table 2.3a Income and Product Accounts for Georgia, 1970

Account receiving payment / Account making payment	Sales to processing sectors	Household expenditures	Private investment	Expenditures of governments				Net exports	Total final demand	Total receipts
				Local	State	Federal, defense	Federal, other			
Purchases from local processors	8,527.3	8,199.3	1,400.4	460.9	432.3	1,057.0	353.9	14,091.3	25,995.1	34,522.3
Purchases from nonlocal industry	8,159.2	3,777.8	802.1	138.8	115.8	-	-	-12,993.8	-8,159.2	0
Total purchases from industry	16,686.5	11,977.1	2,202.5	599.7	548.1	1,057.0	353.9	-	17,835.9	34,522.3
Household income	11,882.6	99.7	-	790.7	372.7	671.0	689.3	-	2,623.3	14,506.0
Total purchases of goods and services	30,008.4	12,076.8	2,202.5	1,390.4	920.8	1,728.0	1,043.2	1,097.5	20,459.2	50,467.6
Household transfers	61.0	-	-	51.3	190.7	209.0	848.0	-	1,299.0	1,360.0
Capital residual	3,019.1	871.6	-	-	-	-	-	-1,688.2	-816.6	2,202.5
Local government income	480.3	377.9	-	-	445.9	-	47.3	112.4	983.5	1,463.8
State government income	858.8	341.9	-	22.1	-	-	408.8	-55.2	773.0	1,576.4
Federal government income	1,533.9	2,197.8	-	-	19.1	-	-	533.5	2,750.4	4,284.3
External transfers	-	-	-	-	-	-	-	-	-	-
Total outlay	34,522.3	15,866.0	2,202.5	1,463.8	1,576.4	1,937.0	2,347.3	0	25,393.0	61,354.6

Six accounts are outlined in the table. The receipts side of the household account is shown in the household-income and household-transfers rows, which total to be personal income; the payments side is detailed in the household-expenditures column. The saving and investment account is shown in the capital-residual row (retained earnings, depreciation, savings) and the investment column. Local, state, and federal government accounts are shown in their rows and columns. And the rest-of-the-world account is shown in the row labeled "purchases from nonlocal industry" and the column "net exports." By placing these accounts into one matrix, we gain both economy in presentation and a feeling for their commonality.

GSP may be measured in two ways, the incomes approach and the expenditures approach. Let us start with the expenditures approach.

Using expenditures, we define GSP as state output in terms of market value through the expenditures of final consumers. This approach accounts for the final demand for Georgia's product by four groups of consumers: households, investors, governments, and private units outside the state economy. In Table 2.3a, GSP is seen as total purchases of goods and services for final consumption, $20,459 million. In 1970, this was 2.1 percent of GNP. In comparison to expenditures for GNP, Georgia spends less for her gross product on personal consumption (59.0 percent in contrast to 62.9 percent for the nation), less on private investment (10.7, 13.5), and less on local and state government (11.3, 12.2); she makes up for this in terms of federal defense expenditures (8.4, 7.5), other federal expenditures (5.0, 3.6), and net private exports (5.3, 0.4).

Using the incomes approach, we can arrive at a similar GSP by adding the "income receipts" of the various accounts. The major receipt is earned

household or personal income, which is comprised of wages and salaries, other labor income, proprietors' income, and property incomes. Including business transfer payments (primarily bad debts) and social security contributions, this amounts to $14,567 million, or 71.2 percent of GSP; the corresponding national figure is 75.2 percent. The "capital residual," or gross business saving, of processors is $3,019 million and comprises 14.8 percent of GSP, which corresponds to 9.4 percent in the nation. The capital-residual row of Table 2 includes two transfers worth noting: one is personal savings; the other is a negative entry of $1,688 million in the exports column. This "export" accounts for the surpluses and deficits of the various governments and the outside world. Much of it represents flows of retained earnings and capital consumption allowances to the nonresident owners of branch plants in Georgia.

The third receipt to be added to GSP is local government income from the processing sector. At $480 million, this figure accounts for 2.3 percent of GSP. The next largest income of local governments in Georgia is a set of intergovernmental transfers from the state government (much of which is offset by a similar transfer from the federal government to the state). The deficits of local governments are shown as an "export" (primarily bonds) worth $112.4 million.

The fourth receipt to be counted as part of GSP is state government income from the processing sector of $859 million. Combined state and local revenues from industrial sources are 6.5 percent of GSP, compared to 8.5 percent on the national level. Note that the state had a surplus in 1970 of $55 million, entered as a negative value in the exports column.

The final receipt to be included in GSP is federal government income

from the processing sectors. Totaling $1,534 million, this is 7.5 percent of GSP. This compares with 6.9 percent on the national level. Notice that the federal government still spent $534 million more in Georgia than it received in taxes, accounted for largely through defense expenditures.

In sum, total receipts and payments by each of the six final sectors in the economy were $25,393 million. This figure is $4,934 million in excess of GSP. Where quadrant II shows intermediate transactions in the processing sector, the transfers quadrant records duplicative transactions in the social or political sector.

2.4 Summary

A state input-output table accounts for flows of monies through the state, showing details regarding consumer behavior, the technology of production, incomes, and social transfers. The transfers quadrant of a table can be slightly modified to show the details presented in the more traditional income and product accounts.

The social accounts are useful in two ways. One is in comparisons between economies; a brief contrast of the Georgia and U.S. economies has been sketched here and Georgia has been found to be strong in trade and government and slightly below the national pattern in manufacturing and services. The other way is in comparisons over time. But to show performance over time, social accounts and input-output tables must be constructed on a regular basis by state agencies.

3

INPUT-OUTPUT RELATIONS IN THE GEORGIA ECONOMY

3.1 Introduction

This chapter describes the economic structure of Georgia through a more thorough examination of the input-output tables and attempts to interpret some of the relationships uncovered in this examination. In Chapter 2 we pointed out the organization of an input-output table into four quadrants, each describing a part of the economy: Quadrant I identifies consumer behavior, Quadrant II details the interindustry structure of the economy, Quadrant III outlines payments to owners of resources, and Quadrant IV sketches nonmarket transfers in the economy. Quadrant IV was examined in Chapter 2; this chapter looks at the remaining three quadrants.

Since many of our comments will point toward export-related activities as critical to a modern economy's success, we comment here on the economic-base theory of regional growth. (This theory is also called the "export-base" theory -- the terms are synonymous.) The activities of an economy may be divided into two sectors, the basic (or export) sector and the support (or local)sector. Economic-base theory argues that an economy, especially a relatively small and open economy such as a state, must export goods and services if it is to prosper economically. Exporters of locally produced goods and services obtain income from customers outside

the economy. This export income then enters the economy to be dispersed in payment for the production of the exported goods in the form of wages and salaries, expenditures for materials and overhead, and profits. But unless the region is entirely self-sufficient, a portion of this circulating income leaks out of the local economy with each transaction in payment for imported goods, supplies, and services. With each round of expenditures made in support of exporting activities, local incomes increase in a continuing but diminishing chain. The impact of an original export sale tends to decrease with each successive round of expenditures as leakages continue; but if we account for all of the incomes accrued locally in this chain, it should be apparent that the export sale has led to increased activities in all industries in the economy.

The state input-output model is a giant economic-base model which permits us to trace in detail the chains of events set off by sales outside the state economy. This tracing is made in terms of multipliers. The input-output model also lets us observe the importance of exports and imports to an economy. Large export sales mean that an industry is "basic" to the state and is an activity-generating industry. Large local sales mean that an industry is a supporting industry which depends on basic industries for its income. Large import purchases mean that an industry is weakly linked to the local economy and contributes little besides wages and salaries to local incomes. Large local purchases means that an industry is important to many others in the economy.

3.2 Final Demand

Although not the largest quadrant in terms of number of entries in

the transactions table, the final-demand quadrant is the largest in value (by definition, the final-payments quadrant also has the same value). Total final demand of $25.995 billion accounts for 72.3 percent of the total sales of Georgia industries. Of this sales total, 43.1 percent is exported (with exports including both Federal purchases and private sales out of state) and 29.2 percent is consumed locally by households, investors, and state and local governments.

3.2.1 Exporting Industries

Exports are the more prominent part of final demand, especially when sales to the Federal government are included as exports (as is the case in this discussion). Chart 3.2a records export sales as a percent of total output for each industry. An impressive 32 out of 50 industries sell over 50 percent of their products out of state. The list is topped by the aircraft industry, which sells 95 percent of its output out of state, mostly to the Federal government. The floor covering, or tufted textiles, industry in north Georgia also exports 95 percent of its output, followed closely by the automobile industry.

But this chart should not be interpreted to mean that Georgia shows an export surplus (exports in excess of imports) in each of her industries. One reason is cross-hauling and competition between producers of similar products. A second reason is that many products are produced in each industry. In Georgia, for example, the petroleum refining industry produces asphalt and asphalt products, paving mixtures, and lubricating oils and greases, selling about $20 million in output out of state; at the same time, Georgia imports over $490 million in gasoline, oil, and other petroleum products.

Chart 3.2a Export Sales as Percent of Gross Output, Georgia, 1970

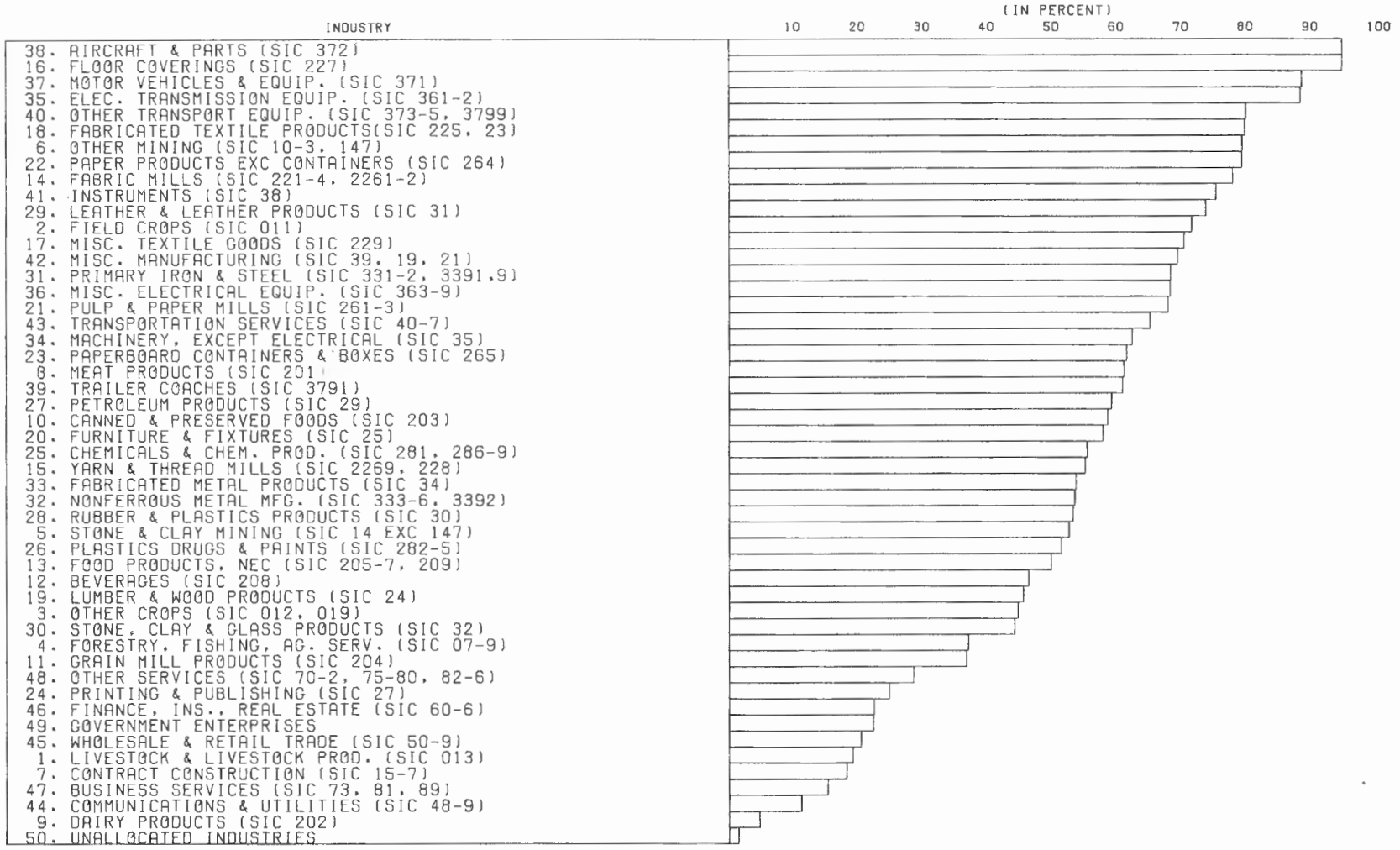


Table 3.2a shows the net exports by each industry. The largest surplus is in the several textiles industries, with aircraft, pulp and paper, trailer coaches (mobile homes), and meat products following. The state shows major deficits in agriculture, plastics, petroleum, metals, and machinery. Various supporting industries and other services also show surpluses.

The discussion of self-sufficiency in chapter 7 extends these comments to include both direct and indirect exports and imports.

3.2.2 The Economic Base of Georgia

Identifying the economic base of a state is not a simple matter. The problem is complicated by the number of approaches which might be taken. As in the preceding section, one approach is to identify the industries which export most of their outputs. A second approach is to look at each industry's exports as a percent of total exports. Table 3.2b presents these percentages.

Private exports are substantially larger than exports to the Federal government and might be examined first. The largest set of exports in this column appears in the various textile industries which jointly contribute over 20 percent of private exports. The transportation equipment industries contribute almost 10 percent of private exports and are closely followed by the food and kindred products group with 8 percent of exports. Fabricated textile products (mostly apparel) comprises 6.2 percent of exports and the paper and paper products industries follow with about 6 percent of exports.

Purchases by the Federal government, logically a part of exports, are dominated by a very large purchase from the aircraft industry. The Federal government also purchases a substantial amount from the finance and real estate industry and from construction.

Table 3.2a Net Exports by Industries in Georgia, 1970

	INDUSTRY	NET EXPORTS (MILLIONS OF DOLLARS) TOTAL EXPORTS	TOTAL IMPORTS	NET EXPORTS
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	144.9	158.2	-13.3
2	FIELD CROPS (SIC 011)	305.3	410.9	-105.7
3	OTHER CROPS (SIC 012, 019)	59.9	95.5	-35.6
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	65.5	19.7	45.8
5	STONE & CLAY MINING (SIC 14 EXC 147)	97.1	4.8	92.2
6	OTHER MINING (SIC 10-3, 147)	9.4	24.9	-15.5
7	CONTRACT CONSTRUCTION (SIC 15-7)	457.7	195.7	261.9
8	MEAT PRODUCTS (SIC 201)	426.4	288.8	137.6
9	DAIRY PRODUCTS (SIC 202)	8.3	118.7	-110.5
10	CANNED & PRESERVED FOODS (SIC 203)	112.6	135.6	-23.0
11	GRAIN MILL PRODUCTS (SIC 204)	97.3	113.9	-16.6
12	BEVERAGES (SIC 208)	175.1	169.5	5.6
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	297.5	373.9	-76.4
14	FABRIC MILLS (SIC 221-4, 2261-2)	786.3	325.6	460.6
15	YARN & THREAD MILLS (SIC 2269, 228)	486.1	187.5	298.6
16	FLOOR COVERINGS (SIC 227)	1317.1	15.4	1301.7
17	MISC. TEXTILE GOODS (SIC 229)	227.9	211.1	16.8
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	875.5	421.3	454.2
19	LUMBER & WOOD PRODUCTS (SIC 24)	221.7	233.8	-12.2
20	FURNITURE & FIXTURES (SIC 25)	134.6	99.9	34.7
21	PULP & PAPER MILLS (SIC 261-3)	486.6	111.8	374.8
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	178.1	179.0	-.8
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	178.2	120.3	57.9
24	PRINTING & PUBLISHING (SIC 27)	84.2	134.4	-50.2
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	231.9	181.7	50.2
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	163.7	766.5	-602.8
27	PETROLEUM PRODUCTS (SIC 29)	29.2	490.5	-461.3
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	130.4	184.6	-54.2
29	LEATHER & LEATHER PRODUCTS (SIC 31)	57.4	97.3	-40.0
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	171.5	160.7	10.9
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	79.0	361.1	-282.1
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	92.2	146.2	-54.1
33	FABRICATED METAL PRODUCTS (SIC 34)	265.3	446.1	-180.8
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	265.0	521.4	-256.4
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	168.7	108.6	60.1
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	118.4	399.5	-281.1
37	MOTOR VEHICLES & EQUIP. (SIC 371)	697.4	762.6	-65.3
38	AIRCRAFT & PARTS (SIC 372)	1328.5	352.1	976.3
39	TRAILER COACHES (SIC 3791)	156.9	8.0	148.9
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	39.5	55.2	-15.8
41	INSTRUMENTS (SIC 38)	63.5	180.9	-117.4
42	MISC. MANUFACTURING (SIC 39, 19, 21)	123.2	279.0	-155.8
43	TRANSPORTATION SERVICES (SIC 40-7)	863.5	530.3	333.2
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	143.2	148.1	-4.9
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	982.1	91.6	890.5
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	950.8	870.1	80.6
47	BUSINESS SERVICES (SIC 73, 81, 89)	165.8	351.5	-185.7
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	883.0	330.7	552.3
49	GOVERNMENT ENTERPRISES	94.6	7.5	87.1
50	UNALLOCATED INDUSTRIES	4.4	134.1	-129.7
	TOTAL	15502.2	12116.6	3385.6

Table 3.2b Exports by Industries in Georgia as Percent of Total Exports, 1970

	SELLING INDUSTRY	FEDERAL GOVERNMENT (DEFENSE)	FEDERAL GOVERNMENT (OTHER)	PRIVATE EXPORTS	TOTAL EXPORTS*
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0015	0.0026	1.0277	.93
2	FIELD CROPS (SIC 011)	0.0	3.4700	1.5884	1.97
3	OTHER CROPS (SIC 012, 019)	0.0021	0.0060	0.4237	.39
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0131	0.0000	0.4628	.42
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0050	0.0	0.6882	.63
6	OTHER MINING (SIC 10-3, 147)	0.2076	0.0049	0.0373	.06
7	CONTRACT CONSTRUCTION (SIC 15-7)	2.4588	2.4422	2.5031	2.95
8	MEAT PRODUCTS (SIC 201)	0.0554	0.0154	3.0158	2.75
9	DAIRY PRODUCTS (SIC 202)	0.0415	0.0377	0.0467	.05
10	CANNED & PRESERVED FOODS (SIC 203)	0.0087	0.0043	0.7973	.73
11	GRAIN MILL PRODUCTS (SIC 204)	0.0041	0.0265	0.6855	.63
12	BEVERAGES (SIC 208)	0.0071	0.0016	1.2412	1.13
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0192	0.0257	2.1043	1.92
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0233	0.0002	5.5765	5.07
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0000	3.4496	3.14
16	FLOOR COVERINGS (SIC 227)	0.0021	0.0006	9.3462	8.50
17	MISC. TEXTILE GOODS (SIC 229)	0.0023	0.0015	1.6171	1.47
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	0.0792	0.0217	6.1985	5.65
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0069	0.0018	1.5718	1.43
20	FURNITURE & FIXTURES (SIC 25)	0.0195	0.0233	0.9487	.87
21	PULP & PAPER MILLS (SIC 261-3)	0.0056	0.0116	3.4506	3.14
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0107	0.0081	1.2614	1.15
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0064	0.0012	1.2633	1.15
24	PRINTING & PUBLISHING (SIC 27)	0.1506	0.0003	0.5771	.54
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.6287	0.0479	1.5512	1.50
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0490	0.0255	1.1508	1.06
27	PETROLEUM PRODUCTS (SIC 29)	0.4452	0.0348	0.1404	.19
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.1186	0.0066	0.9080	.84
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0030	0.0006	0.4066	.37
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0254	0.0038	1.2132	1.11
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0339	0.0014	0.5558	.51
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0931	0.0028	0.6407	.59
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0886	0.0191	1.8676	1.71
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.4948	0.0849	1.7984	1.71
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.1684	0.0181	1.1711	1.09
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.3635	0.0503	0.7818	.76
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.4507	0.0350	4.8811	4.50
38	AIRCRAFT & PARTS (SIC 372)	43.4905	0.1529	3.4239	8.57
39	TRAILER COACHES (SIC 3791)	0.0	0.0001	1.1137	1.01
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0148	0.0103	0.2765	.25
41	INSTRUMENTS (SIC 38)	0.0465	0.0207	0.4410	.41
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.2625	0.0050	0.8372	.79
43	TRANSPORTATION SERVICES (SIC 40-7)	0.9153	0.1063	5.9844	5.57
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.4438	0.0371	0.9491	.92
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.4840	0.0973	6.8868	6.34
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0712	6.9057	5.5870	6.13
47	BUSINESS SERVICES (SIC 73, 81, 89)	1.4067	0.3320	0.9283	1.07
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	1.2073	0.6677	5.9894	5.70
49	GOVERNMENT ENTERPRISES	0.0714	0.1699	0.6334	.61
50	UNALLOCATED INDUSTRIES	0.0615	0.1354	0.0	.03
51	TOTAL LOCAL PURCHASES	54.5695	15.0782	100.0000	100.00
52	HOUSEHOLDS	45.4305	65.4921		
53	GROSS SAVINGS	0.0	0.0		
54	CITY & COUNTY GOVERNMENT	0.0	2.0151		
55	STATE GOVERNMENT	0.0	17.4146		
56	FEDERAL GOVERNMENT	0.0	0.0		
57	IMPORTS	0.0	0.0		
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000		

* Includes exports of goods and services only.

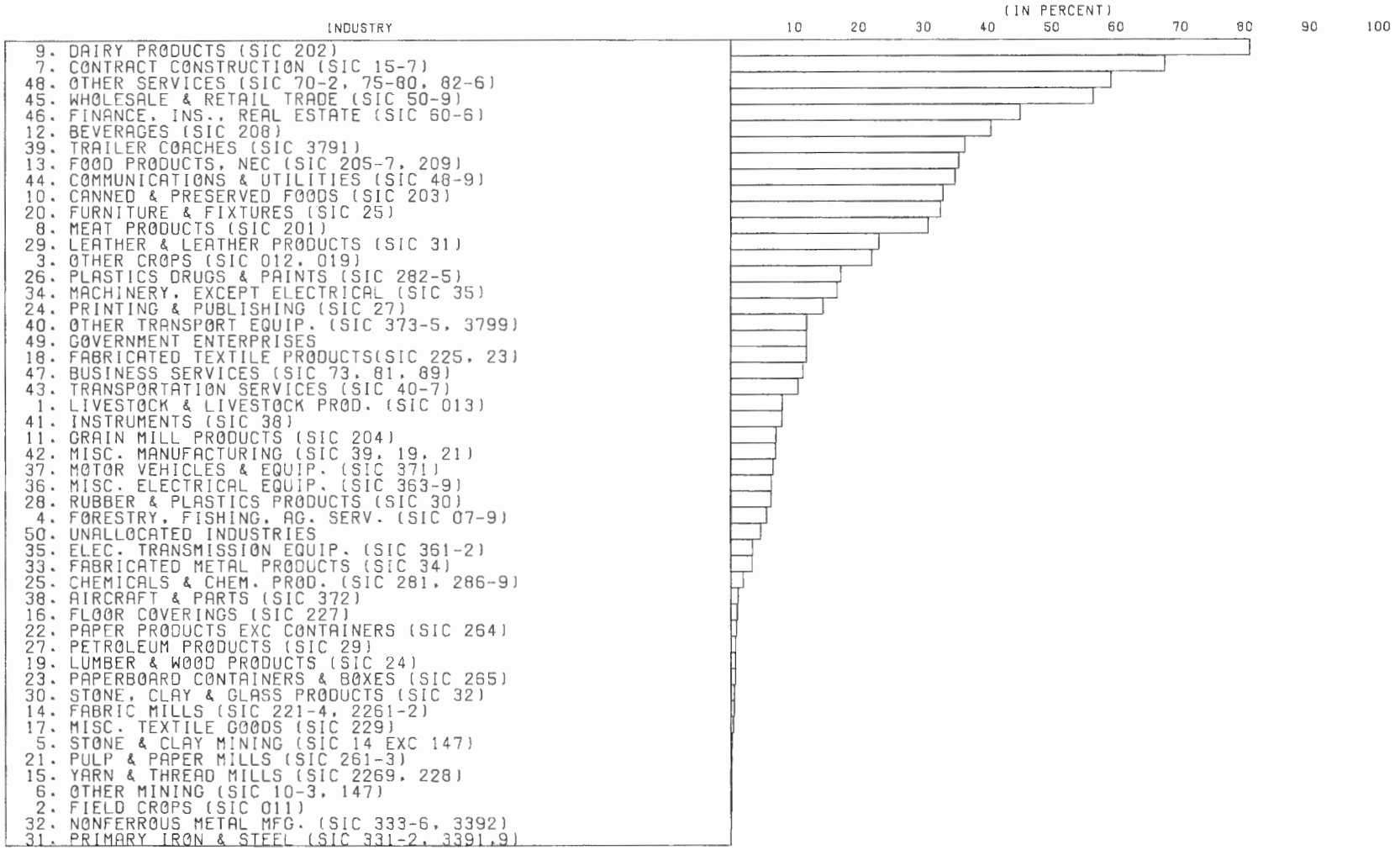
One complicating factor in this approach to identifying the export base of the state lies in the large sales by the supporting industries to outsiders. Transportation services, trade, finance and real estate, and other services all make large sales out of state. The transportation services and trade sales are to a large extent connected to the sales of basic products to which these margins are attached, but they are also associated with Atlanta's position as a central distribution and trade point in the Southeast. Sales by the other services include trade accommodations, personal services, and business services. Many of these are also related to Atlanta's position in the Southeast.

A third approach is through calculation of both direct and indirect exports. The discussion in this section has taken into account direct exports alone. But indirect exports, such as the export of chickens through the meat products industry or of yarn through the floor coverings industry, are also important. A discussion of this approach is reserved for Chapter 7, where a "skyline" or "self-sufficiency" analysis is presented.

3.2.3 Local Final Demand

One of the interesting revelations of the input-output study is the relatively small amount of local products consumed by local consumers, which are defined as households, local governments, and State government. Only 29.2 percent of total local production is consumed by local final users. As Chart 3.2b points out, the industries producing the most for local consumption are limited in market area by transportation problems. Dairy products, construction, trade, and real estate lead the list, all selling products which must be produced close to the point of consumption. The dairy products industry, of course, makes large purchases from the livestock

Chart 3.2b Sales to Local Final Demand as Percent of Gross Output, Georgia, 1970



products industry both in and out of state. The trade industry is associated with each transaction by other industries in that it is the channel through which other products reach their consumers.

Chart 3.2c is included to point out the relative importance of local final demand and exports in total final demand. The cross-hatched part of each bar is exports, with the remainder being local final demand.

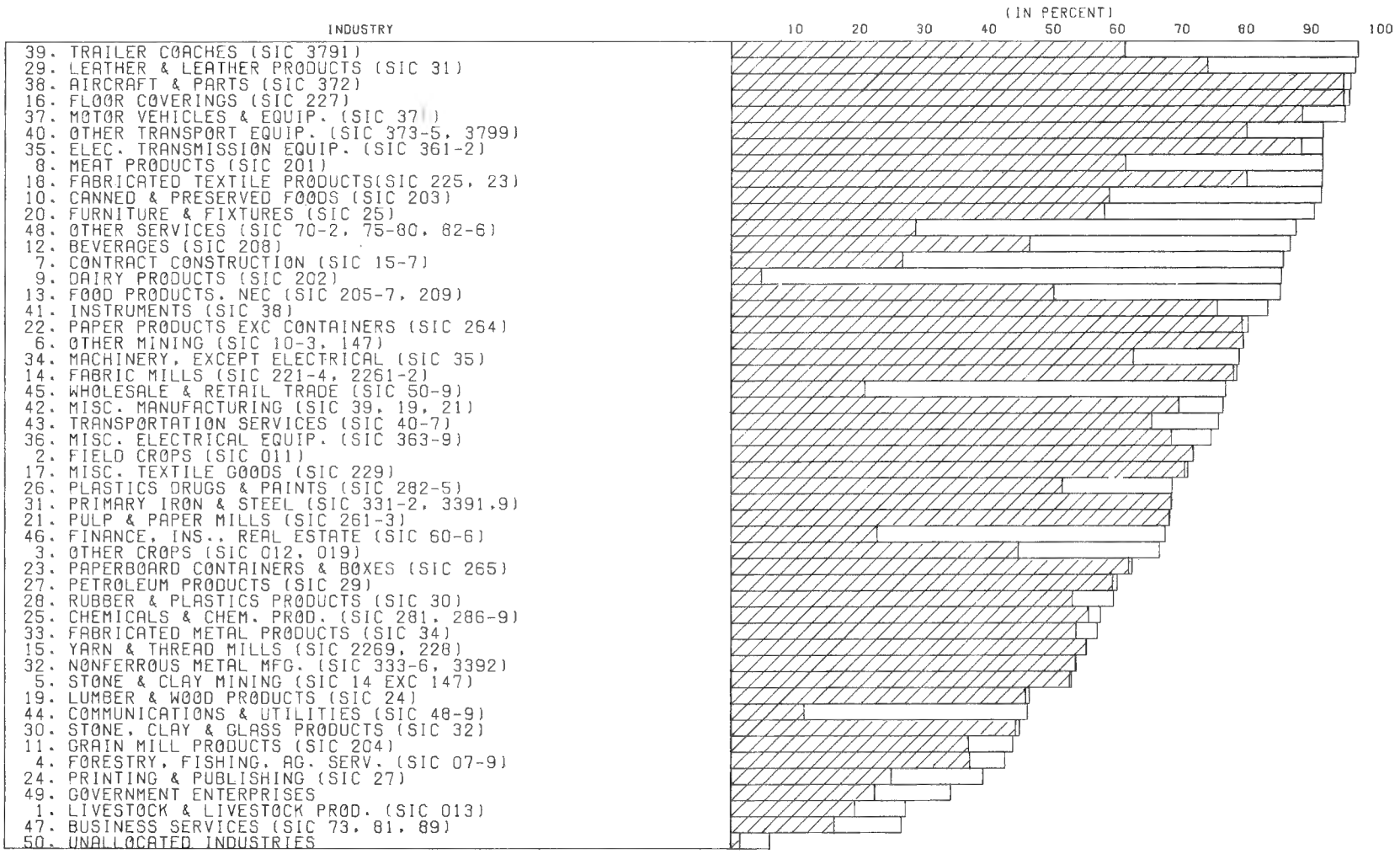
3.3 Final Payments

The final-payments quadrant is identical in size to the final-demand quadrant. It is the ultimate destination of the monies through which the demands of final users are expressed in the economy. We look here at the two largest and most stable components of the quadrant, payments to households and payments for imported intermediate products. Households provide 33 percent of the total inputs of Georgia industries, with payments taking the form of personal income, the largest share of which is wages and salaries. 22 percent of the total inputs of Georgia industries comes from outside the state. Of the remainder, 8 percent is for depreciation, retained earnings and other capital-associated expenses, 4 percent is paid in Federal taxes, 2 percent goes to the state government, and 1 percent goes to local governments.

3.3.1 Importing Industries

Imports into the state are an important part of the input-output model. They are made in exchange for money payments which represent leakages from the economic system. Imports are expressed in the transactions table as a single row which contains the sums of columns in the imports tables. In the transactions table, then, we examine the industries purchasing imported

Chart 3.2c Sales to Total Final Demand as Percent of Gross Output, Georgia, 1970



products; we look at the paths through which leaks in money flows occur, but we do not pursue the causes of the leaks.

Chart 3.3a shows imports as a percent of total inputs for Georgia industries. The unallocated industry leads the list because of its composition. It records purchases and sales of office supplies, travel and business entertainment, and scrap goods. Georgia produces kraft paper, not bond paper, and her citizens travel on many travel lines, frequently to and from business destinations outside the State. Imports by the textile industries reflect raw material and fiber needs. The large imports by nonferrous metal manufacturing show the absence of aluminum and copper refineries in Georgia. The imports by the aircraft industry indicate its functioning in relative isolation from the remainder of the industry; it is primarily a user of labor. The grain mills import enormous quantities of grains to produce feeds for chickens and livestock. And so on. Each industry imports materials from outside the State.

3.3.2 Imported Products

Imports may also be viewed as row sums from the imports tables. In this way, we examine the types of products (or the industries producing the products) imported into Georgia.

Table 3.3a reports the industries producing imported products. The table has been constructed to include imports by both Georgia industries and final consumers in Georgia (who buy 37 percent of all imports). The most imports are of products in the following industries: finance and insurance; plastics, drugs, and paints; motor vehicles and parts; transportation services; machinery; petroleum products; and fabricated metals.

We have also calculated imports as a percent of total sales of each

Chart 3.3a Imports as Percent of Total Inputs, Georgia, 1970

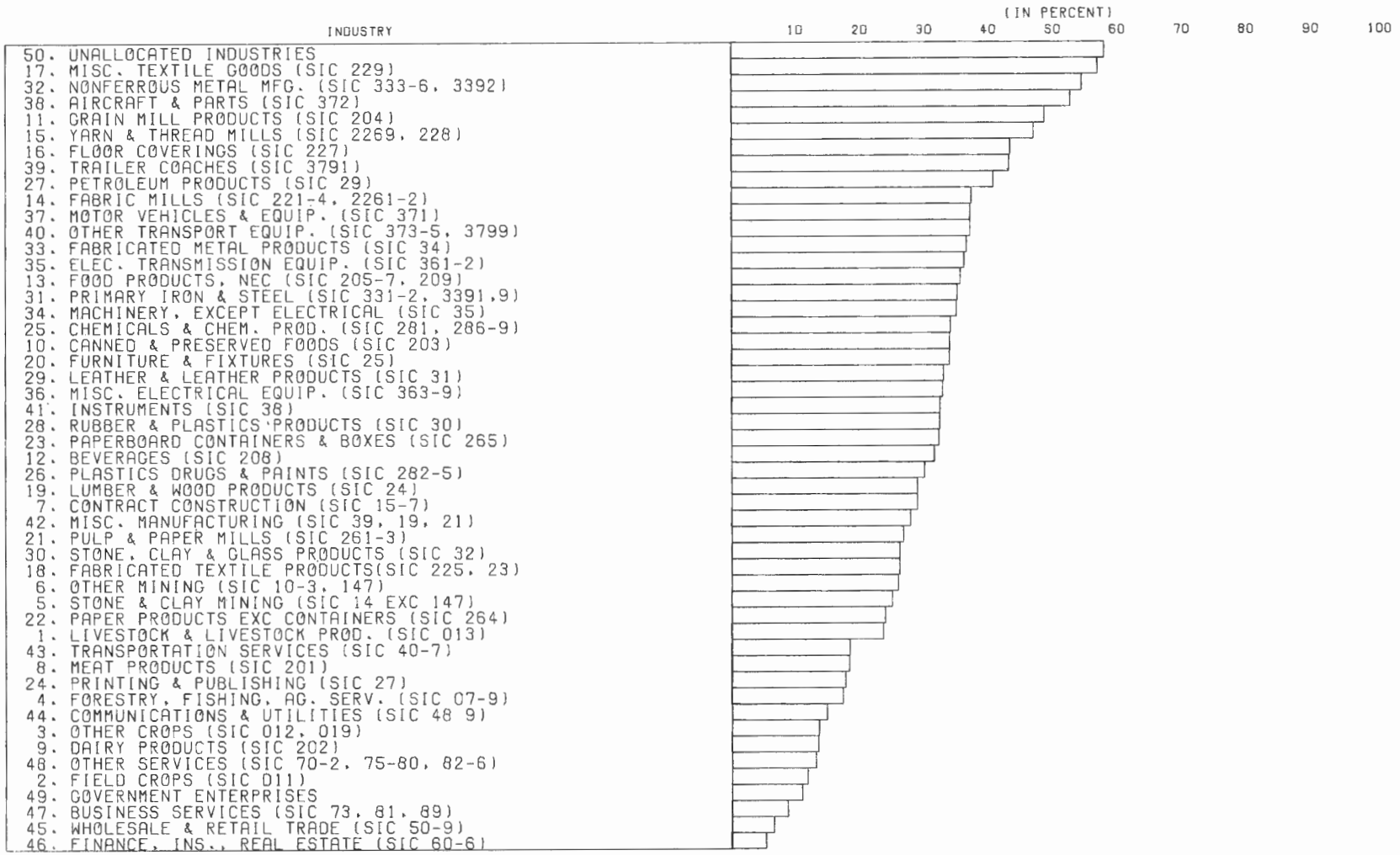


Table 3.3a Imports into Georgia, Classified by Producing Industry, 1970

	PRODUCING INDUSTRY	IMPORTED PRODUCTS IMPORTS	PERCENT OF SALES	PERCENT OF IMPORTS
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	158.2	20.49	1.31
2	FIELD CROPS (SIC 011)	410.9	77.16	3.39
3	OTHER CROPS (SIC 012, 019)	95.5	56.23	.79
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	19.7	14.97	.16
5	STONE & CLAY MINING (SIC 14 EXC 147)	4.8	5.23	.04
6	OTHER MINING (SIC 10-3, 147)	24.9	91.04	.21
7	CONTRACT CONSTRUCTION (SIC 15-7)	195.7	8.67	1.62
8	MEAT PRODUCTS (SIC 201)	288.8	51.42	2.38
9	DAIRY PRODUCTS (SIC 202)	118.7	41.25	.98
10	CANNED & PRESERVED FOODS (SIC 203)	135.6	62.93	1.12
11	GRAIN MILL PRODUCTS (SIC 204)	113.9	40.40	.94
12	BEVERAGES (SIC 208)	169.5	45.44	1.40
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	373.9	55.44	3.09
14	FABRIC MILLS (SIC 221-4, 2261-2)	325.6	59.23	2.69
15	YARN & THREAD MILLS (SIC 2269, 228)	187.5	32.02	1.55
16	FLOOR COVERINGS (SIC 227)	15.4	17.28	.13
17	MISC. TEXTILE GOODS (SIC 229)	211.1	68.70	1.74
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	421.3	65.42	3.48
19	LUMBER & WOOD PRODUCTS (SIC 24)	233.8	46.76	1.93
20	FURNITURE & FIXTURES (SIC 25)	99.9	50.41	.82
21	PULP & PAPER MILLS (SIC 261-3)	111.8	32.64	.92
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	179.0	79.30	1.48
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	120.3	51.78	.99
24	PRINTING & PUBLISHING (SIC 27)	134.4	34.36	1.11
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	181.7	49.23	1.50
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	766.5	83.17	6.33
27	PETROLEUM PRODUCTS (SIC 29)	490.5	96.03	4.05
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	184.6	61.56	1.52
29	LEATHER & LEATHER PRODUCTS (SIC 31)	97.3	82.62	.80
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	160.7	42.49	1.33
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	361.1	90.75	2.98
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	146.2	64.49	1.21
33	FABRICATED METAL PRODUCTS (SIC 34)	446.1	65.97	3.68
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	521.4	76.47	4.30
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	108.6	82.89	.90
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	399.5	87.83	3.30
37	MOTOR VEHICLES & EQUIP. (SIC 371)	762.6	89.37	6.29
38	AIRCRAFT & PARTS (SIC 372)	352.1	82.72	2.91
39	TRAILER COACHES (SIC 3791)	8.0	7.31	.07
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	55.2	84.71	.46
41	INSTRUMENTS (SIC 38)	180.9	89.63	1.49
42	MISC. MANUFACTURING (SIC 39, 19, 21)	279.0	83.63	2.30
43	TRANSPORTATION SERVICES (SIC 40-7)	530.3	53.35	4.38
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	148.1	11.52	1.22
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	91.6	2.33	.76
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	870.1	20.88	7.18
47	BUSINESS SERVICES (SIC 73, 81, 89)	351.5	27.52	2.90
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	330.7	12.97	2.73
49	GOVERNMENT ENTERPRISES	7.5	2.22	.06
50	UNALLOCATED INDUSTRIES	134.1	30.74	1.11
	TOTAL	12116.6	2590.97	100.00

product in the state. This part of the table shows opportunities for import substitution in the state, providing, of course, that conditions are favorable for production in the state. Industries in which large imports take place are: other mining; plastics, drugs, and paints; petroleum products; leather and leather products; primary iron and steel; machinery; miscellaneous electrical equipment; other transportation equipment; instruments; miscellaneous manufacturing; and others.

3.3.3 Household Payments

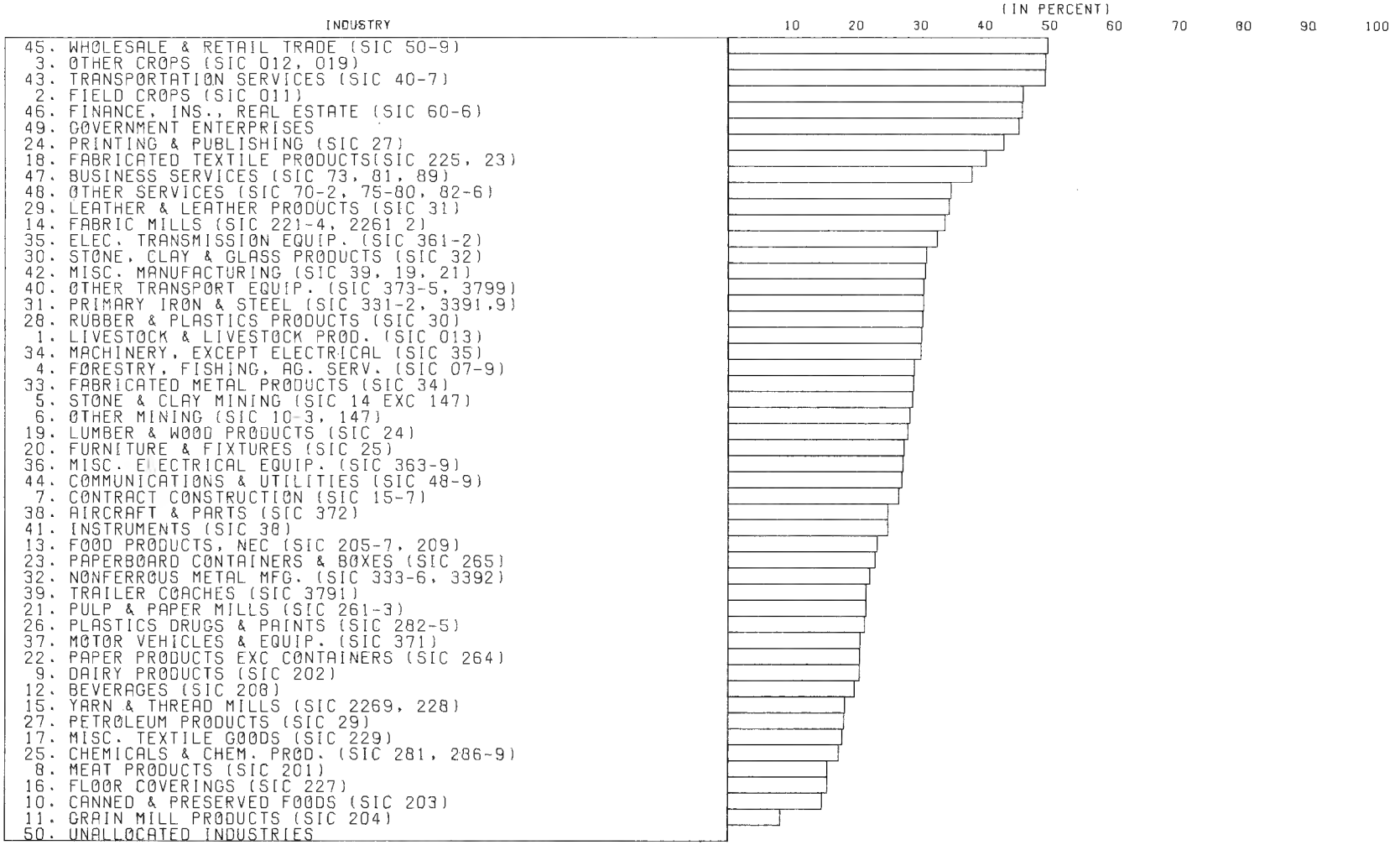
Over 75 percent of personal income originates in private industry, with almost 69 percent of this $11.943 billion being wages and salaries. The remainder takes the form of property income, proprietors' income, other labor income, and wages and salaries of government enterprises.

Chart 3.3b shows payments to households as a percent of total inputs. Trade and transportation services top the list largely due to their nature as margin industries. Their "output" is valued as the markup over producers' prices and a substantial part of this markup is in wages and salaries. The agriculture industries are labor-intensive, as are government enterprises and printing and publishing. The finance, insurance, and real estate industry maintains its high position because a large part of property income is channeled through it. Generally, service-related industries are at the top of the distribution due to their labor-intensive operations, and basic industries are at the bottom of the distribution due to their high output-labor ratios.

3.4 Interindustry Transactions

Of the parts of the Georgia input-output table, the interindustry

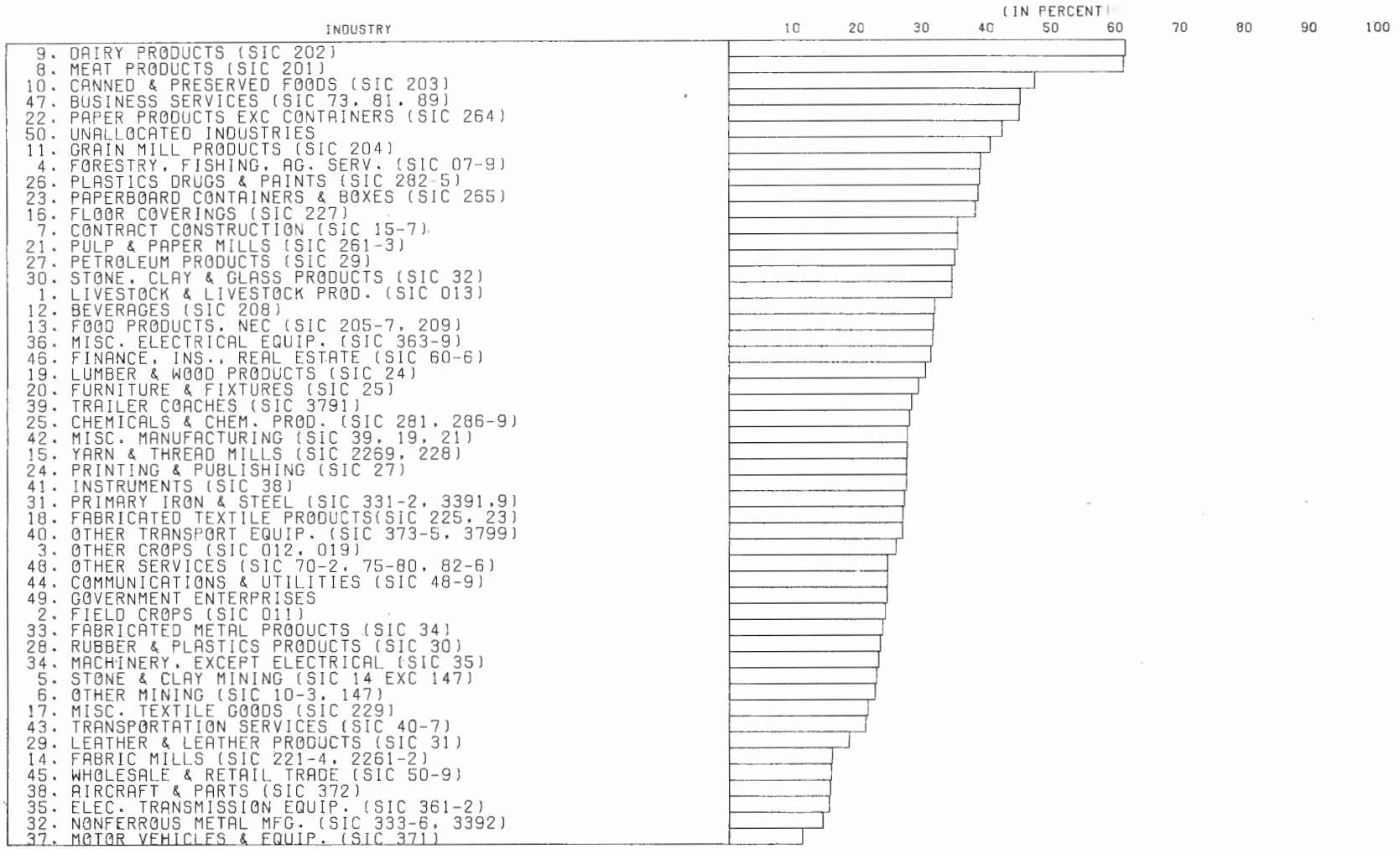
Chart 3.3b Payments to Households as Percent of Total Inputs, Georgia, 1970



quadrant is the largest in size, or number of cells, but it is also the smallest in dollar terms, recording only $9.967 billion in transactions. Out of total purchases and payments made by industries, only 28 percent are from local industries. Nevertheless, this is the most important part of a transactions table in input-output analysis; it is the quadrant through which the interactions between industries are traced. These interactions are reviewed in detail in Chapter 5 after the logic underlying the multiplier concept has been more fully developed.

Chart 3.4a records total local purchases by industries as a percent of total inputs. Elements of the food industry lead the list because of the relatively high value of their agricultural inputs, which cannot easily be transported long distances for processing. Only 16 industries purchase a third or more of their total inputs from other local producers. Notice that many of the producers of "hard" products appear near the bottom of the chart. Motor vehicles, nonferrous metal manufacturing, electric transmission equipment, and aircraft and parts purchase very small amounts of their inputs from other local industries.

Chart 3.4a Total Local Purchases as Percent of Total Inputs, Georgia, 1970



4

THE LOGIC OF INPUT-OUTPUT MODELS

4.1 The Rationale for a Model: Analysis vs. Description

While the Georgia transactions table describes the economy and yields interesting bits of information for a particular point in time, in itself it has no analytic content. That is, it does not permit us to answer questions concerning the reaction of the economy to change. Let the transactions table represent the economy in equilibrium and subject it to a shock, say a cutback in defense expenditures or an increase in tourism. When the repercussions of the shock have moved through the economy, what will be its new "equilibrium position?" In other words, which industries will be larger or smaller and whose income or employment will have changed? Such analysis requires an economic model, which we can now proceed to construct.

4.2 Preparing the Transactions Table: Closing with Respect to Households

As we shall see, it is important to include in the interindustry structure (Quadrant II) all economic activities which make buying decisions primarily on the basis of their incomes. These activities are called endogenous since their behavior is determined within the system. Other activities, such as federal government expenditures or exports, are based on decisions made outside the system and so are called exogenous activities. Activities which are labeled "industries" are normally considered endogenous

and those which are labeled "final-demand sectors" are normally considered to be exogenous. But sometimes it is not so easy to classify activities.

The household sector is a case in point. While traditionally classified as a final-demand sector, it is frequently treated in regional economic models as an "industry." Households sell labor, managerial skills, and privately owned resources; they receive in payment wages and salaries, dividends, rents, proprietors' income, etc. And to produce these resources, they buy food, clothing, automobiles, housing, services, and other consumer goods. Exceeded in total expenditures only by the manufacturing sector, the household sector is obviously a critical part of the Georgia economy. So we move the household row and column into the interindustry part of the transactions table and treat households as another industry in the Georgia Economic Model. Using the aggregated transactions table (2.2a) as an illustration, the household sector becomes the sixth "industry" in the aggregated model.

The state and local government sectors (included in "other final demand" and "other final payments" in our aggregated table) also are difficult to classify. While we leave them in the exogenous part of the table now, primarily for simplicity, they are included in the endogenous part of the table in the detailed forecasting model.

4.3 The Economic Model

An economic model is based on three sets of relations: (1) definitions or identities, (2) technical or behavioral conditions, and (3) equilibrium conditions. A model thus is an extension of a description of an economy through a set of assumptions such that it can be used to trace the

effects of disequilibrating forces. Each set of relations can be easily identified in the Georgia Economic Model.

4.3.1 Identities: the Transactions Table

The state transactions table as extended above (in 4.2) provides our set of identities: it defines the economy of Georgia in 1970. Now let's express these relations in simple algebra. Let x_{ij} be the sales of industry $\underline{i}$ to industry $\underline{j}$, y_i the sales of industry $\underline{i}$ to final demand (ultimate consumers), and x_i the total sales of industry $\underline{i}$. Then we can define the sales of Georgia industries in terms of the following equations:

$$x_{11} + x_{12} + x_{13} + x_{14} + x_{15} + x_{16} + y_1 = x_1$$

$$x_{21} + x_{22} + x_{23} + x_{24} + x_{25} + x_{26} + y_2 = x_2$$

$$x_{31} + x_{32} + x_{33} + x_{34} + x_{35} + x_{36} + y_3 = x_3$$

$$x_{41} + x_{42} + x_{43} + x_{44} + x_{45} + x_{46} + y_4 = x_4$$

$$x_{51} + x_{52} + x_{53} + x_{54} + x_{55} + x_{56} + y_5 = x_5$$

$$x_{61} + x_{62} + x_{63} + x_{64} + x_{65} + x_{66} + y_6 = x_6$$

This set of identities can be seen symbolically in the top six rows of Figure 4.3a and numerically in the five industry rows and in the household row (now "industry" 6) of the Georgia transactions table (Table 2.2a). Since we are now primarily concerned with Quadrant II, we have reduced Quadrant I to one column in these tables and we have dropped the various intermediate totals.

As can be seen, Figure 4.3a and the above set of equations differ in only two ways: (1) the arithmetic operators are implicit in the table; and (2) the table includes values for other final payments (v_j) and imports (m_j), completing the accounting framework.

Figure 4.3a Algebraic Transactions Table

Purchasing industry → / Selling industry ↓	Agriculture, mining (1)	Construction (2)	Manufacturing (3)	Trade (4)	Services (5)	Households (6)	Final demand	Total outputs
Agriculture, mining (1)	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	y_1	x_1
Construction (2)	x_{21}	x_{22}	x_{23}	x_{24}	x_{25}	x_{26}	y_2	x_2
Manufacturing (3)	x_{31}	x_{32}	x_{33}	x_{34}	x_{35}	x_{36}	y_3	x_3
Trade (4)	x_{41}	x_{42}	x_{43}	x_{44}	x_{45}	x_{46}	y_4	x_4
Services (5)	x_{51}	x_{52}	x_{53}	x_{54}	x_{55}	x_{56}	y_5	x_5
Households (6)	x_{61}	x_{62}	x_{63}	x_{64}	x_{65}	x_{66}	y_6	x_6
Other final payments	v_1	v_2	v_3	v_4	v_5	v_6	(v_d)	v
Imports	m_1	m_2	m_3	m_4	m_5	m_6	$-m$	0
Total inputs	x_1	x_2	x_3	x_4	x_5	x_6	y	

4.3.2 Technical Conditions: the Direct-Requirements Table

Now, say that we have estimated what final demand will be at some later date (y_1', y_2', y_3', y_4', y_5', y_6') and that we wish to identify the effect of this demand on the economy. We would like to know the gross outputs of industries (that is, the values of x_1' through x_6') in Georgia at that time. It is obvious that little additional information can be gleaned from the transactions table. We have six equations and 48 variables, of which only six (the y's) now have assigned values. The minimum requirement for a solution to this system is that the number of equations equals the number of unknowns; therefore, we must reduce the number of unknown variables by 42.

To do this, we introduce a set of technical conditions. Assume that the pattern of purchases identified in 1970 is stable. We can now define a set of values called "direct requirements," or "production coefficients:"

$$a_{ij} = \frac{x_{ij}}{x_j}$$

Table 4.3a records these a_{ij} coefficients for the aggregated Georgia model. We have simply divided each value in a column by the total inputs (output) of the industry represented in the column. These numbers show the proportions in which the establishments in each industry combine the goods and services which they purchase to produce their own products.

Notice that we can define x_{ij}, the sales by industry $\underline{i}$ to industry $\underline{j}$, in another way. It can be written as $x_{ij} = a_{ij} \cdot x_j$. That is, if the manufacturing sector purchases 6.1 percent of its inputs from the service sector (a_{53}), and if manufacturing purchases a total of \$14,162 million worth of inputs (x_3), then its purchases from the service sector would have to amount to \$862 million, or 6.1 percent of \$14,162 million. If the proportions in

Table 4.3a Direct Requirements of Georgia Industries, 1970

(in percent)

		Buying Industries					
		Agriculture, mining (1)	Construction (2)	Manufacturing (3)	Trade (4)	Services (5)	Households (6)
Selling Industries	Agriculture, mining (1)	10.9	1.2	4.2	.1	.6	.6
	Construction (2)	.8	*	.3	.3	2.6	0
	Manufacturing (3)	8.5	16.4	9.8	2.3	3.1	8.0
	Trade (4)	3.1	8.9	3.7	1.5	2.3	16.2
	Services (5)	6.1	8.8	6.1	11.6	17.5	26.9
	Households (6)	35.5	26.4	26.1	49.5	40.6	.6
	Total local purchases	64.9	61.7	50.2	65.3	66.8	52.3
	Other payments	15.6	9.6	11.5	28.3	21.2	23.9
	Imports	19.4	28.7	38.3	6.4	12.1	23.8
	Total inputs	100.0	100.0	100.0	100.0	100.0	100.0

* Less than .05.

which industries buy their inputs remain reasonably stable over time, then we can define purchases by industry $\underline{i}$ from industry $\underline{j}$ in the future as $x_{ij} = a_{ij} \cdot x'_j$. As we shall see, this simple assumption solves our problem.

4.3.3 Equilibrium Condition: Supply Equals Demand

Note that along the way we have implicitly stated the equilibrium condition. This condition is that anticipated demand equals supply, or that the gross output of an industry equal its sales (in algebra, $x_j = x_i$, where $\underline{i} = \underline{j}$). Over any long period of time in a market economy, it is irrational to produce more than is used and impractical to consume more than is produced. Under normal conditions, an economy faced with a change in demand will react by changing supply. When anticipations are fulfilled, the economy is in a state of equilibrium.

4.3.4 Solution to the System: The Total-Requirements Table

Since we assume the production coefficients to be stable over time, we can rewrite the equation system to apply to a later period by substituting y'_i for y_i, x'_i for x_i, and $x'_{ij} = a_{ij} \cdot x'_j$ for x_{ij} in each of our equations:

$$a_{11} \cdot x'_1 + a_{12} \cdot x'_2 + a_{13} \cdot x'_3 + a_{14} \cdot x'_4 + a_{15} \cdot x'_5 + a_{16} \cdot x'_6 + y'_1 = x'_1$$

$$a_{21} \cdot x'_1 + a_{22} \cdot x'_2 + a_{23} \cdot x'_3 + a_{24} \cdot x'_4 + a_{25} \cdot x'_5 + a_{26} \cdot x'_6 + y'_2 = x'_2$$

$$a_{31} \cdot x'_1 + a_{32} \cdot x'_2 + a_{33} \cdot x'_3 + a_{34} \cdot x'_4 + a_{35} \cdot x'_5 + a_{36} \cdot x'_6 + y'_3 = x'_3$$

$$a_{41} \cdot x'_1 + a_{42} \cdot x'_2 + a_{43} \cdot x'_3 + a_{44} \cdot x'_4 + a_{45} \cdot x'_5 + a_{46} \cdot x'_6 + y'_4 = x'_4$$

$$a_{51} \cdot x'_1 + a_{52} \cdot x'_2 + a_{53} \cdot x'_3 + a_{54} \cdot x'_4 + a_{55} \cdot x'_5 + a_{56} \cdot x'_6 + y'_5 = x'_5$$

$$a_{61} \cdot x'_1 + a_{62} \cdot x'_2 + a_{63} \cdot x'_3 + a_{64} \cdot x'_4 + a_{65} \cdot x'_5 + a_{66} \cdot x'_6 + y'_6 = x'_6 .$$

The prime applied to each variable indicates "future" value. The power of our assumption that the technology of production is constant is now clear. With it, we have reduced the number of unknowns from 48 to six, the x'_i's,

and can proceed to solve the system and thus to determine the outputs of Georgia industries in the future.

A full explanation of the solution to this system requires more technical knowledge than this elementary discussion assumes. The solution is computed in terms of matrix algebra and, in this case, is analogous to one in simple algebra which can be easily understood. Say we wish to solve the following equation for $\underline{x}$:

$$x = a \cdot x + y \quad .$$

We subtract $a \cdot x$ from both sides of the equation,

$$x - a \cdot x = y \quad ,$$

factor $\underline{x}$ from the terms on the left,

$$x(1 - a) = y \quad ,$$

and divide both sides by $(1 - a)$ to get

$$x = y/(1 - a) \quad ,$$

the solution for $\underline{x}$ in terms of $\underline{y}$. Now if we visualize $\underline{x}$ as the column vector of total sales in Figure 4.3a, $\underline{y}$ as the column vector of final demand, and $\underline{a}$ as the table of a_{ij}'s computed above, then we can write an analogous solution to our system of equations:

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

Here, $\underline{I}$ is the identity matrix, which is the matrix equivalent to the number $\underline{1}$, and the exponent (-1) shows that the parenthetic expression is inverted, or divided into another identity matrix. The term $(I - a)$ is sometimes called the "Leontief matrix" in recognition of Wassily Leontief, the originator of input-output economics; $(I - a)^{-1}$, of course, is called the "Leontief inverse." A more descriptive title is "total-requirements table."

Table 4.3b shows the total-requirements matrix for the aggregated

Table 4.3b Total Requirements per Dollar of Delivery to Final Demand, Georgia, 1970

		Delivering industries					
		Agriculture, mining (1)	Construction (2)	Manufacturing (3)	Trade (4)	Services (5)	Households (6)
Supporting industries	Agriculture, mining (1)	1.14	.03	.06	.02	.02	.02
	Construction (2)	.02	1.01	.01	.02	.04	.01
	Manufacturing (3)	.19	.26	1.18	.12	.13	.15
	Trade (4)	.17	.21	.14	1.16	.17	.25
	Services (5)	.35	.35	.28	.43	1.49	.50
	Households (6)	.69	.60	.52	.80	.75	1.38
Total output		2.54	2.46	2.19	2.55	2.60	2.32

model of Georgia. Each entry shows the purchases from the industry named on the left by the industry numbered across the top for each dollar of delivery to final demand. To illustrate the use of Table 4.3b, let us assume that the demand for the output of the manufacturing sector increases by 100 dollars. If the economy is to satisfy this demand, the gross output of the agriculture and mining sector must increase by $6, of the construction sector by $1, of the manufacturing sector itself by an additional $18, of the trade sector by $14, of the service sector by $28, and of households by $52. These estimates are obtained by multiplying column 3 in Table 4.3b by $100. The total change in output in the economy is $219.

Now that we have developed the logic of a state input-output model and can see that it is a means for tracing the effects on local industries of changes in the economy, let us go back and examine the effect of closing the model with respect to households (4.2). Recall that we have included the household sector as the sixth industry in the model. Under these conditions, the total-requirements table traces the flows of goods and services required to accommodate changes in final demand through all industries and through households as well. What if the household sector had been left in final demand? What if we had continued to treat it as exogenous to the system rather than endogenous?

Table 4.3c reports a total-requirements table which is based on a five-industry version of Table 4.3a, the direct-requirements matrix. Examination of the column sums in the rows entitled "total output" in each table reveals the importance of the household sector in generating new activity in the economy. Table 4.3d compares these tables. Just including the household sector in the inverted table leads to increases in output by

Table 4.3c Total Requirements per Dollar of Delivery to Final Demand, Georgia, 1970 (Based on Interindustry Transactions excluding Households)

		Delivering Industry				
		Agriculture, mining (1)	Construction (2)	Manufacturing (3)	Trade (4)	Services (5)
Supporting Industry	Agriculture, mining (1)	1.13	.02	.05	*	.01
	Construction (2)	.01	1.01	.01	.01	.03
	Manufacturing (3)	.11	.19	1.12	.03	.05
	Trade (4)	.04	.10	.05	1.02	.03
	Services (5)	.10	.14	.09	.15	1.23
Total output		1.40	1.46	1.32	1.21	1.35

*: Less than .005.

Table 4.3d Comparison of Total Requirement Matrices Excluding and Including the Household Sector

Delivering industry	Total requirements: Processing industries only (Table 4.3c) (1)	Total requirements: Processing industries only (Table 4.3b) (2)	Percent increase due to households (3)	Total requirements including households (Table 4.3c) (4)	Total percent increase due to households (5)
Agriculture, mining	1.40	1.85	32	2.54	81
Construction	1.46	1.86	27	2.46	68
Manufacturing	1.32	1.67	27	2.19	66
Trade	1.21	1.75	45	2.55	111
Services	1.35	1.85	37	2.60	93
Households	-	1.22	-	2.32	-

Sources:

Column (1): Column sums, Table 4.3c.
Column (2): Column sums, Table 4.3b less household row entries.
Column (3): Column (2) divided by Column (1), less one, and expressed as a percent.
Column (4): Column sums, Table 4.3c.
Column (5): Column (4) divided by Column (1), less one, and expressed as a percent.

the processing industries (1 through 5) of 27 to 45 percent. When we include households as an industry and count the flows through it as output, the percent increase in output rises to from 66 to 111 percent of the flows based on a table excluding households. As we shall see later in a more detailed discussion of multipliers, income flows induced by households are important to an input-output analysis.

4.3.5 Summary and Transition

This section has been intended to show the logic of economic models and to demonstrate how each of the tables through which an input-output model appears is developed. The state transactions table, seen here as Table 2.2a, is presented as Table I in the more detailed formulations of the model. The direct-requirements table, here Table 4.3a, becomes Table II. In the detailed model, Table III is the total-requirements table excluding households, here Table 4.3c; it shows the direct and indirect requirements from other industries for each dollar of delivery to final demand. The final detailed table, Table IV, is the total-requirements table with the household sector included as an industry, here Table 4.3b; it shows the direct, indirect, and induced requirements per dollar of delivery to final demand. "Induced" means caused by household consumption; it is a term used to distinguish Table IV, the extended inverse, from Table III, which more conservatively includes only clearly identified processing industries.

4.4 Economic Change in Input-Output Models

4.4.1 Causes vs. Consequences of Change

An input-output model is designed to trace the effects of changes in an economy which has been represented in an input-output table. Such models show the consequences of change in terms of flows of monies through an

economy and in terms of incomes generated for primary resource owners. The models themselves do not show the causes of change; these causes are exogenous to the system.

Economic change as traced through an input-output model can take two forms: (1) structural change or (2) change in final demand. Changes in the economic structure of an area (state) can be initiated in several ways. It can be through public investment in schools, highways, public facilities, etc., or it can be through private investment in new production facilities, or it can be through changes in the marketing structure of the economy. Changes in final demand are basically changes in government expenditure patterns and changes in the demands by other areas for the goods produced in the state.

4.4.2 Structural Change

Structural change in an input-output context can be interpreted to mean "changes in regional production coefficients." In turn, this can be interpreted as either changes in technology or changes in marketing patterns or both. Let us see what this means in terms of the direct-requirements matrix, or the $\underline{a}$ matrix of our earlier discussion (4.3.2). Recall that a_{ij} is the proportion of total inputs purchased from industry $\underline{i}$ by industry $\underline{j}$ in Georgia. We can treat this regional production coefficient as the product of two other coefficients and write it symbolically as $a_{ij} = p_{ij} \cdot r_{ij}$. The "technical production coefficient," p_{ij}, shows the proportion of inputs purchased from industry $\underline{i}$ by industry $\underline{j}$ without regard to the location of industry $\underline{i}$, while the "regional trade coefficient," r_{ij}, shows the proportion of that purchase made in Georgia.

A change in technology, or a change in p_{ij}, could be illustrated by a shift from glass bottles to metal cans by the soft-drink industry. But a

change in location of purchase, or a change in r_{ij}, would be illustrated by a shift from metal cans made in Baltimore to metal cans produced in Atlanta.

The above changes are couched in terms of existing industries. Another way in which change can take place is through the introduction of new plants or even new industries. The introduction of a new plant into an existing industry has the effect of changing the production and trade patterns of the aggregated industry to reflect more of the transactions specific to the detailed industry of which the new plant is a member. For example, consider the manufacturing sector of our highly aggregated five-industry model. As presented, it reflects the combination of all manufacturing activities in Georgia in 1970. The introduction of new plants in the transportation-equipment industry would change the combination of purchases presently made in the manufacturing sector. The same statement might be made concerning the purchase pattern displayed by the transportation-equipment industry if a new aircraft-producing plant were established (or an old one were to cease operation).

The addition of a completely new industry to the system means adding another row and column to the interindustry table to represent the new industry. This is done in a manner similar to that involved in closing the table with respect to households.

To account for structural changes which are caused by changes in technology or in marketing requires a revision of the interindustry flows table and is best accomplished when a biennial revision is made.

To account for structural changes which are caused by addition of new plants in either old or new industries, we have programmed a "development simulator" which is presented in Chapter 8.

4.4.3 Changes in Final Demand

Accounting for structural changes in an input-output model requires substantial skill and familiarity with the mechanics of the model on the part of the analyst. This is not the case when accounting for the effects of changes in final demand. It can easily be accomplished with the inverse matrix, or the total-requirements table, Table 4.3b in this chapter or Table IV in the detailed model.

Two kinds of changes can be traced. One form is a set of long-run changes in the demands for the outputs of all industries. This set takes the form of the y_i' vector discussed in section 4.3 above and represents our best judgment of the export demands for the products of our industries in some later year, say 1980. Using the formula

$$x_i' = (I - a)^{-1} \cdot y_i',$$

we can easily derive projections of the expected gross outputs (x_i') of industries in the later year. This process is discussed in more detail in Chapter 6, which outlines our forecasting model.

The other form which change in final demand might take is an assumed change in the final demand for the output of one industry. Say we wish to know the effect on the economy of a $100,000 change in the demand for floor coverings. We would simply go to the detailed 50-industry tables and look for the column sum for the floor-covering industry in Table IV, the total-requirements matrix. This entry is 2.2234; multiplied by $100,000, it shows that these additional sales of carpets outside of Georgia would increase the outputs of Georgia industries by a total of $222,340. A look at the household row in that same column would have yielded a household-income coefficient of .4136, meaning that the additional carpet sales would have

increased local household incomes by $41,360.

The example can be pursued on a more gross level by looking at Table 4.3b and assuming a $100,000 increase in the output of the manufacturing sector. As pointed out in section 4.3.4, the output multiplier in manufacturing is 2.19, meaning that the $100,000 change in export demand yields $219,000 in additional business to Georgia firms. The household-income coefficient of .52 means that household incomes increase by $52,000. The differences between these figures and those in the above paragraph show the consequences of aggregation, which conceals a substantial amount of variation in the detailed tables.

We discuss the multiplier model in more detail in Chapters 5 and 8.

5

ECONOMIC MULTIPLIERS FOR GEORGIA INDUSTRIES

5.1 Introduction

As noted in Chapter 4, the Georgia Economic Model can be treated as a multiplier model to trace the effects of changes in demand on economic activity in the State. After explaining more graphically the multiplier concept, this chapter presents employment, household-income, and government-income multipliers for Georgia and explores the contributions of Georgia industries to income and output.

5.2 The Multiplier Concept

As pointed out in Chapter 4, the input-output model can be used to trace individual changes in final demand through the economy over short periods of time. In this function, it is called an impact model, or a multiplier model. A total-requirements table for the aggregated 6-industry model was presented in Table 4.3b. This table shows the direct, indirect, and induced changes in industry outputs required to deliver units to final demand. A table of this type is the key to all of the multipliers developed in this study.

To better understand the meaning of a total-requirements table, and the multipliers derived from it, let us trace through Table 4.3b the flow of outputs induced by a $100 purchase from the manufacturing sector. The result of this step-by-step tracing is illustrated in Figure 5.2a. First,

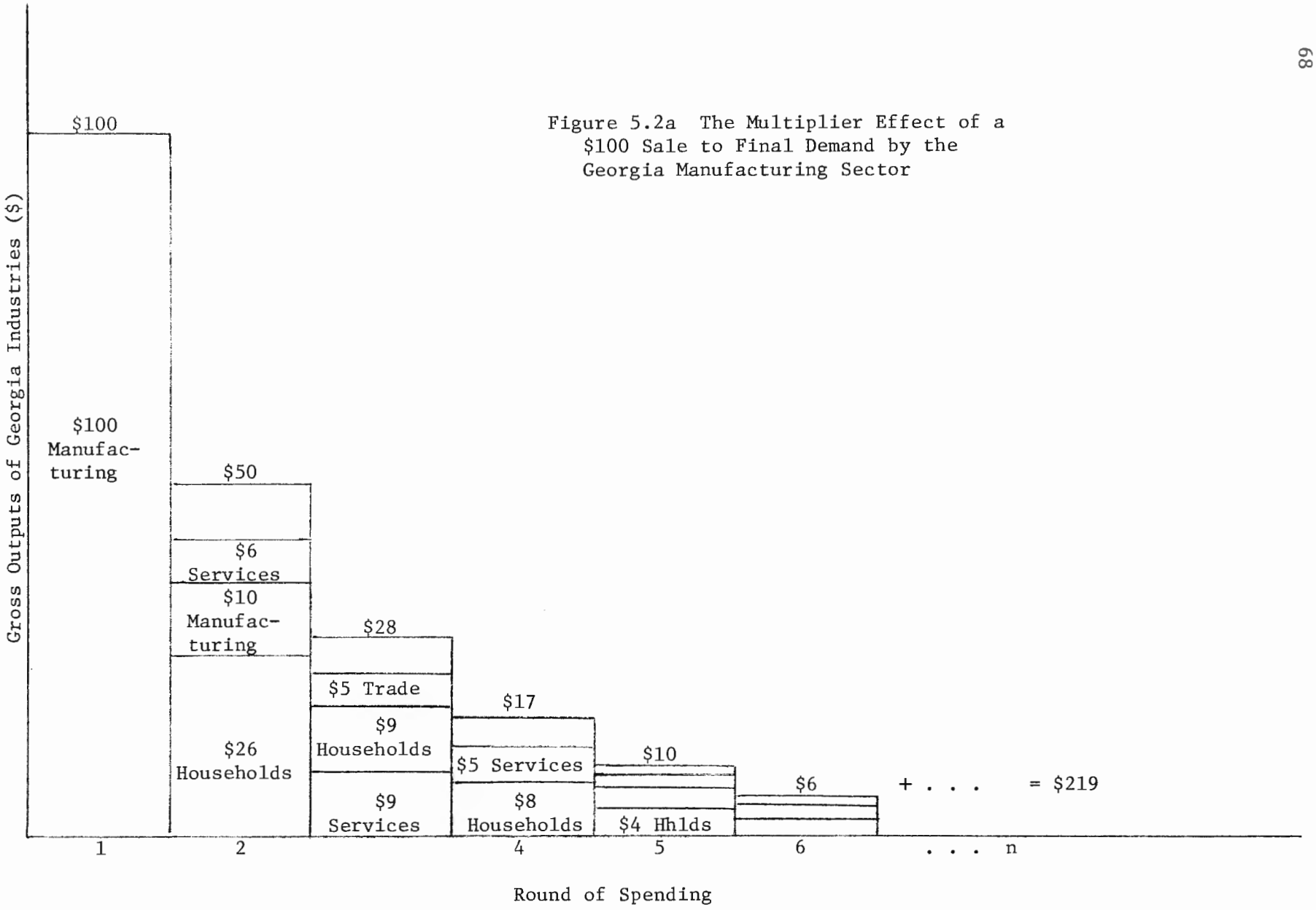


Figure 5.2a The Multiplier Effect of a $100 Sale to Final Demand by the Georgia Manufacturing Sector

$100 enters the state economy through manufacturing. To produce output worth $100, firms in manufacturing purchase inputs from other industries in the economy. According to column 3 in Table 4.3a, the direct-requirements table, $4.20 goes to agriculture and mining, $0.30 goes to construction, an additional $9.80 goes to other firms in manufacturing, $3.70 goes to trade, $6.10 goes to services, and $26.10 is paid to households in wages and salaries. Capacity permitting, each of these industries must expand its output to accommodate this additional production load. Thus, in producing additional output valued at $4.20, firms in agriculture and mining buy output worth $0.46 (10.9% of $4.20) from others in this sector, $0.03 (0.8% of $4.20) from construction, $0.36 (8.5% of $4.20) from manufacturing, and so on, for a total of $2.72. At the same time, each of the other industries is purchasing the additional inputs required to produce the output requested of them. The results are summarized in Figure 5.2a as the third round of purchases. Other purchases follow in succeeding rounds, each smaller as money flows out of the interindustry sector into the hands of the owners of primary inputs (excluding labor), into government coffers, and for the purchase of imported materials. This chain of purchases continues for all industries until the economy is again in equilibrium. The initial $100 purchase from manufacturing has led to the production of additional output by the entire State economy valued at $219, as shown in Figure 5.2a. Notice that if the value of additional output is summed through round six, most of the effect of the initial purchase has already been realized: $210 has been spent at this point. The total-requirements table just counts the rounds of spending to infinity and adds them up. The total appears in Table 4.3b as column sum, and is called an "output multiplier."

Each of the multipliers in the remainder of this chapter is a variation on this theme.

5.3 Output and Employment Multipliers

Table 5.3a presents output and employment multipliers for industries in Georgia. The simple multipliers should be interpreted as lower limits since they exclude any of the effects induced by incomes circulating through households. The total multipliers are based on an inverse matrix of the same kind as Table 4.3b, which was discussed in the last section; they can be interpreted as upper limits and, we feel, are reasonably close to the actual effects of changes in final demand.

Interestingly, the output multipliers are highest for the industries which we have little power to influence and which do not export extensively: dairy products; business services; and finance, insurance and real estate. These industries are supporting industries in Georgia. In contrast, the output multipliers are low for many industries producing for export. Motor vehicles and aircraft and parts are good examples; their positions on the list are probably due to the small amounts of local inputs, excepting labor, used in their production processes. As comparison of the simple and total output multipliers shows, a large labor input from the household sector can be important in increasing the multiplier for industries with low inter-industry purchases in the economy.

Employment multipliers are output multipliers which have been converted to an employment base through the use of employee/output ratios. These multipliers are to be interpreted as showing the number of jobs created by a $10,000 export in their industry. The employment multiplier

Table 5.3a Output and Employment Multipliers for Georgia Industries, 1970

INDUSTRY	EMPLOYMENT MULTIPLIERS SIMPLE	EMPLOYMENT MULTIPLIERS TOTAL	OUTPUT MULTIPLIERS SIMPLE	OUTPUT MULTIPLIERS TOTAL
1 LIVESTOCK & LIVESTOCK PROD. (SIC 013)	-*	-*	1.51	2.56
2 FIELD CROPS (SIC 011)	-*	-*	1.35	2.73
3 OTHER CROPS (SIC 012, 019)	-*	-*	1.37	2.84
4 FORESTRY, FISHING, AG. SERV. (SIC 07-9)	-*	-*	1.56	2.69
5 STONE & CLAY MINING (SIC 14 EXC 147)	.43	.58	1.31	2.25
6 OTHER MINING (SIC 10-3, 147)	.37	.51	1.31	2.22
7 CONTRACT CONSTRUCTION (SIC 15-7)	.54	.70	1.49	2.53
8 MEAT PRODUCTS (SIC 201)	.30	.46	1.92	2.94
9 DAIRY PRODUCTS (SIC 202)	.32	.50	1.96	3.11
10 CANNED & PRESERVED FOODS (SIC 203)	.38	.52	1.68	2.57
11 GRAIN MILL PRODUCTS (SIC 204)	.26	.35	1.59	2.18
12 BEVERAGES (SIC 208)	.30	.43	1.46	2.27
13 FOOD PRODUCTS, NEC (SIC 205-7, 209)	.41	.55	1.47	2.36
14 FABRIC MILLS (SIC 221-4, 2261-2)	.58	.73	1.21	2.15
15 YARN & THREAD MILLS (SIC 2269, 228)	.34	.45	1.38	2.07
16 FLOOR COVERINGS (SIC 227)	.35	.46	1.52	2.22
17 MISC. TEXTILE GOODS (SIC 229)	.33	.44	1.29	1.95
18 FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	.85	1.05	1.35	2.58
19 LUMBER & WOOD PRODUCTS (SIC 24)	.61	.76	1.43	2.43
20 FURNITURE & FIXTURES (SIC 25)	.63	.78	1.40	2.36
21 PULP & PAPER MILLS (SIC 261-3)	.31	.44	1.51	2.36
22 PAPER PRODUCTS EXC CONTAINERS (SIC 264)	.51	.66	1.65	2.57
23 PAPERBOARD CONTAINERS & BOXES (SIC 265)	.40	.55	1.57	2.48
24 PRINTING & PUBLISHING (SIC 27)	.53	.73	1.40	2.70
25 CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	.32	.43	1.39	2.07
26 PLASTICS, DRUGS & PAINTS (SIC 282-5)	.40	.54	1.55	2.44
27 PETROLEUM PRODUCTS (SIC 29)	.38	.51	1.49	2.30
28 RUBBER & PLASTICS PRODUCTS (SIC 30)	.44	.59	1.32	2.27
29 LEATHER & LEATHER PRODUCTS (SIC 31)	.70	.86	1.26	2.28
30 STONE, CLAY & GLASS PRODUCTS (SIC 32)	.53	.71	1.47	2.57
31 PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	.39	.55	1.37	2.37
32 NONFERROUS METAL MFG. (SIC 333-6, 3392)	.27	.38	1.19	1.85
33 FABRICATED METAL PRODUCTS (SIC 34)	.40	.55	1.32	2.23
34 MACHINERY, EXCEPT ELECTRICAL (SIC 35)	.42	.57	1.31	2.25
35 ELEC. TRANSMISSION EQUIP. (SIC 361-2)	.46	.61	1.21	2.15
36 MISC. ELECTRICAL EQUIP. (SIC 363-9)	.35	.50	1.41	2.35
37 MOTOR VEHICLES & EQUIP. (SIC 371)	.23	.33	1.15	1.75
38 AIRCRAFT & PARTS (SIC 372)	.27	.39	1.21	1.97
39 TRAILER COACHES (SIC 3791)	.37	.50	1.39	2.17
40 OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	.68	.83	1.36	2.34
41 INSTRUMENTS (SIC 38)	.42	.56	1.38	2.26
42 MISC. MANUFACTURING (SIC 39, 19, 21)	.60	.76	1.38	2.39
43 TRANSPORTATION SERVICES (SIC 40-7)	.71	.93	1.29	2.72
44 COMMUNICATIONS & UTILITIES (SIC 48-9)	.39	.53	1.34	2.26
45 WHOLESALE & RETAIL TRADE (SIC 50-9)	.78	.99	1.23	2.60
46 FINANCE, INS., REAL ESTATE (SIC 60-6)	.29	.53	1.45	2.95
47 BUSINESS SERVICES (SIC 73, 81, 89)	.60	.83	1.64	3.06
48 OTHER SERVICES (SIC 70-2, 75-80, 82-6)	.53	.71	1.35	2.46
49 GOVERNMENT ENTERPRISES	-*	-*	1.35	2.70
50 UNALLOCATED INDUSTRIES	-*	-*	1.59	2.10
51 HOUSEHOLDS	-*	-*	-*	-*

* Not calculated.

is highest in the fabricated textile products industry (mostly apparel) and lowest in the motor vehicle industry. Generally, the more labor-intensive an industry, the higher the multiplier.

An interesting aside involves the average output multiplier computed as the ratio of total output to exogeneous final demand. The average simple multiplier is 1.38 when computed as total industry output divided by total final demand ($35,961.6b/$25,995.1b); it is 1.42 when computed as an average of simple multipliers. The average total multiplier is 2.48 when computed with the household sector treated as an industry ($44,160.9b/$17,795.8b); it is 2.40 when computed as an average of total multipliers.

5.4 Household-Income Multipliers

The household-income multipliers shown in Table 5.4a relate changes in household income in the economy to changes in final demand. That is, each multiplier shows the total amount of household income that results from an additional dollar of sales to final demand by its industry. The multipliers are derived in three steps, which are represented by the first three columns in Table 5.4a.

The first column, showing the direct income created, is simply the wages and salaries, proprietors' income, etc., paid to households by an industry in producing additional goods or services worth one dollar for final sales. The indirect income represents the payments to households resulting from the purchase of goods and services from other industries necessary to produce the additional output. The third column, or induced income, reports the income that is generated in the economy by households spending the additional income they receive from the increased sales to final demand.

Table 5.4a Income Generated by Final Sales, Georgia, 1970

	INDUSTRY	INCOME CREATED PER DOLLAR OF FINAL SALES DIRECT	INDIRECT	INDUCED	TOTAL
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	.30	.14	.17	.62
2	FIELD CROPS (SIC 011)	.46	.12	.23	.80
3	OTHER CROPS (SIC 012, 019)	.49	.13	.24	.86
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	.29	.19	.19	.66
5	STONE & CLAY MINING (SIC 14 EXC 147)	.28	.11	.15	.55
6	OTHER MINING (SIC 10-3, 147)	.28	.10	.15	.54
7	CONTRACT CONSTRUCTION (SIC 15-7)	.26	.17	.17	.61
8	MEAT PRODUCTS (SIC 201)	.15	.27	.17	.59
9	DAIRY PRODUCTS (SIC 202)	.20	.28	.19	.67
10	CANNED & PRESERVED FOODS (SIC 203)	.15	.23	.15	.52
11	GRAIN MILL PRODUCTS (SIC 204)	.08	.17	.10	.35
12	BEVERAGES (SIC 208)	.20	.15	.13	.47
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	.23	.14	.14	.52
14	FABRIC MILLS (SIC 221-4, 2261-2)	.34	.06	.15	.55
15	YARN & THREAD MILLS (SIC 2269, 228)	.18	.11	.11	.40
16	FLOOR COVERINGS (SIC 227)	.15	.14	.12	.41
17	MISC. TEXTILE GOODS (SIC 229)	.18	.10	.11	.39
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	.40	.12	.20	.72
19	LUMBER & WOOD PRODUCTS (SIC 24)	.28	.14	.16	.58
20	FURNITURE & FIXTURES (SIC 25)	.27	.13	.16	.56
21	PULP & PAPER MILLS (SIC 261-3)	.21	.15	.14	.50
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	.20	.18	.15	.53
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	.23	.16	.15	.54
24	PRINTING & PUBLISHING (SIC 27)	.43	.12	.21	.76
25	CHEMICALS & CHEM. PROD. (SIC 281 286-9)	.17	.11	.11	.40
26	PLASTICS, DRUGS & PAINTS (SIC 282-5)	.21	.16	.15	.52
27	PETROLEUM PRODUCTS (SIC 29)	.18	.16	.13	.47
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	.30	.10	.16	.56
29	LEATHER & LEATHER PRODUCTS (SIC 31)	.34	.09	.17	.60
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	.31	.16	.18	.64
31	PRIMARY IRON & STEEL (SIC 331-2, 3391, 9)	.30	.12	.16	.58
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	.22	.06	.11	.39
33	FABRICATED METAL PRODUCTS (SIC 34)	.29	.10	.15	.54
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	.30	.10	.15	.55
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	.32	.07	.15	.55
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	.27	.13	.15	.55
37	MOTOR VEHICLES & EQUIP (SIC 371)	.20	.05	.10	.35
38	AIRCRAFT & PARTS (SIC 372)	.25	.07	.12	.44
39	TRAILER COACHES (SIC 3791)	.21	.11	.13	.46
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	.30	.11	.16	.57
41	INSTRUMENTS (SIC 38)	.25	.13	.14	.52
42	MISC. MANUFACTURING (SIC 39, 19, 21)	.31	.12	.17	.59
43	TRANSPORTATION SERVICES (SIC 40-7)	.49	.11	.23	.83
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	.27	.12	.15	.54
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	.49	.08	.22	.80
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	.46	.18	.25	.88
47	BUSINESS SERVICES (SIC 73, 81, 89)	.38	.22	.23	.83
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	.34	.12	.18	.65
49	GOVERNMENT ENTERPRISES	.45	.12	.22	.79
50	UNALLOCATED INDUSTRIES	.00	.22	.08	.30

The most meaningful column in Table 5.4a is the fourth one. This is the total income multiplier and shows the total changes in household income resulting from an additional dollar of sales to final demand for the various industries.

As with the output multipliers, the income multipliers are the highest for supporting industries and are relatively low for many export industries. However, among the manufacturing industries, relatively high multipliers are shown for lumber and wood products, printing and publishing, and stone, clay, and glass products. Relatively low multipliers are found for yarn and thread mills, chemicals and chemical products, and nonferrous metal manufacturing.

5.5 Government-Income Multipliers

Government-income multipliers provide an estimate of the range over which both local and State government revenues could be expected to rise for each dollar change in final demand for industries in Georgia. As discussed earlier, the simple multipliers are the lower limits on income changes while the total multipliers are upper limits and are better estimates of the actual effects of final demand changes.

Table 5.5a demonstrates the simple and total multipliers for both local and State government. Except for agriculture and services on the local level and trade at the State level, the impact on government revenues of expanding sales to final demand does not vary substantially industry by industry. However, a careful study of Table 5.5a can reveal some interesting insights. For example, a shift of land from other crops and field crops to forestry would have a strong negative impact on local government revenues.

Table 5.5a Government-Income Multipliers, Georgia, 1970

	INDUSTRY	CITY & COUNTY GOVERNMENT SIMPLE	CITY & COUNTY GOVERNMENT TOTAL	STATE GOVERNMENT SIMPLE	STATE GOVERNMENT TOTAL
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	.02	.04	.01	.04
2	FIELD CROPS (SIC 011)	.07	.09	.01	.05
3	OTHER CROPS (SIC 012, 019)	.07	.09	.01	.05
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	.01	.03	.01	.04
5	STONE & CLAY MINING (SIC 14 EXC 147)	.01	.03	.01	.04
6	OTHER MINING (SIC 10-3, 147)	.01	.03	.01	.04
7	CONTRACT CONSTRUCTION (SIC 15-7)	.02	.03	.02	.05
8	MEAT PRODUCTS (SIC 201)	.02	.03	.01	.04
9	DAIRY PRODUCTS (SIC 202)	.02	.04	.01	.05
10	CANNED & PRESERVED FOODS (SIC 203)	.01	.03	.02	.04
11	GRAIN MILL PRODUCTS (SIC 204)	.01	.02	.01	.03
12	BEVERAGES (SIC 208)	.01	.02	.01	.04
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	.01	.03	.01	.04
14	FABRIC MILLS (SIC 221-4, 2261-2)	.01	.02	.01	.04
15	YARN & THREAD MILLS (SIC 2269, 228)	.01	.02	.01	.03
16	FLOOR COVERINGS (SIC 227)	.01	.02	.01	.04
17	MISC. TEXTILE GOODS (SIC 229)	.01	.02	.01	.03
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	.00	.02	.01	.05
19	LUMBER & WOOD PRODUCTS (SIC 24)	.02	.04	.03	.06
20	FURNITURE & FIXTURES (SIC 25)	.01	.03	.01	.04
21	PULP & PAPER MILLS (SIC 261-3)	.02	.04	.02	.05
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	.01	.03	.02	.04
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	.01	.03	.01	.04
24	PRINTING & PUBLISHING (SIC 27)	.01	.03	.01	.05
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	.02	.03	.02	.04
26	PLASTICS, DRUGS & PAINTS (SIC 282-5)	.01	.03	.01	.04
27	PETROLEUM PRODUCTS (SIC 29)	.01	.02	.01	.04
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	.01	.03	.01	.04
29	LEATHER & LEATHER PRODUCTS (SIC 31)	.01	.02	.01	.04
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	.01	.03	.01	.04
31	PRIMARY IRON & STEEL (SIC 331-2, 3391, 9)	.02	.04	.01	.04
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	.01	.02	.01	.03
33	FABRICATED METAL PRODUCTS (SIC 34)	.01	.03	.01	.04
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	.01	.02	.01	.04
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	.01	.03	.01	.04
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	.01	.02	.01	.04
37	MOTOR VEHICLES & EQUIP. (SIC 371)	.00	.01	.01	.03
38	AIRCRAFT & PARTS (SIC 372)	.00	.02	.01	.04
39	TRAILER COACHES (SIC 3791)	.01	.02	.01	.04
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	.01	.02	.01	.04
41	INSTRUMENTS (SIC 38)	.01	.02	.02	.04
42	MISC. MANUFACTURING (SIC 39, 19, 21)	.01	.03	.02	.05
43	TRANSPORTATION SERVICES (SIC 40-7)	.01	.03	.02	.06
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	.04	.05	.01	.04
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	.02	.04	.13	.18
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	.03	.06	.03	.07
47	BUSINESS SERVICES (SIC 73, 81, 89)	.01	.04	.01	.06
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	.04	.06	.02	.06
49	GOVERNMENT ENTERPRISES	.00	.03	.01	.05
50	UNALLOCATED INDUSTRIES	.01	.02	.01	.03
51	HOUSEHOLDS	.00	.04	.00	.07

An explanation of this difference would involve a comparison of the relative labor intensities in each activity.

5.6 Industry Contributions to the Georgia Economy

Table 5.6a summarizes the contributions of each industry in the 50-sector model to the Georgia economy in terms of household income, local government revenues, State revenues, and total output in 1970. A quick examination of the table indicates that the most important industries in the Georgia economy are households; contract construction; trade; finance, insurance, and real estate; and transportation services. Looking at the broad sectors of the economy, manufacturing is the most important contributor, followed by trade and services, contract construction, and agriculture.

A further examination of the table, however, reveals several points of concern. Most of the income, revenue, and output generated by the Georgia economy is produced in only 19 out of 50 industries. In fact, eight industries (household; contract construction; trade; finance, insurance, and real estate; other services; transportation services; fabricated textiles; and aircraft) account for over 59 percent of Georgia household income. It should be noted that only two of these eight industries are basic industries and both are facing difficulties in maintaining their present levels of production. It is obvious that Georgia needs to encourage the expansion of other manufacturing industries if the economy is to be assured of future growth. (Chapter 7 discusses methods of selecting industries for expansion.)

Table 5.6a. Contributions to Personal Income, City and County Government Income, and State Government Income by Industry Sales to Final Demand (Excluding Households)

		HOUSEHOLD ROW			LOCAL GOVERNMENTS			STATE GOVERNMENT			OUTPUT		
	INDUSTRY	MULT	* FD	% TOT	MULT	* FD	% TOT	MULT	* FD	% TOT	MULT	* FD	% TOT
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	.62	89.5	.74	.04	5.6	.82	.04	5.9	.47	2.56	372.5	.72
2	FIELD CROPS (SIC 011)	.80	245.8	2.04	.09	27.1	3.91	.05	14.7	1.19	2.73	832.7	1.61
3	OTHER CROPS (SIC 012, 019)	.86	52.3	.43	.09	5.3	.77	.05	3.3	.26	2.84	172.3	.33
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	.66	43.4	.36	.03	2.1	.30	.04	2.8	.23	2.69	176.3	.34
5	STONE & CLAY MINING (SIC 14 EXC 147)	.55	53.4	.44	.03	2.8	.41	.04	3.9	.31	2.25	218.8	.42
6	OTHER MINING (SIC 10-3, 147)	.54	5.0	.04	.03	.3	.04	.04	.3	.03	2.22	20.9	.04
7	CONTRACT CONSTRUCTION (SIC 15-7)	.61	1312.2	10.90	.03	69.0	9.97	.05	111.2	8.98	2.53	5455.9	10.53
8	MEAT PRODUCTS (SIC 201)	.59	254.8	2.12	.03	13.6	1.97	.04	17.4	1.41	2.94	1263.5	2.44
9	DAIRY PRODUCTS (SIC 202)	.67	9.0	.07	.04	.5	.07	.05	.6	.05	3.11	41.7	.08
10	CANNED & PRESERVED FOODS (SIC 203)	.52	59.1	.49	.03	3.0	.44	.04	4.9	.40	2.57	292.5	.56
11	GRAIN MILL PRODUCTS (SIC 204)	.35	34.1	.28	.02	2.0	.28	.03	3.2	.26	2.18	213.1	.41
12	BEVERAGES (SIC 208)	.47	83.3	.69	.02	4.2	.61	.04	6.8	.55	2.27	397.7	.77
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	.52	154.6	1.28	.03	7.7	1.11	.04	12.0	.97	2.36	705.6	1.36
14	FABRIC MILLS (SIC 221-4, 2261-2)	.55	434.7	3.61	.02	15.8	2.28	.04	29.6	2.39	2.15	1692.5	3.27
15	YARN & THREAD MILLS (SIC 2269, 228)	.40	196.1	1.63	.02	8.7	1.26	.03	16.8	1.36	2.07	1005.4	1.94
16	FLOOR COVERINGS (SIC 227)	.41	545.1	4.53	.02	23.8	3.43	.04	46.7	3.77	2.22	2930.4	5.65
17	MISC. TEXTILE GOODS (SIC 229)	.39	88.0	.73	.02	4.3	.62	.03	7.5	.61	1.95	444.8	.86
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	.72	630.4	5.23	.02	20.8	3.01	.05	41.9	3.39	2.58	2263.8	4.37
19	LUMBER & WOOD PRODUCTS (SIC 24)	.58	129.3	1.07	.04	8.1	1.17	.06	13.9	1.12	2.43	539.3	1.04
20	FURNITURE & FIXTURES (SIC 25)	.56	92.1	.76	.03	4.1	.60	.04	7.0	.57	2.36	387.0	.75
21	PULP & PAPER MILLS (SIC 261-3)	.50	244.4	2.03	.04	17.4	2.51	.05	22.0	1.78	2.36	1151.0	2.22
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	.53	95.4	.79	.03	5.2	.75	.04	7.9	.64	2.57	457.9	.88
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	.54	96.2	.80	.03	4.6	.67	.04	7.3	.59	2.48	445.3	.86
24	PRINTING & PUBLISHING (SIC 27)	.76	68.7	.57	.03	2.8	.41	.05	4.7	.38	2.70	243.8	.47
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	.40	93.4	.78	.03	6.7	.97	.04	8.7	.71	2.07	489.0	.94
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	.52	87.1	.72	.03	4.5	.65	.04	7.0	.57	2.44	409.5	.79
27	PETROLEUM PRODUCTS (SIC 29)	.47	13.8	.11	.02	.7	.10	.04	1.1	.09	2.30	67.1	.13
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	.56	73.5	.61	.03	3.7	.54	.04	5.7	.46	2.27	300.8	.58
29	LEATHER & LEATHER PRODUCTS (SIC 31)	.60	34.2	.28	.02	1.3	.19	.04	2.5	.20	2.28	130.9	.25
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	.64	110.6	.92	.03	5.2	.75	.04	7.6	.61	2.57	441.9	.85
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	.58	46.0	.38	.04	3.1	.45	.04	3.3	.26	2.37	186.9	.36
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	.39	35.6	.30	.02	1.5	.22	.03	2.9	.23	1.85	171.0	.33
33	FABRICATED METAL PRODUCTS (SIC 34)	.54	148.2	1.23	.03	7.0	1.02	.04	11.1	.90	2.23	617.4	1.19
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	.55	183.3	1.52	.02	7.7	1.11	.04	13.5	1.09	2.25	749.3	1.45
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	.55	96.0	.80	.03	4.8	.69	.04	6.7	.54	2.15	375.8	.73
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	.55	68.0	.56	.02	2.6	.38	.04	5.1	.41	2.35	290.6	.56
37	MOTOR VEHICLES & EQUIP. (SIC 371)	.35	252.5	2.10	.01	10.2	1.48	.03	22.9	1.85	1.75	1254.5	2.42
38	AIRCRAFT & PARTS (SIC 372)	.44	591.5	4.91	.02	22.2	3.20	.04	49.6	4.01	1.97	2641.8	5.10
39	TRAILER COACHES (SIC 3791)	.46	72.4	.60	.02	3.1	.44	.04	5.6	.45	2.17	343.8	.66
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	.57	25.4	.21	.02	.9	.14	.04	1.8	.14	2.34	103.6	.20
41	INSTRUMENTS (SIC 38)	.52	33.5	.28	.02	1.5	.21	.04	2.7	.22	2.26	146.4	.28
42	MISC. MANUFACTURING (SIC 39, 19, 21)	.59	76.3	.63	.03	3.9	.56	.05	6.0	.48	2.39	308.2	.59
43	TRANSPORTATION SERVICES (SIC 40-7)	.83	738.3	6.13	.03	28.6	4.13	.06	54.8	4.42	2.72	2406.0	4.64
44	COMMUNCATIONS & UTILITIES (SIC 48-9)	.54	109.1	.91	.05	11.0	1.58	.04	7.9	.64	2.26	458.9	.89
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	.80	905.7	7.52	.04	42.7	6.18	.18	198.9	16.07	2.60	2936.0	5.67
46	FINANCE, INS., REAL ESTATE (SIC 60-7)	.88	890.7	7.40	.06	57.9	8.37	.07	72.3	5.84	2.95	2997.9	5.78
47	BUSINESS SERVICES (SIC 73, 81, 89)	.83	163.0	1.35	.04	6.9	.99	.06	11.0	.89	3.06	598.1	1.15
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	.65	607.2	5.04	.06	51.9	7.49	.06	52.7	4.26	2.46	2292.9	4.42
49	GOVERNMENT ENTERPRISES	.79	79.7	.66	.03	2.6	.37	.05	4.7	.38	2.70	273.0	.53
50	UNALLOCATED INDUSTRIES	.30	5.4	.05	.02	.3	.04	.03	.5	.04	2.10	38.3	.07
51	HOUSEHOLDS	.39	1485.8	12.34	.04	140.9	20.35	.07	278.5	22.50	2.37	9072.8	17.51
52	TOTAL LOCAL PURCHASES	.00	12043.3	100.00	.00	692.2	100.00	.00	1237.7	100.00	.00	51827.6	100.00

SECTION II

EXTENDING THE GEORGIA ECONOMIC MODEL

SECTION II

EXTENDING THE GEORGIA ECONOMIC MODEL

A primary purpose of the Georgia Interindustry Study has been to create an information system which will see continued future use. Section II demonstrates how the Georgia Economic Model can be used for planning purposes. Chapter 6 discusses the basic projection model and outlines a set of baseline projections of the State economy to 1980. The computing system has been designed such that a variety of assumptions concerning activity in the State can be used as a basis for other projections. Chapter 7 presents a set of tools which can be used in selecting economic activities to encourage in Georgia. Chapter 8 outlines a development simulator which can be used to determine the effect of a new plant or industry on the State. Chapter 9 describes the market information system which presents data prepared for use in the Georgia Economic Model in a form easily used by businessmen and development agencies.

Other uses of an input-output system may be devised. A model such as the Georgia Economic Model can be supplemented to construct a system with

which to answer critical environmental questions and through which to project occupational profiles for use in manpower development programs. While not discussed here, these extensions could easily be made.

6

ECONOMIC PROJECTIONS

6.1 Introduction

A major use of input-output models is for making long-term projections. We begin our discussion of this use of the Georgia Economic Model with a discussion of the various techniques available for projecting economic activity. While brief, it sets the scene. Then we outline the projection model in more detail, commenting on the assumptions and techniques used in its construction and on the way in which we have estimated final demand and productivity changes for use in the projections. Third, we present and discuss our baseline projections for 1980 and we compare these projections with other projections for the same period. And fourth, we allocate our projections to the eight trade regions of Georgia.

6.2 Types of Projections

Of the several means of projecting regional activity, four are common: (1) straight-line extrapolation, (2) shift-share projections, (3) aggregate econometric projections, and (4) input-output projections.

Straight-line extrapolations are both easy and naïve. Growth rates over a recent period for industries in the economy are assumed to apply in the future. The technique obviously suffers: it ignores resource restrictions, can lead to negative predicted values in some cases and to

absurdly high predicted values in others, and is based on an assumption that what has occurred in the past will continue to happen in the future. In spite of these shortcomings, we make limited use of it in the projections presented in the market analyses in Chapter 8. It is a simple means for handling a large number of calculations, does not vary depending upon factors unknown to the observer, and is easy to understand.

Shift-share projections represent an improvement on the straight-line method. Shift-share analysis divides growth in a regional industry into two parts: (1) the national industry growth rate and (2) the regional-share component, or the difference between the regional industry growth rate and the national industry growth rate. In analyzing growth in an economy's employment, these parts are used to divide employment (income) growth for the region into three categories: (1) that associated with national growth (2) that associated with industry mix in the region, and (3) that associated with characteristics peculiar to the region.

In projecting industry employment, several variations on the shift-share method are possible. Generally, they involve projecting industry growth at some national rate and adjusting this growth with a factor reflecting the regional-share component in a shift-share analysis of the previous period. With the assistance of Dr. Charles F. Floyd of the University of Georgia, we have made projections of employment in Georgia and the planning regions used in the Georgia Interindustry Study through 1980 using the shift-share technique. We compare them with our projections later.

Aggregate econometric models are occasionally used in projecting economic activity. The equations used by Dr. Henry Thommasen in predicting

tax revenues for the state of Georgia are typical of this family of models. They are designed to predict one quantity on the basis of a number of other observed quantities. Another example is the regional forecasting system modeled after the Wharton national econometric model and currently being explored for use by the Bureau of Business and Economic Research at the University of Georgia. This system may use the Georgia input-output model as a source of its main data inputs. Generally, we can say that aggregate models are not competitive with input-output models. One is designed to predict or explain the behavior of a single variable or a small number of variables, while the other is designed to examine and project the behavior of the many components of the entire economic structure of an area.

Input-output models become projection models under a variety of assumptions. The models are especially designed for long-run projections of industry behavior. Our projection model is what might be called a "basic" model. That is, it is an extension of the 1970 model without extensive sophistication. As we shall see, the simplicity of our model yields valuable results.

6.3 The Projection Model

6.3.1 Review of Basic Techniques

As pointed out in section 4.4.3, the solution to the set of equations describing the input-output system of an economy forms the basis for a projection model. This solution is expressed as

$$x' = (I - a)^{-1}y' \quad ,$$

where $\underline{x}'$ is a vector or column of the gross outputs of industries in the economy in some future year, $\underline{a}$ is the direct-requirements matrix, $(I - a)^{-1}$

is the inverse, or total requirements, matrix, and $\underline{y}'$ is the vector of final demands for goods in the economy in the future year under consideration.

If we assume that the direct-requirements matrix remains reasonably stable, we simply need to estimate values for the $\underline{y}'$ vector to be able to make consistent estimates of the future gross outputs of industries in the economy.

Why bother to estimate final demand for goods produced in the State in order to estimate gross outputs? The number of values to be estimated is the same and, on the surface, it appears difficult to estimate either set of values. The answer is fairly easy. First, estimates of industry growth rates are fairly easy to obtain in national statistics and provide a convenient starting point for estimating change in final demand. And second, estimates of future gross outputs for Georgia industries made independently of each other can be highly inconsistent. If we start with estimates of final demands which are reasonable, the input-output system forces us to calculate estimates of future gross outputs which are consistent with expected relationships and needs within the economy.

Our objective is to produce good and consistent estimates of the future structure of the economy with the least additional information.

6.3.2 Construction of the Model

We have constructed the projection model around the 29-industry input-output model published in Georgia Business (May 1972) and reprinted in Introducing the Georgia Economic Model. This has been primarily a matter of convenience in comparing the projected industry employment with other estimates. The model has been altered slightly from its published form.

Our primary modification has been to close the model with respect

not only to the household sector but also to the private-investment and the State- and local-government sectors. That is, we have treated these sectors, which are traditionally part of final demand, as industries and have assumed that their expenditures are reasonably dependent on their incomes. This step has left us with two final-demand sectors, the Federal government and private exports. These two sectors are clearly exogenous to the Georgia economic system; there is no way to say that expenditures by the Federal government in Georgia are related to Federal revenues in the State, and there is no way to say that the purchases by industries outside the State are dependent on the sum of such purchases.

Since we are interested in basic projections, we have not altered the direct-requirements matrix to reflect changes in technology or changes in trade patterns. Speculations as to these changes are difficult to make, especially in the numbers required to make any difference in the projections, and are probably no more reliable than an assumption that no important changes take place. This is especially true if we are looking for the minimum or baseline projections of activities.

But in estimating employment in 1980, we have attempted to account for trends in productivity growth rates. We have modified the ratios of employment to gross outputs in 1970 by expected productivity growth rates computed for national industries.

The result is a basic projection model which takes, as data, the direct-requirements table for Georgia, estimates of final demands for Georgia products computed from national growth patterns, and estimates of productivity growth. It yields, as outputs, estimates of the gross outputs and employment of industries in Georgia.

6.3.3 Basic Assumptions

It might be useful to list some of the assumptions made in using our model. We have assumed (1) that no basic changes take place in the input requirements of Georgia industries, (2) that no changes occur in the trade patterns of Georgia industries, (3) that the demands for Georgia products keep pace with national demands, and (4) that no major changes in industry mix occur. These are fairly stringent assumptions; they cast our projections in the role of baseline projections, providing a yardstick against which to measure the success of development activities. The extent to which changes in employment between 1970 and 1980 exceed our projections will measure the success of the Georgia Department of Industry and Trade, the area planning and development commissions, and the various other public and private development agencies in promoting Georgia's economic future.

6.4 Baseline Projections of the Georgia Economy, 1980

6.4.1 Estimates of Growth in Exogenous Demands and Productivity

As noted in the previous section, the projection model estimates 1980 outputs of Georgia industries on the basis of expected changes in demands by the Federal government and by industries and consumers outside of Georgia. The model then projects employment in Georgia on the basis of these estimated outputs and expected changes in the ratios of employment to output in 1980, or the reciprocals of the 1980 productivity ratios, for industries in Georgia.

Growth rates in exogenous demands and in labor productivity have been derived from projections by the Bureau of Labor Statistics. These national industry growth rates are derived from a set of input-output projections

based on the 80-industry national model. We have weighted these growth rates in accordance with the industry pattern in Georgia and have thus estimated average growth rates for private exports of each of the 29 industries in Georgia.

These estimates are shown in Table 6.4a. High growth rates are expected in chemicals, miscellaneous manufacturing, rubber and plastics, and communications and utilities. Low growth rates are expected in leather and leather products, transportation equipment, agriculture, mining, and lumber and wood products. We have projected Federal defense expenditures to decline at 1.5 percent annually, meaning that these expenditures in 1980 will be 86 percent of their 1970 level and that we assume Lockheed will probably remain in operation. We have projected other Federal expenditures to increase at 2.1 percent of their 1970 level. Both Federal expenditure patterns are assumed to have the same basic composition in 1980.

6.4.2 The Aggregate Projections

Table 6.4b reports aggregate changes in the Georgia economy which would result under our assumptions. The gross state product would grow at 4.0 percent annually. This is lower than the 4.3 percent growth rate in gross national product projected by the Bureau of Labor Statistics. Georgia's relatively low projected growth rate results from the dominant positions of slow-growth industries in Georgia.

With personal income growing at 3.7 percent and the population growing at 1.5 percent, per capita income grows at 2.1 percent annually. This is less than the 3.1 percent growth rate which is expected for the Nation over the 1970-80 period and reflects not only a low growth rate in personal income but also a relatively high population growth rate. We have

Table 6.4a Estimates of Annual Growth in Exogenous Demands and Labor Productivity

(in percent)

Industry	Annual export growth rate	Productivity growth rate
Agriculture	2.757	5.12
Mining	3.112	3.67
Contract construction	4.165	2.30
Food and kindred products	3.295	3.61
Textile mill products	3.928	4.59
Apparel and related products	3.783	2.37
Lumber and wood products	3.281	3.46
Furniture and fixtures	5.062	3.16
Paper and allied products	4.705	3.30
Printing and publishing	4.400	3.30
Chemicals and allied products	5.523	4.71
Petroleum refining	3.500	5.10
Rubber and misc. plastics	6.300	3.10
Leather and leather products	1.191	1.08
Stone, clay and glass products	4.519	3.21
Primary metal industries	3.950	3.27
Fabricated metal products	3.881	2.44
Machinery, except electrical	4.514	2.67
Electrical machinery & equipment	5.080	3.03
Transportation equipment	2.729	2.04
Miscellaneous manufacturing	5.670	3.97
Transportation services	4.000	3.50
Communications & utilities	6.505	5.62
Wholesale and retail trade	4.700	2.70
Finance, insurance, real estate	4.622	2.59
Services	5.233	1.96
Federal civilian & military	5.100	0.0
State and local government	5.500	0.0
Unallocated industries	3.868	0.0
Federal defense expenditures	-1.5	
Federal other expenditures	2.1	

Source: Estimated from U.S. Department of Labor, Bureau of Labor Statistics, The U.S. Economy in 1980 (BLS Bulletin 1673).

Table 6.4b Aggregate Projections of the Georgia Economy, 1980

Variable	1970	1980	Annual percent growth
Gross state product ($ millions)	20,459	30,182	4.0
Personal income ($ millions)	15,866	22,863	3.7
Per capita income ($)	3,457	4,296	2.1
Employment	1,728,318	2,017,696	1.6
Population	4,589,575	568,136	1.5
Employment/population ratio	.377	.383	-

projected population as 2.61 times employment in 1980, based on estimates of the working-age population in 1980. If we had followed national estimates, population would be projected at 4,971,012, or 2.43 times employment, and the rate of growth for per capita income would be 2.9 percent, much closer to the growth rate for the Nation.

Employment (including estimates of agricultural employment and military employment) is estimated at 2,038,115 in 1980, growing at 1.66 percent annually. This estimate is lower than that of most projections. The Bureau of Economic Analysis projects Georgia employment at 2,209,900 and Dr. Charles Floyd projects Georgia employment at between 2,276,739 and 2,346,520. Both of these projections are optimistic, assuming that trends set in the last decade will continue in the future. Our estimate is a baseline estimate, showing employment which can be expected in 1980 if only national trends influence Georgia's economy. The influence of Georgia entrepreneurs and planning and development agencies has not been taken into account.

6.4.3 Industry Projections

Table 6.4c presents projected outputs and employment in 1980, by industry. The ten industries with the highest output growth rates are, in order:

Contract construction
Miscellaneous manufacturing
Furniture and fixtures
Stone, clay, and glass products
Rubber and miscellaneous plastics
Machinery, except electrical
Electrical machinery
Chemicals and chemical products
Fabricated metals
Paper and allied products

Table 6.4c Projected Baseline Industry Outputs and Employment, Georgia, 1980

(Outputs in Millions of Dollars, Employment in Number of Employees)

INDUSTRY	GEORGIA OUTPUTS 1970	GEORGIA OUTPUTS 1980	GA. EMPLOYMENT 1970	GA. EMPLOYMENT 1980
AGRICULTURE (SIC 01, 07-9)	1477.610	2029.535	72710	60615
MINING (SIC 10-4)	196.565	298.160	6304	6669
CONTRACT CONSTRUCTION (SIC 15-7)	2519.575	4903.776	84875	131591
FOOD AND KINDRED PRODUCTS (SIC 20-1)	2281.214	3213.706	47276	46716
TEXTILE MILL PRODUCTS (SIC 22)	3690.639	5425.393	110548	103748
APPAREL AND RELATED PRODUCTS (SIC 23)	997.556	1445.557	67174	77014
LUMBER AND WOOD PRODUCTS (SIC 24)	487.956	744.197	22348	24256
FURNITURE AND FIXTURES (SIC 25)	232.911	394.304	10976	13614
PAPER AND ALLIED PRODUCTS (SIC 26)	1215.425	1907.113	24883	28219
PRINTING AND PUBLISHING (SIC 27)	341.004	511.856	14164	15366
CHEMICALS AND ALLIED PRODUCTS (SIC 28)	716.413	1156.617	15516	16649
PETROLEUM REFINING (SIC 29)	49.490	74.120	1019	928
RUBBER AND MISC. PLASTICS (SIC 30)	245.645	415.235	8074	10057
LEATHER AND LEATHER PRODUCTS (SIC 31)	77.844	94.174	4667	5071
STONE, CLAY AND GLASS PROD. (SIC 32)	389.017	657.795	14068	17343
PRIMARY METAL INDUSTRIES (SIC 33)	287.496	423.143	6734	7184
FABRICATED METAL PRODUCTS (SIC 34, 19)	524.138	824.936	17373	21486
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	425.458	715.259	13440	17361
ELECTRICAL MACHINERY & EQUIP. (SIC 36)	360.887	589.159	11213	13581
TRANSPORTATION EQUIPMENT (SIC 37)	2492.129	2962.367	49663	48239
MISCELLANEOUS MANUFACTURING (SIC 38-9)	219.256	372.673	7153	8237
TRANSPORTATION SERVICES (SIC 40-7)	1327.270	1980.549	79849	84468
COMMUNICATIONS & UTILITIES (SIC 49-9)	1280.511	1969.174	37732	33585
WHOLESALE AND RETAIL TRADE (SIC 50-9)	4820.279	7379.581	340753	399664
FINANCE, INS., REAL ESTATE (SIC 60-7)	4247.452	6287.692	75189	86192
SERVICES (SIC 70-9, 80-6, 89)	4182.537	6326.404	173085	217741
FEDERAL GOVERNMENT ENTERPRISES	220.344	338.847	19408	29846
STATE & LOCAL GOVERNMENT ENTERPRISES	204.635	311.630	10407	15848
UNALLOCATED INDUSTRIES	306.514	461.567	0	0
HOUSEHOLDS	15866.004	22863.257	0	0
CAPITAL RESIDUAL	2202.509	5788.630	0	0
CITY AND COUNTY GOVERNMENT	1463.800	1992.359	151483	206182
STATE GOVERNMENT	1576.441	2332.284	61142	90457
FEDERAL GOVERNMENT	4284.305	4554.817	169092	179769
TOTAL	61210.828	91745.866	1728318	2017696

Many of these are industries which pay substantial wages and salaries; yet they are relatively small among industries which employ Georgians. The ten largest contributors to employment in the 1970's are expected to be:

Contract construction
City and county governments
Wholesale and retail trade
Services
State government
Federal government
Apparel
Transportation services
Finance, insurance, and real estate
Machinery, except electrical

And many of these pay fairly low wages and salaries, contributing to low per capita incomes.

Due to productivity increases (and to the expected decline in Federal defense expenditures), employment is expected to drop in textile mill products, food and kindred products, lumber and wood products, transportation equipment, mining, and petroleum refining.

6.4.4 Allocation of Employment Projections to Trade Regions

Using the allocation of industry employment to the eight trade regions (Chart 6.4a) developed in Dr. Floyd's shift-share projections, we have distributed changes in industry employment among the regions of Georgia. Table 6.4d reports annual growth rates in employment in each region. (See Appendix F for a discussion of the shift-share method. Table 6.4d is derived from "B" projections for each region based on tables similar to Table F.3a.)

According to the baseline projections, Region VI, with Augusta as its principal city, will grow the most rapidly over this decade, followed by Region II (Atlanta) and Region III (Gainesville-Athens). In the Augusta

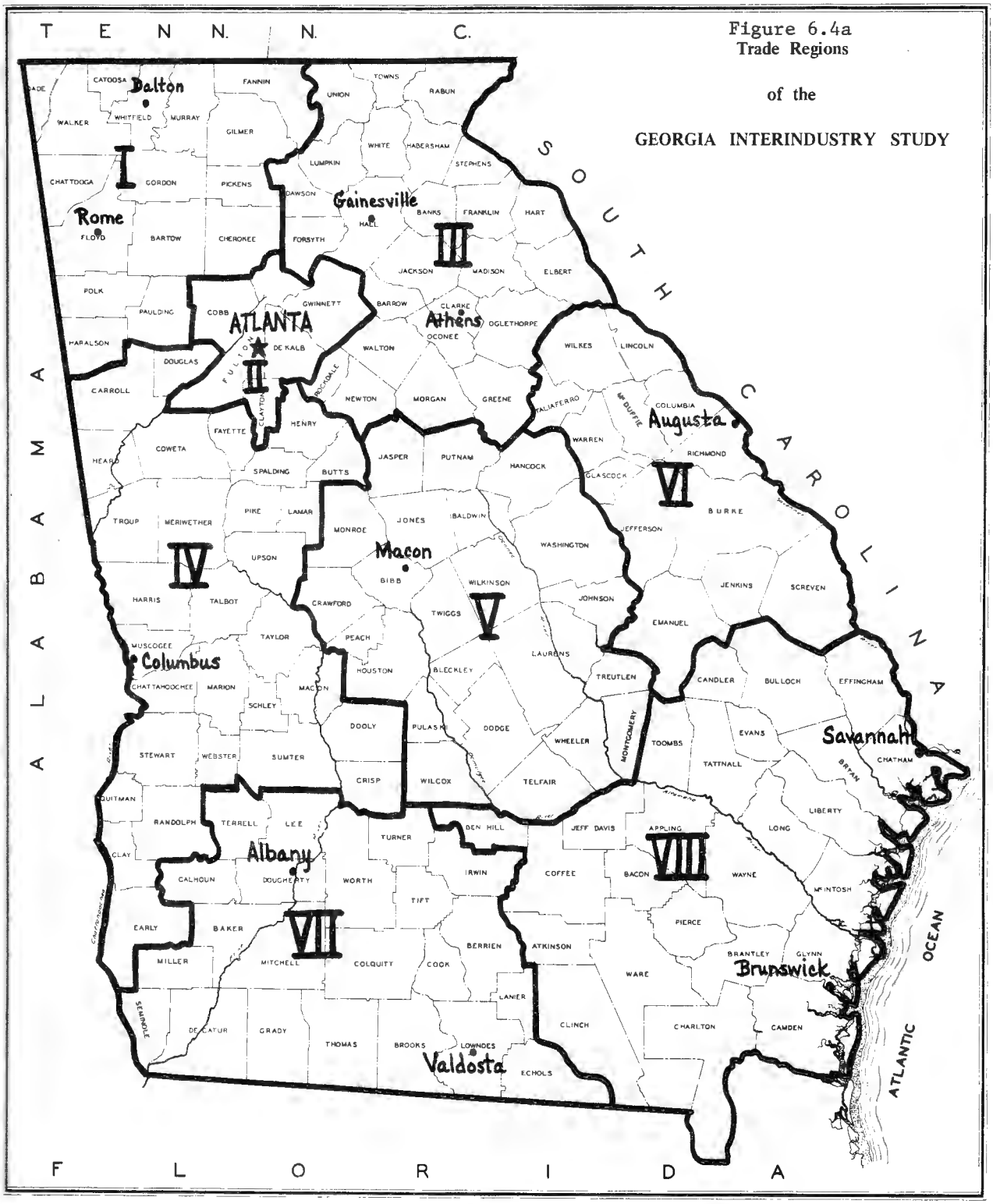


Figure 6.4a
Trade Regions
of the
GEORGIA INTERINDUSTRY STUDY

Table 6.4d Annual Growth in Projected Baseline Employment in Georgia, by Industry and Region (Preliminary)
(in percent)

Industry	Region I	II	III	IV	V	VI	VII	VIII
AGRICULTURE (SIC 01, 07-9)	1.09	-.63	1.29	-6.17	-5.15	-6.31	-3.98	1.68
MINING (SIC 10-4)	-3.89	2.20	2.28	-20.41	.88	5.11	1.00	7.24
CONTRACT CONSTRUCTION (SIC 15-7)	5.46	5.11	3.79	3.98	3.00	5.39	4.26	2.57
FOOD AND KINDRED PRODUCTS (SIC 20-1)	.06	-.07	1.28	-1.03	-1.72	.86	-.41	-.62
TEXTILE MILL PRODUCTS (SIC 22)	.98	-3.40	-1.03	-3.30	.61	.31	1.51	5.64
APPAREL AND RELATED PRODUCTS (SIC 23)	.82	-.27	.93	1.33	2.26	- 44	3.00	3.91
LUMBER AND WOOD PRODUCTS (SIC 24)	-10.05	5.32	1.16	-5.09	2.13	2.54	1.82	1.63
FURNITURE AND FIXTURES (SIC 25)	.95	.06	.72	4.76	1.57	8.65	7.41	.76
PAPER AND ALLIED PRODUCTS (SIC 26)	.84	2.50	1.71	4.23	-1.61	5.70	3.25	-.92
PRINTING AND PUBLISHING (SIC 27)	.09	.96	2.85	1.98	-.52	.00	-1.89	-1.20
CHEMICALS AND ALLIED PRODUCTS (SIC 28)	5.77	1.77	-2.29	1.34	2.55	5.41	.89	-10.95
PETROLEUM REFINING (SIC 29)	.00	3.44	.00	.00	-.85	.00	.00	-3.13
RUBBER AND MISC. PLASTICS (SIC 31)	3.11	2.44	4.24	-3.79	-.96	1.06	4.26	4.28
LEATHER AND LEATHER PRODUCTS (SIC 31)	6.47	-.99	2.17	-.98	.00	.00	.00	1.10
STONE, CLAY AND GLASS PRODUCTS (SIC 32)	2.08	2.79	.75	2.89	.43	2.72	1.88	2.78
PRIMARY METAL INDUSTRIES (SIC 33)	-4.64	-1.82	4.49	2.29	-100.00	-100.00	3.89	5.66
FABRICATED METAL PRODUCTS (SIC 34, 19)	3.96	1.25	3.54	1.01	3.68	1.91	.35	2.88
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	3.22	1.10	2.79	-1.88	3.36	7.95	6.16	-.58
ELECTRICAL MACHINERY + EQUIP. (SIC 36)	.22	1.80	3.48	-2.39	2.91	-9.88	6.66	6.53
TRANSPORTATION EQUIPMENT (SIC 37)	-.29	-.97	2.13	2.83	2.08	1.36	4.33	-.49
MISCELLANEOUS MANUFACTURING (SIC 38-9)	-24.04	-1.90	2.05	3.94	5.25	-3.84	7.06	3.27
TRANSPORTATION SERVICES (SIC 40-7)	.35	1.43	-.97	-.25	-6.34	.32	-1.41	-.26
COMMUNICATIONS + UTILITIES (SIC 48-9)	-1.11	-1.02	-.22	-.68	-.86	-.83	-1.06	-4.52
WHOLESALE AND RETAIL TRADE (SIC 50-9)	1.51	2.09	1.87	1.01	.89	2.42	1.00	.27
FINANCE, INS., REAL ESTATE (SIC 60-7)	1.38	1.12	2.99	2.27	2.60	.87	2.07	-.10
SERVICES (SIC 70-9, 80-6, 89)	2.17	3.34	2.13	1.53	.65	1.41	2.13	1.53
FEDERAL GOVERNMENT ENTERPRISES	2.72	4.34	2.71	5.56	2.37	7.24	-7.46	-2.30
STATE + LOCAL GOVERNMENT ENTERPRISES	4.32	4.33	4.33	4.30	4.28	4.28	4.27	4.26
UNALLOCATED INDUSTRIES	.00	.00	.00	.00	.00	.00	.00	.00
HOUSEHOLDS	.00	.00	.00	.00	.00	.00	.00	.00
CAPITAL RESIDUAL	.00	.00	.00	.00	.00	.00	.00	.00
CITY AND COUNTY GOVERNMENT	3.16	3.16	3.17	3.13	3.11	3.11	3.10	3.10
STATE GOVERNMENT	4.02	4.03	4.03	3.99	3.98	3.98	3.96	3.96
FEDERAL GOVERNMENT	.50	1.27	.44	.14	.07	1.79	-.34	-.43
TOTAL	1.63	1.93	1.69	.73	1.33	2.24	1.36	1.04

region, growth will be led by furniture and fixtures, machinery, paper, construction, and chemicals. In the Atlanta region, the faster-growing sectors should be construction, government activities, and services. In the Gainesville-Athens region, the leading sectors are construction, rubber products, the several metal and machinery industries, and printing and publishing.

7

ECONOMIC INTELLIGENCE

7.1 The Strategy of Development and Input-Output Analysis

As Georgia has industrialized and grown in population and employment needs, numerous public and private agencies have been created to aid in the "development" of the State. Typical of these agencies are the Georgia Department of Industry and Trade, the Office of Planning and Budget, the Area Planning and Development Commissions, Georgia Tech's Industrial Development Division, the University of Georgia's Institute for Community and Area Development, and many others among the chambers, utilities, banks and foundations of the State. Generally, their purposes have been to generate better employment opportunities, higher incomes, and a better life for residents of Georgia. Often, pressed for time and hampered by inadequate financing, these agencies have been forced to act without a strategy in pursuit of their goals.

Now, however, some of these development agencies are actively forming a strategy for development. This Georgia Interindustry Study, in fact, was initiated by the Department of Industry and Trade and the Office of Planning and Budget in an attempt to establish a strong information system for the State. It is a means for gathering and organizing information or intelligence about the economy as a basis for forming a development strategy.

A frequent question asked by development agencies is: What economic activities should we encourage in the State? This chapter examines this question in the light of our study.

Obviously, all industries are not equally desirable in terms of potential contributions to Georgia incomes. Some industries, for example, may be capital-intensive and employ relatively few workers. Others may not be compatible with the resources of the Georgia economy, and therefore may have few linkages with other local industries. It is important that planning and development agencies in Georgia use selection criteria which will ensure that major promotional efforts, prime industrial sites, and other resources be allocated to the industries that will provide the most income for Georgia residents.

This chapter uses the data developed in the input-output study to examine the question of which industries should be encouraged in Georgia. This examination is made with the help of a self-sufficiency analysis and a set of income-per-employee indices.

7.2 A Self-Sufficiency Analysis

One approach to answering the question of which economic activities to encourage in Georgia is through examining the structure of the economy and identifying apparent "missing links" or "bottlenecks." This approach is a "supply" approach and involves an evaluation of the level of "self-sufficiency" of each industry in the 50-industry input-output model.

Although total self-sufficiency (i.e., zero imports) should clearly not be a goal of an economic development program, greater self-sufficiency often should be. That is, if an economy has "missing links" in an industry

or family of industries, then the opportunities in that economy for generating employment and income are lessened. Two illustrations of industrial development activities based on this concept should make the point clear.

In 1959, the Industrial Development Division of Georgia Tech released a report documenting the market for tin cans in the Southeast. This documentation could well have been based on an input-output table if one had existed at the time. Georgia and most of the Southeast were being served by plants outside the area. Shortly after the study was completed, Crown Cork and Seal announced their intention to establish a plant in Georgia; American Can followed Crown Cork and Seal into Georgia to help in filling the production gap in the Southeast. The missing link in a family of food-processing activities had been filled.

A second illustration involves the efforts by the Georgia Department of Industry and Trade leading to the location in Georgia of a plant producing olefin fibers for the carpet industry. This plant filled a major gap in our floor-covering industry since almost all of the fibers used in producing carpets were imported from outside the State.

Both the can and the fiber plants are economically feasible in Georgia. By adding them to the industry structure of the State, Georgia not only relieves some of the potential cost pressures associated with imports but also generates additional employment and income opportunities for its citizens.

A skyline or self-sufficiency chart helps to illustrate the approach of this section. Chart 7.2a graphically portrays the status of each of the 50 industries in the Georgia Economic Model. Each vertical bar in the chart contains three elements: a block representing self-sufficiency output, a

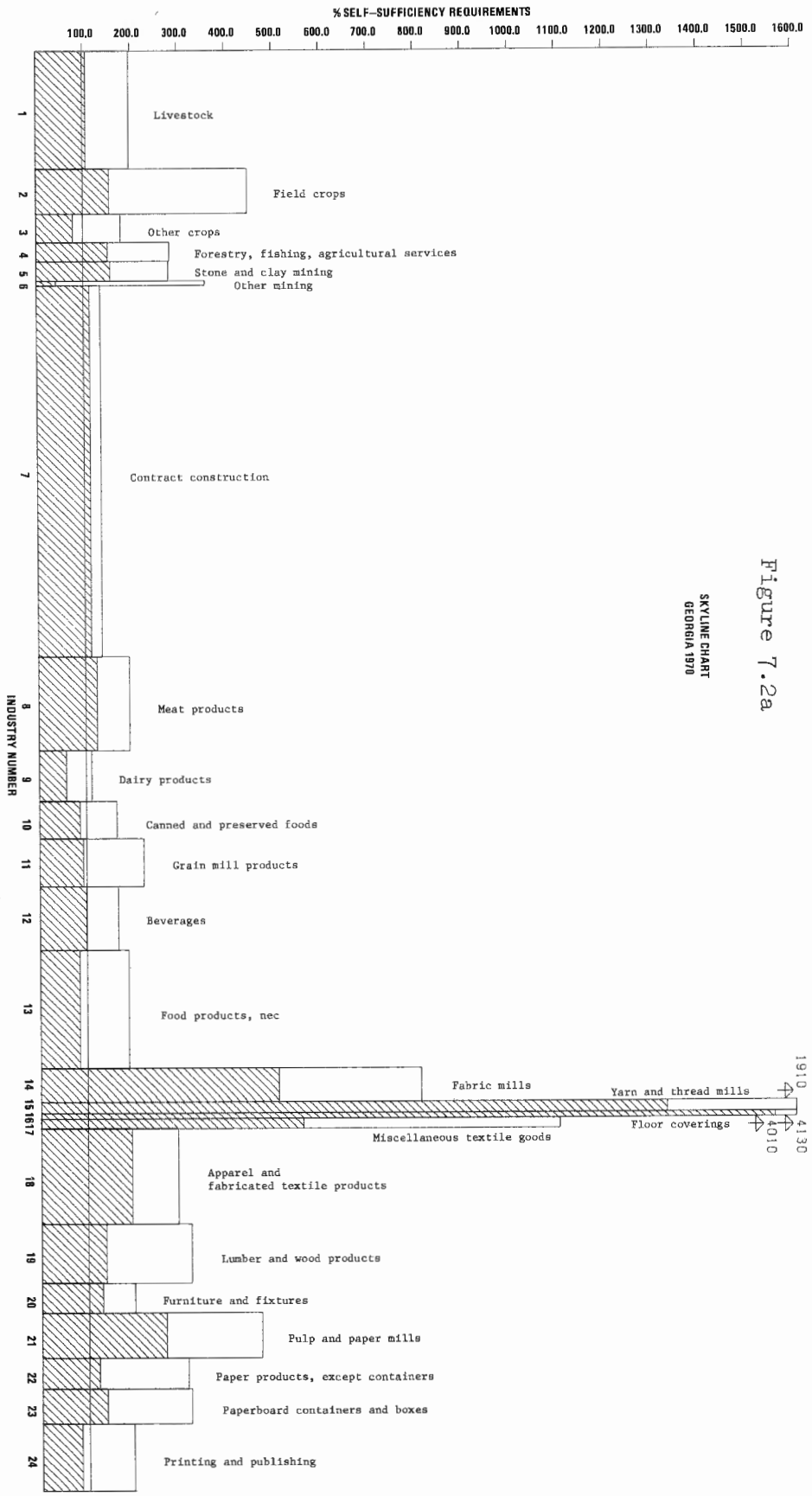

% SELF-SUFFICIENCY REQUIREMENTS
100.0 200.0 300.0 400.0 500.0 600.0 700.0 800.0 900.0 1000.0 1100.0 1200.0 1300.0 1400.0 1500.0 1600.0
INDUSTRY NUMBER
1 Livestock
2 Field crops
3 Other crops
4 Forestry, fishing, agricultural services
5 Stone and clay mining
6 Other mining
7 Contract construction
8 Meat products
9 Dairy products
10 Canned and preserved foods
11 Grain mill products
12 Beverages
13 Food products, nec
14 Fabric mills
15 Yarn and thread mills
16 Floor coverings
17 Miscellaneous textile goods
18 Apparel and fabricated textile products
19 Lumber and wood products
20 Furniture and fixtures
21 Pulp and paper mills
22 Paper products, except containers
23 Paperboard containers and boxes
24 Printing and publishing
1910
4130
4010
SKYLINE CHART
GEORGIA 1970

Figure 7.2a

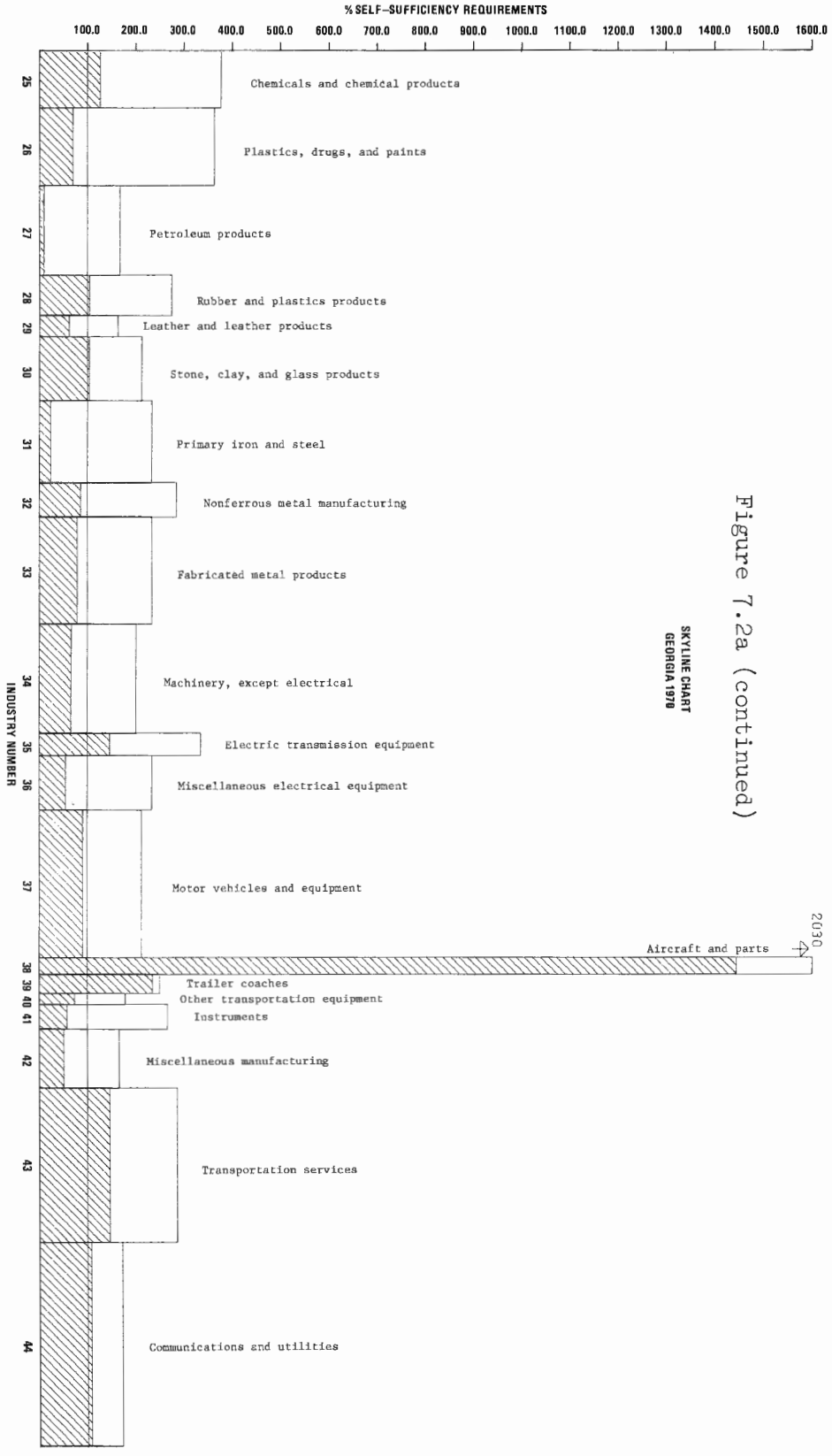
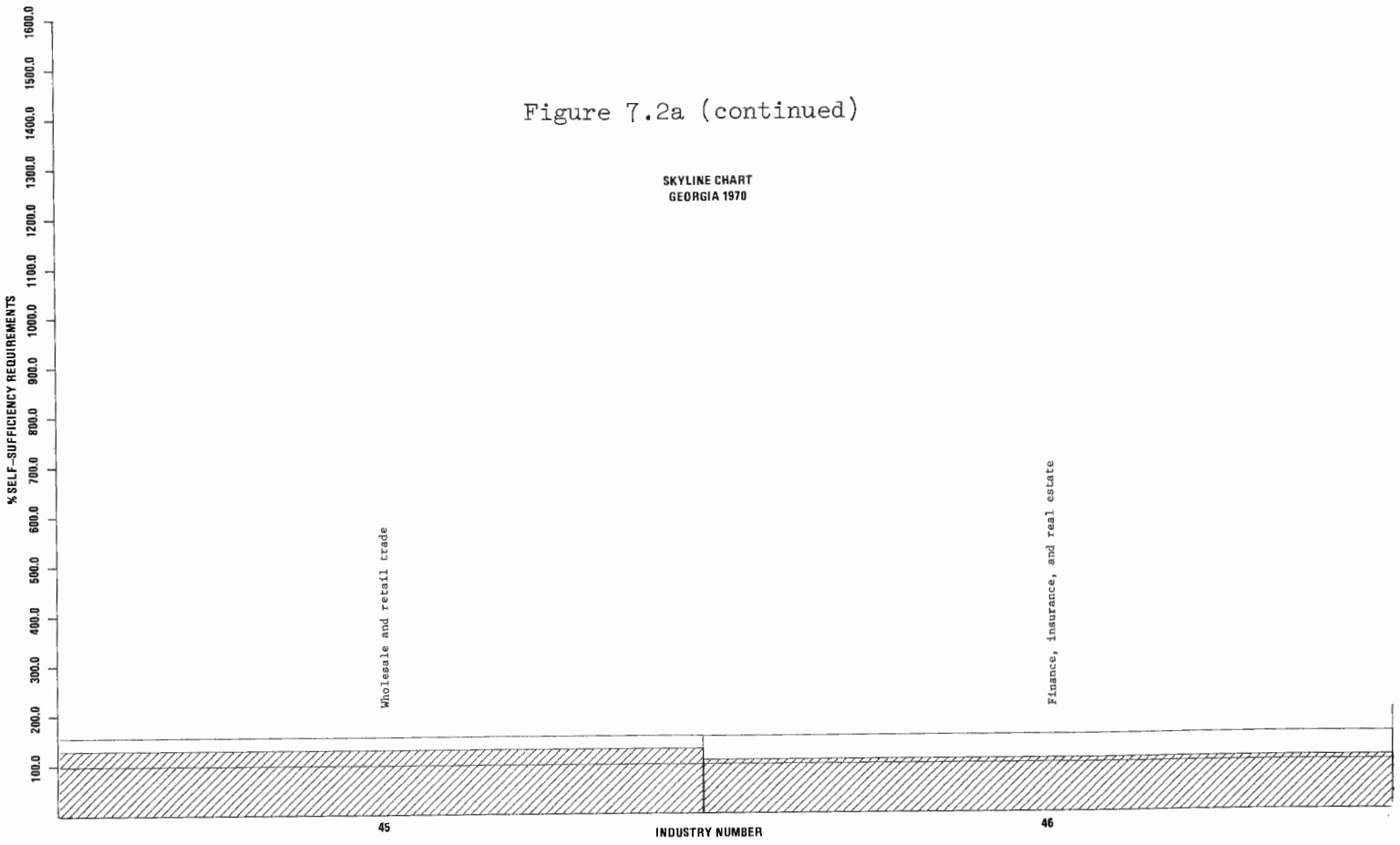


Figure 7.2a (continued)

Figure 7.2a (continued)



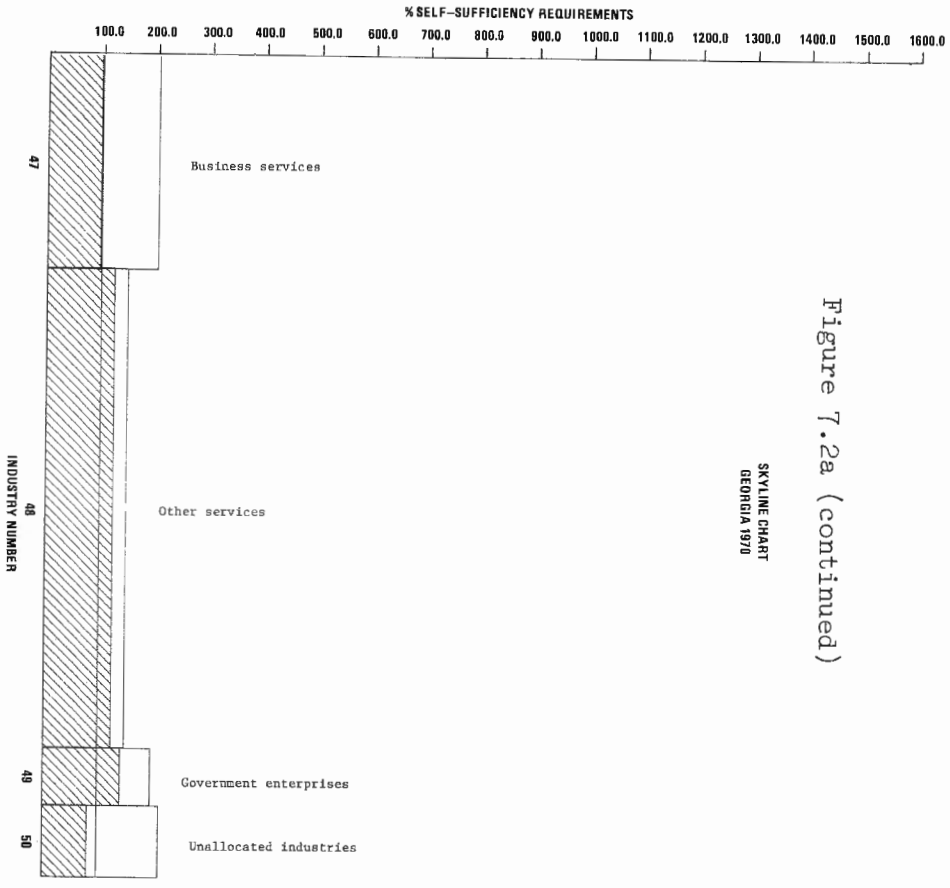


Figure 7.2a (continued)

block representing direct and indirect exports by an industry, and a block representing direct and indirect imports of the products of the industry. As shown in Figure 7.2a, these elements are combined to produce an industry "skyline" for Georgia, showing the gross outputs of each industry in relation to a "self-sufficiency horizon."

Self-sufficiency output is represented by that part of the bar for an industry lying below the 100% self-sufficiency line. It is defined for each of Georgia's 50 industries as the outputs necessary to completely satisfy the direct and indirect requirements of domestic final-demand sectors (expenditures by households, for private investment, and by State and local governments). If Georgia imported and exported nothing, industries in the State would have to produce at self-sufficiency levels to satisfy domestic needs.

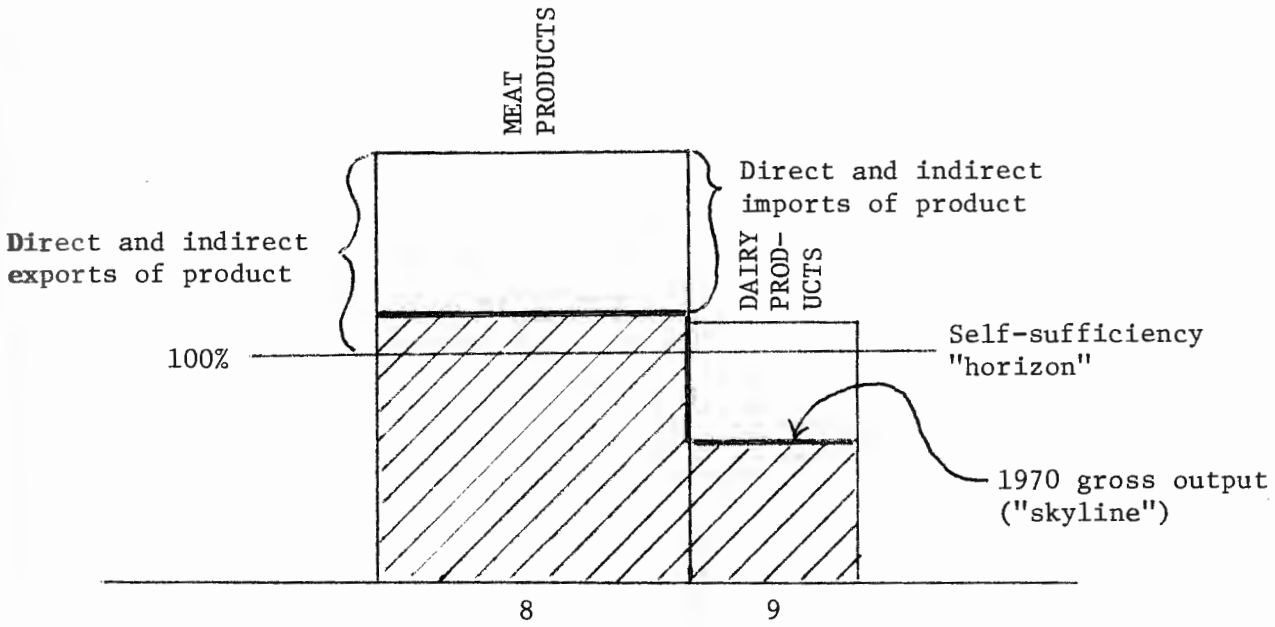
Direct and indirect exports are represented by the remainder of the bar for an industry. This value is defined as the production required of an industry to satisfy export demand for its products. Export demand is the remainder of final demand, or Federal government expenditures and private exports.

Direct and indirect imports are represented by the unshaded area at the top of each bar. This value is defined as the imports of products of each industry which are required in excess of local production to satisfy all direct and indirect requirements of these products.

The gross output of each industry is represented by the shaded area in each bar. Industries which are more than self-sufficient have gross outputs in excess of self-sufficiency outputs.

A scanning of the skyline chart shows several prominent points. One is the strength of the Georgia economy in the textiles and apparel industries.

Figure 7.2a Illustrative Interpretation of Skyline Chart



Another is in the family of industries clustered around the pulp and paper industry. These families are strong and interrelated; they form important parts of Georgia's economic base.

Another interesting point is the height of the bar representing aircraft and parts. It is almost alone in the section of the chart showing durable goods and it points to a weak corner in Georgia's economy. Outside of the mobile-home and electrical-machinery industries, the durable-goods industries in Georgia are associated more with imports than exports; investigation of these industries in detail should turn up many import-substitution possibilities which are feasible and practical for the State.

Table 7.2a reports the data represented in the skyline chart to permit a better understanding of the absolute magnitudes of the outputs, imports, and exports discussed above. Compared with Table 3.3a, which shows the direct imports of products into the State, this data can yield information of interest to development agencies. Georgia has several industries (e.g., fabric mills, paper products, and finance, insurance, and real estate) whose outputs are more than sufficient to meet all of the demands of other Georgia producers for their products. Yet, products of these same industries also comprise a large percentage of the products imported by local industries. This indicates a need to investigate such industries to determine the products normally associated with them that the Georgia industries are not now producing but which they should be encouraged to produce. In some cases, only a strong promotional effort may be necessary to encourage a diversification and strengthening of the Georgia economy.

Thus, the self-sufficiency analysis indicates areas in which state development and promotional efforts may be focused to Georgia's advantage.

Table 7.2a Self-Sufficiency Output, Direct and Indirect Exports and Imports, and Gross Output for Industries in Georgia, 1970

(millions of dollars)

	Self-sufficiency output	Direct and indirect exports	Direct and indirect imports	Gross output	Gross output as percent of self-sufficiency
1 LIVESTOCK & LIVESTOCK PROD. (SIC 013)	711.68	697.08	650.35	758.79	106.62
2 FIELD CROPS (SIC 011)	273.74	952.52	799.61	426.93	155.96
3 OTHER CROPS (SIC 012, 019)	171.60	135.86	173.31	134.23	78.23
4 FORESTRY, FISHING, AG. SERV. (SIC 07-9)	116.60	213.09	152.60	177.15	151.93
5 STONE & CLAY MINING (SIC 14 EXC 147)	117.38	211.54	144.16	184.81	157.45
6 OTHER MINING (SIC 10-3, 147)	28.32	72.93	89.48	11.84	41.82
7 CONTRACT CONSTRUCTION (SIC 15-7)	2231.66	783.09	495.35	2519.57	112.90
8 MEAT PRODUCTS (SIC 201)	562.81	523.00	386.90	699.26	124.25
9 DAIRY PRODUCTS (SIC 202)	304.97	34.87	162.57	177.39	58.17
10 CANNED & PRESERVED FOODS (SIC 203)	222.49	142.51	172.56	192.51	86.52
11 GRAIN MILL PRODUCTS (SIC 204)	285.36	344.28	364.45	265.34	92.98
12 BEVERAGES (SIC 208)	381.99	253.77	257.57	378.58	99.11
13 FOOD PRODUCTS, NEC (SIC 205-7, 209)	710.05	619.26	731.73	598.03	84.22
14 FABRIC MILLS (SIC 221-4, 2261-2)	200.56	1415.92	606.21	1010.39	503.80
15 YARN & THREAD MILLS (SIC 2269, 228)	66.62	1211.05	393.53	884.31	1327.35
16 FLOOR COVERINGS (SIC 227)	34.62	1396.14	40.19	1390.62	4016.97
17 MISC. TEXTILE GOODS (SIC 229)	58.30	582.77	321.81	324.15	556.01
18 FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	569.53	1084.68	556.12	1098.15	192.82
19 LUMBER & WOOD PRODUCTS (SIC 24)	355.02	775.42	642.68	487.96	137.45
20 FURNITURE & FIXTURES (SIC 25)	179.47	174.98	121.55	232.91	129.78
21 PULP & PAPER MILLS (SIC 261-3)	271.24	991.73	546.12	717.32	264.46
22 PAPER PRODUCTS EXC CONTAINERS (SIC 264)	184.47	386.92	346.87	224.88	121.90
23 PAPERBOARD CONTAINERS & BOXES (SIC 265)	209.59	455.18	374.85	290.18	138.45
24 PRINTING & PUBLISHING (SIC 27)	402.13	380.81	442.82	341.00	84.80
25 CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	331.45	918.24	831.32	419.26	126.49
26 PLASTICS DRUGS & PAINTS (SIC 282-5)	456.92	1201.39	1342.35	318.83	69.78
27 PETROLEUM PRODUCTS (SIC 29)	526.12	354.43	831.33	49.49	9.41
28 RUBBER & PLASTICS PRODUCTS (SIC 30)	235.84	410.35	400.72	245.64	104.16
29 LEATHER & LEATHER PRODUCTS (SIC 31)	125.59	79.07	126.84	77.84	61.98
30 STONE, CLAY & GLASS PRODUCTS (SIC 32)	374.88	420.73	406.72	389.02	103.77
31 PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	482.67	644.22	1011.39	115.80	23.99
32 NONFERROUS METAL MFG. (SIC 333-6, 3392)	199.62	368.53	395.67	172.65	86.49
33 FABRICATED METAL PRODUCTS (SIC 34)	629.26	837.38	971.57	495.44	78.73
34 MACHINERY, EXCEPT ELECTRICAL (SIC 35)	640.44	641.85	857.05	425.46	66.43
35 ELEC. TRANSMISSION EQUIP. (SIC 361-2)	130.60	307.00	246.58	191.12	146.34
36 MISC. ELECTRICAL EQUIP. (SIC 363-9)	317.61	423.80	567.81	173.74	54.70
37 MOTOR VEHICLES & EQUIP. (SIC 371)	868.75	969.86	1050.71	788.04	90.71
38 AIRCRAFT & PARTS (SIC 372)	97.18	1878.63	573.84	1402.05	1442.79
39 TRAILER COACHES (SIC 3791)	110.01	164.84	16.56	258.29	234.80
40 OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	67.14	52.85	70.55	49.46	73.67
41 INSTRUMENTS (SIC 38)	145.20	240.28	301.20	84.45	58.16
42 MISC. MANUFACTURING (SIC 39, 19, 21)	345.72	227.76	390.02	177.78	51.42
43 TRANSPORTATION SERVICES (SIC 40-7)	906.86	1685.91	1267.43	1327.27	146.36
44 COMMUNICATIONS & UTILITIES (SIC 48-9)	1189.51	858.59	768.05	1280.51	107.65
45 WHOLESALE & RETAIL TRADE (SIC 50-9)	3683.84	2097.66	962.34	4820.28	130.85
46 FINANCE, INS., REAL ESTATE (SIC 60-6)	3908.85	2192.75	1854.85	4247.45	108.66
47 BUSINESS SERVICES (SIC 73, 81, 89)	1113.89	1149.77	1172.54	1091.90	98.03
48 OTHER SERVICES (SIC 70-2, 75-80, 82-6)	2487.84	1212.75	599.32	3102.05	124.69
49 GOVERNMENT ENTERPRISES	299.50	290.95	165.59	424.98	141.89
50 UNALLOCATED INDUSTRIES	371.57	418.64	488.77	306.51	82.49

As will be discussed in the next section, this is not to say that self-sufficient industries should be ignored. Rather, the industries representing missing links in the economy may be given priorities in the allocation of funds in order to avoid bottlenecks in production.

7.3 Income-Per-Employee Index

An alternative approach to determining which economic activities to encourage in Georgia is through use of an index of income generated per employee. Such an index is presented in Table 7.3a. It is the ratio of the total income multiplier to the total employment multiplier for an industry and should be interpreted as the income generated (direct, indirect, and induced) per additional employee in each of the industries. The index, we should stress, deals with total personal income generated throughout the economy and not just the wages and salaries paid per employee in the various industries.

In 1970, $11,213 million in personal income was created by a nonagricultural, nongovernmental labor force of 1,244,076 for an average income generated of $9,093. Thus, index values greater than $9,100 show industries which clearly contribute to higher income per capita in the State. Industries such as aircraft and parts, pulp and paper mills, beverages, miscellaneous electrical equipment, and motor vehicles clearly tend to raise per capita income in Georgia. On the other hand, industries such as apparel, leather and leather products, and other transportation equipment may add less to personal income per employee than others.

This is not to say that industries with low indices will lower per capita incomes in Georgia. They create jobs, sometimes many jobs, and if

Table 7.3a Indices of Income Generated per Employee (Direct, Indirect, and Induced) for Nonagricultural Industries in Georgia, 1970

(in $10,000)

	Industry	Index
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	- *
2	FIELD CROPS (SIC 011)	- *
3	OTHER CROPS (SIC 012, 019)	- *
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	- *
5	STONE & CLAY MINING (SIC 14 EXC 147)	.92
6	OTHER MINING (SIC 10-3, 147)	1.01
7	CONTRACT CONSTRUCTION (SIC 15-7)	.84
8	MEAT PRODUCTS (SIC 201)	.83
9	DAIRY PRODUCTS (SIC 202)	.97
10	CANNED & PRESERVED FOODS (SIC 203)	.86
11	GRAIN MILL PRODUCTS (SIC 204)	.86
12	BEVERAGES (SIC 208)	1.07
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	.88
14	FABRIC MILLS (SIC 221-4, 2261-2)	.74
15	YARN & THREAD MILLS (SIC 2269, 228)	.87
16	FLOOR COVERINGS (SIC 227)	.87
17	MISC. TEXTILE GOODS (SIC 229)	.83
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	.67
19	LUMBER & WOOD PRODUCTS (SIC 24)	.71
20	FURNITURE & FIXTURES (SIC 25)	.70
21	PULP & PAPER MILLS (SIC 261-3)	1.10
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	.79
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	.95
24	PRINTING & PUBLISHING (SIC 27)	1.01
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	.90
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	.93
27	PETROLEUM PRODUCTS (SIC 29)	.89
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	.91
29	LEATHER & LEATHER PRODUCTS (SIC 31)	.67
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	.89
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	1.03
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	.99
33	FABRICATED METAL PRODUCTS (SIC 34)	.96
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	.94
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	.88
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	1.06
37	MOTOR VEHICLES & EQUIP. (SIC 371)	1.05
38	AIRCRAFT & PARTS (SIC 372)	1.11
39	TRAILER COACHES (SIC 3791)	.89
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	.67
41	INSTRUMENTS (SIC 38)	.89
42	MISC. MANUFACTURING (SIC 39, 19, 21)	.76
43	TRANSPORTATION SERVICES (SIC 40-7)	.87
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	.93
45	WHOLESALE & RETAIL TRADE SIC 50-9)	.78
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	1.59
47	BUSINESS SERVICES (SIC 73, 81, 89)	.97
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	.89
49	GOVERNMENT ENTERPRISES	.93
50	UNALLOCATED INDUSTRIES	- *
51	HOUSEHOLDS	- *

* NOT CALCULATED

located in a high-unemployment area, they may contribute substantially to per capita income by providing second jobs in families. However, they are nothing to brag about.

7.4 Synthesis

The self-sufficiency analysis and the income-per-employee index are complementary approaches to determining which economic activities should be encouraged in Georgia. The self-sufficiency analysis identifies the industries in which increased outputs would strengthen the structure of the economy and create stronger interindustry linkages. The index permits a priority ranking of these industries for the allocation of development funds. For example, from the self-sufficiency analysis, expanded outputs are signaled for both the machinery and the leather products industries. However, the income-per-employee index shows that the machinery industry ($9,400) will generate the most personal income per job and should receive priority in the allocation of development efforts. In addition, the index provides a means for ranking presently self-sufficient industries as to income-generating potential.

It should be apparent that neither of these approaches provides a method for evaluating industries not presently located in the State. However, the development simulator presented in Chapter 8 was developed specifically for this purpose.

8

IMPACT ANALYSIS

8.1 Types of Short-Run Changes

As indicated earlier (4.4), an input-output model is commonly used to answer questions regarding the economic impact of changes on the economy. Long-term changes in the final demand for goods produced in Georgia are treated in Chapter 6, which makes baseline forecasts of industry outputs in 1980. Short-term changes may take three forms. One is a simple change in final demand, e.g. a $1,000,000 change in sales by the carpet industry to buyers outside the State. The effect of this kind of change can be examined through the multipliers presented in Chapter 5.

The second type of short-run change is a change in trade patterns. Technically, changes in trade patterns require that changes be made in the direct-requirements matrix and that the total-requirements table be recomputed before the effects of these changes can be properly evaluated. Practically, however, this involves more expertise than is assumed of users of this model. We discuss a reasonable means of approximating the effects of trade-pattern changes using the existing tables.

The third type of short-run change is the introduction of a new plant or industry into the State. This involves a change in the internal structure of the input-output model. Our development simulator provides a means for making this change and examining the effects of a potential

change on incomes and outputs in the state.

8.2 Trade-Pattern Analysis

Technically, the proper way in which to analyze the effect of a change in the trade pattern of an industry in Georgia would be to change the direct-requirements matrix to reflect the changes which we wish to examine. This is easily seen if we recall the solution to the input-output system as expressed in 4.4.2. In determining the effect of changes in final demand (y_i') on gross output (x_i'), we multiply the inverse matrix by the new final-demand vector to get the new gross output vector:

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

The direct-requirements matrix is expressed as $\underline{a}$ in this formula. As pointed out earlier (4.4.2), each a_{ij} in this table is the product of a technical production coefficient, p_{ij}, and a regional trade coefficient, t_{ij}. The technical production coefficient is the proportion of total inputs purchased from industry $\underline{i}$ by industry $\underline{j}$, and the regional trade coefficient is the proportion of this purchase made in the state.

In a proper trade-pattern analysis, we would be attempting to demonstrate the effect of changes in some of the t_{ij} in the regional trade coefficient matrix, $\underline{t}$. And we should consequently change the matrix $\underline{t}$ to reflect these changes and so change the $\underline{a}$ matrix. But this is a complex change and should be made by persons highly familiar with the model and with substantial thought.

An alternative solution ignores this technical problem to yield an acceptable first approximation to the effect of trade-pattern changes. We suggest the following. Say we have estimated the trade changes which might

take place as the result of, e.g., a marketing conference or a "Buy Georgia" campaign by some particular industry. We sum these expected trade changes in dollar terms to show the additional sales expected in Georgia. We then multiply the additional sales expected in each industry by the output multiplier (or whichever multiplier series we desire) of the selling industry. The result is an approximation of the impact of the trade-pattern change. In effect, we introduce changes in final demand corresponding to the expected changes in local sales. The estimated impact is conservative in that we have ignored the indirect effects on production in the selling industries themselves.

8.3 Development Simulators

8.3.1 Introduction

While the general list of multipliers discussed above (5.3.5) has been estimated for each of the 50 industries in the published Georgia model (and for the 29-industry and 5-sector aggregations as well), specific interest may center on some of the more detailed industries defined in the 140-industry working tables. This interest may be satisfied with what we call the "development simulator." The simulator is a set of procedures designed to add another industry to the published data and to examine its characteristics as part of the economy.

The simulator works in two ways. One is to isolate a detailed industry which already operates in Georgia but which is normally defined as part of an aggregated industry in the published table. We call this version a "new-plant simulator." The other way is to introduce a row and a column representing an industry not previously existing in the state. This approach

is labeled the "new-industry simulator."

8.3.2 New-Plant Simulator

The new-plant simulator is actually a reorganization of the published table. We simply specify that the aggregation of industries in the 140-industry working table be expanded from 50 to 51 industries. The 51st industry is the one in which the new plant is classified. In addition, we specify the size of plant which we are considering as an addition to the State's economy. The model is developed as usual. Since little benefit accrues from the printouts of the completely revised model, we print only a couple of check tables in addition to the special simulator table.

This special simulator table is shown here in Figure 8.3a. Our example covers the addition of a $5,000,000 additional output in the converted paper products industry. Figure 8.3a shows the computer printout recording computed changes in the Georgia economy resulting from the additional plant (or expansion of existing capacity) in terms of industry outputs, employment, personal income, city and county government revenue, and State government revenue. The development of each of the five total multipliers for the new plant can be seen in the table. Column 1, for example, reports each of the summed elements used in computing the total output multiplier times $5,000,000. The sum of the column is the total output multiplier times $5,000,000. Each of the last four columns in the table shows the application of the various multipliers discussed in Chapter 5 to estimating the impact of a new plant on the State's economy.

8.3.3 New-Industry Simulator

While the new-plant simulator is merely a twist on the aggregation procedure, the new-industry simulator is more complex. In this case, the

Figure 8.3a Illustration of Computer Printout of the Development Simulator, New-Plant Option

CHANGES IN THE GEORGIA ECONOMY RESULTING FROM AN ADDITIONAL $ 5.000 MILLION PLANT IN THE CONV PAPER, PROD NEC EX CONTNR, BXS INDUSTRY
(MILLIONS OF DOLLARS)

	--- CHANGE DUE TO NEW PLANT IN ---					
INDUSTRY	OUTPUT VALUE	OUTPUT PERCENT	NUMBER OF EMPLOYEES	PERSONAL INCOME	CITY & COUNTY REVENUE	STATE REVENUE
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.1	0.0	0.	0.0	0.0	0.0
FIELD CROPS (SIC 011)	0.0	0.0	0.	0.0	0.0	0.0
OTHER CROPS (SIC 012, 019)	0.0	0.0	0.	0.0	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	0.0	0.0	1.	0.0	0.0	0.0
OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.	0.0	0.0	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	0.7	0.0	23.	0.2	0.0	0.0
MEAT PRODUCTS (SIC 201)	0.1	0.0	1.	0.0	0.0	0.0
DAIRY PRODUCTS (SIC 202)	0.0	0.0	1.	0.0	0.0	0.0
CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.	0.0	0.0	0.0
GRAIN MILL PRODUCTS (SIC 204)	0.0	0.0	0.	0.0	0.0	0.0
BEVERAGES (SIC 208)	0.0	0.0	1.	0.0	0.0	0.0
FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.1	0.0	2.	0.0	0.0	0.0
FABRIC MILLS (SIC 221-4, 2261-2)	0.0	0.0	1.	0.0	0.0	0.0
YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.	0.0	0.0	0.0
FLOOR COVERINGS (SIC 227)	0.0	0.0	0.	0.0	0.0	0.0
MISC. TEXTILE GOODS (SIC 229)	0.0	0.0	0.	0.0	0.0	0.0
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.1	0.0	4.	0.0	0.0	0.0
LUMBER & WOOD PRODUCTS (SIC 24)	0.1	0.0	6.	0.0	0.0	0.0
FURNITURE & FIXTURES (SIC 25)	0.0	0.0	1.	0.0	0.0	0.0
PULP & PAPER MILLS (SIC 261-3)	1.5	0.2	21.	0.3	0.0	0.0
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0	0.0	1.	0.0	0.0	0.0
PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.2	0.1	6.	0.1	0.0	0.0
PRINTING & PUBLISHING (SIC 27)	0.1	0.0	6.	0.1	0.0	0.0
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.1	0.0	2.	0.0	0.0	0.0
PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0	0.0	1.	0.0	0.0	0.0
PETROLEUM PRODUCTS (SIC 29)	0.0	0.0	0.	0.0	0.0	0.0
RUBBER & PLASTICS PRODUCTS (SIC 30)	0.1	0.1	5.	0.0	0.0	0.0
LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	0.	0.0	0.0	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.1	0.0	2.	0.0	0.0	0.0
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.	0.0	0.0	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0	0.0	1.	0.0	0.0	0.0
FABRICATED METAL PRODUCTS (SIC 34)	0.1	0.0	2.	0.0	0.0	0.0
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0	0.0	1.	0.0	0.0	0.0
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.	0.0	0.0	0.0
MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0	0.0	0.	0.0	0.0	0.0
MOTOR VEHICLES & EQUIP. (SIC 371)	0.0	0.0	0.	0.0	0.0	0.0
AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.	0.0	0.0	0.0
TRAILER COACHES (SIC 3791)	0.0	0.0	1.	0.0	0.0	0.0
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.	0.0	0.0	0.0
INSTRUMENTS (SIC 38)	0.0	0.0	0.	0.0	0.0	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	0.0	0.0	1.	0.0	0.0	0.0
TRANSPORTATION SERVICES (SIC 40-7)	0.2	0.0	11.	0.1	0.0	0.0
COMMUNICATIONS & UTILITIES (SIC 48-9)	0.3	0.0	10.	0.1	0.0	0.0
WHOLESALE & RETAIL TRADE (SIC 50-9)	1.0	0.0	74.	0.5	0.0	0.1
FINANCE, INS., REAL ESTATE (SIC 60-6)	0.7	0.0	13.	0.3	0.0	0.0
BUSINESS SERVICES (SIC 73, 81, 89)	0.3	0.0	10.	0.1	0.0	0.0
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.5	0.0	21.	0.2	0.0	0.0
GOVERNMENT ENTERPRISES	0.1	0.0	6.	0.0	0.0	0.0
UNALLOCATED INDUSTRIES	0.1	0.0	0.	0.0	0.0	0.0
CONV PAPER, PROD NEC EX CONTNR, BXS	5.0	3.5	203.	1.0	0.0	0.0
HOUSEHOLDS	3.5	0.0	0.	0.0	0.1	0.1
GROSS SAVINGS	1.0	0.0	0.	0.0	0.0	0.0
CITY & COUNTY GOVERNMENT	0.3	0.0	0.	0.2	0.0	0.0
STATE GOVERNMENT	0.3	0.0	0.	0.1	0.1	0.0
TOTAL	17.2	4.6	440.	3.6	0.3	0.3

industry does not presently exist in the state, so a row of potential sales and a column of probable purchases must be constructed for it. We use the noncompetitive-imports matrix as the basis for the sales row and a technology matrix based on the national input-output table as the basis for the purchases column.

The noncompetitive imports row for the new industry is moved up into the local-industry matrix. The column of national input-output coefficients for the new industry is multiplied by the expected gross output of the new industry and is moved over into the local-industry matrix. We then apply a modified supply-demand pool technique to estimating the regional trade patterns associated with the industry. If it produces more than is needed of its product in the State, we satisfy local demands and export the rest. If it supplies less than is demanded, we satisfy local demands to the extent possible and import the rest. We use average trade coefficients for each of its suppliers as first estimates of trade coefficients which we then apply to cell values in the column for the new industry. We then aggregate to 51 industries, calculate direct requirements, invert, and multiply back through by the total final-demand vector less households to obtain estimates of gross outputs of industries after the new industry is established in the State. Gross outputs of industries existing in 1970 are subtracted from these newly estimated gross outputs and these changes in gross outputs are used to construct the simulator table, which is identical in format to the table for the new-plant simulator. Figure 8.3b shows the printout resulting from the introduction of a $19,000,000 plant in the wet corn milling industry.

Figure 8.3b Illustration of Computer Printout of the Development Simulator, New-Industry Option

CHANGES IN THE GEORGIA ECONOMY RESULTING FROM AN ADDITIONAL $ 19.000 MILLION PLANT IN THE WET CORN MILLING INDUSTRY
(MILLIONS OF DOLLARS)

	--- CHANGE DUE TO NEW PLANT IN ---					
INDUSTRY	OUTPUT VALUE	OUTPUT PERCENT	NUMBER OF EMPLOYEES	PERSONAL INCOME	CITY & COUNTY REVENUE	STATE REVENUE
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.2	0.0	0.	0.1	0.0	0.0
FIELD CROPS (SIC 011)	1.0	0.2	0.	0.4	0.1	0.0
OTHER CROPS (SIC 012, 019)	0.1	0.1	83.	0.1	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.1	0.0	3.	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	0.1	0.1	3.	0.0	0.0	0.0
OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.	0.0	0.0	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	5.4	0.2	183.	1.4	0.1	0.0
MEAT PRODUCTS (SIC 201)	0.2	0.0	3.	0.0	0.0	0.0
DAIRY PRODUCTS (SIC 202)	0.1	0.1	2.	0.0	0.0	0.0
CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	1.	0.0	0.0	0.0
GRAIN MILL PRODUCTS (SIC 204)	0.2	0.1	2.	0.0	0.0	0.0
BEVERAGES (SIC 208)	0.1	0.0	2.	0.0	0.0	0.0
FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.2	0.0	5.	0.0	0.0	0.0
FABRIC MILLS (SIC 221-4, 2261-2)	0.0	0.0	1.	0.0	0.0	0.0
YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.	0.0	0.0	0.0
FLOOR COVERINGS (SIC 227)	0.0	0.0	0.	0.0	0.0	0.0
MISC. TEXTILE GOODS (SIC 229)	0.0	0.0	0.	0.0	0.0	0.0
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.1	0.0	8.	0.0	0.0	0.0
LUMBER & WOOD PRODUCTS (SIC 24)	0.3	0.1	13.	0.1	0.0	0.0
FURNITURE & FIXTURES (SIC 25)	0.2	0.1	8.	0.0	0.0	0.0
PULP & PAPER MILLS (SIC 261-3)	0.1	0.0	1.	0.0	0.0	0.0
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.2	0.1	5.	0.0	0.0	0.0
PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0	0.0	1.	0.0	0.0	0.0
PRINTING & PUBLISHING (SIC 27)	0.3	0.1	13.	0.1	0.0	0.0
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.1	0.0	2.	0.0	0.0	0.0
PLASTICS DRUGS & PAINTS (SIC 282-5)	0.1	0.0	2.	0.0	0.0	0.0
PETROLEUM PRODUCTS (SIC 29)	0.1	0.1	1.	0.0	0.0	0.0
RUBBER & PLASTICS PRODUCTS (SIC 30)	0.1	0.0	2.	0.0	0.0	0.0
LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	1.	0.0	0.0	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.4	0.1	13.	0.1	0.0	0.0
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	1.	0.0	0.0	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0	0.0	1.	0.0	0.0	0.0
FABRICATED METAL PRODUCTS (SIC 34)	0.3	0.1	9.	0.1	0.0	0.0
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.4	0.1	11.	0.1	0.0	0.0
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	2.	0.0	0.0	0.0
MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.1	0.0	1.	0.0	0.0	0.0
MOTOR VEHICLES & EQUIP. (SIC 371)	0.1	0.0	2.	0.0	0.0	0.0
AIRCRAFT & PARTS (SIC 372)	0.1	0.0	2.	0.0	0.0	0.0
TRAILER COACHES (SIC 3791)	0.1	0.0	2.	0.0	0.0	0.0
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	1.	0.0	0.0	0.0
INSTRUMENTS (SIC 38)	0.0	0.0	0.	0.0	0.0	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	0.0	0.0	2.	0.0	0.0	0.0
TRANSPORTATION SERVICES (SIC 40-7)	1.5	0.1	92.	0.8	0.0	0.0
COMMUNICATIONS & UTILITIES (SIC 48-9)	0.9	0.1	27.	0.2	0.0	0.0
WHOLESALE & RETAIL TRADE (SIC 50-9)	4.2	0.1	297.	2.1	0.1	0.5
FINANCE, INS., REAL ESTATE (SIC 60-6)	2.3	0.1	41.	1.1	0.1	0.0
BUSINESS SERVICES (SIC 73, 81, 89)	0.8	0.1	33.	0.3	0.0	0.0
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	1.5	0.0	62.	0.5	0.0	0.0
GOVERNMENT ENTERPRISES	0.3	0.1	21.	0.1	0.0	0.0
UNALLOCATED INDUSTRIES	0.2	0.1	0.	0.0	0.0	0.0
WET CORN MILLING	19.0	100.0	0.	6.9	0.1	0.1
HOUSEHOLDS	9.9	0.1	0.	0.1	0.2	0.2
GROSS SAVINGS	9.3	0.4	0.	0.0	0.0	0.0
CITY & COUNTY GOVERNMENT	2.2	0.2	0.	1.3	0.0	0.0
STATE GOVERNMENT	1.0	0.1	0.	0.4	0.3	0.0
TOTAL	64.1	103.3	968.	16.8	1.0	1.1

9

A MARKET INFORMATION SYSTEM FOR GEORGIA

9.1 The Input-Output Table as a Market Information System

Showing the sales and purchase patterns of industries in an economy, an input-output table is an excellent base for a market information system. This chapter presents the tables for a sample market analysis produced on the Georgia State computer.

As pointed out in the following section, the Georgia market information system presents data from the Georgia input-output tables in a less complex form than the transactions table in an attempt to clearly delineate market areas. Rows in the State table and in the competitive-imports table are used to identify sales patterns in the State. Columns in these tables are used to identify purchase patterns. Similar tables present projections to 1980 of these sales and purchases. Two other tables present sales and purchase patterns for the Southeast as derived from an input-output table approximated for Georgia and the five contiguous states.

9.2 A Sample Market Analysis

The following text is derived from the material to accompany each market analysis released to the public. It briefly describes the analysis and is followed by copies of the printed tables. Tables for only one of

the analyses derived from the 50-industry input-output tables are included. The tables available for 105 more-detailed industries are similar but do not include data for the Southeast. Figure 9.2a is a sample market analysis derived from the 50-industry Georgia Economic Model.

A basic component of the Georgia information system is the inter-industry transactions table, or input-output table. As published, the table delineates in its columns purchases by industries and consuming sectors from fifty other industries in and outside the State. In its rows, the table shows sales by industries in the State to fifty other industries in the State and to six consuming sectors. An "imports table" of similar format shows sales by industries outside the State to Georgia's industries and consumers. These industries are defined in general agreement with the two-and three-digit levels of aggregation of the Standard Industrial Classification. On special request, information is available on industries according to three- or four-digit SIC codes.

To make the system more useful as a source of market information, we also constructed a similar model of the Southeast, including Georgia and the five contiguous states. Only published data was used in the Southeastern Model. While tables are printed in the same formats as for Georgia tables, their interpretation is different. Since trade patterns have not been determined in detail, "sales outside the region" represent surplus production in the Southeast. In the same way, "imports from outside the region" represent deficit production by local supplying industries.

Projections of market size in 1980 are also made for the Georgia model. These projections of market transactions, industry by industry, are based on recent growth rates for Georgia industries.

Figure 9.2a A Sample Market Analysis

SUMMARY OF THE MARKETS IN GEORGIA AND THE SOUTHEAST FOR THE
PAPER PRODUCTS EXC CONTAINERS (SIC 264) INDUSTRY

1. TOTAL SALES IN GEORGIA, 1970

PURCHASES BY FIRMS IN GEORGIA ARE ESTIMATED AT $ 403.9 MILLIONS FOR PRODUCTS OF THIS INDUSTRY IN 1970. 55.7% OF TOTAL SALES ARE PRODUCED BY FIRMS LOCATED WITHIN THE STATE, LEAVING 44.3% OR $ 179.0 MILLIONS PRODUCED BY OUT-OF-STATE PRODUCERS.

2. TOTAL PRODUCTION IN GEORGIA, 1970

FIRMS IN GEORGIA PRODUCED OUTPUT VALUED AT $ 224.9 MILLIONS IN 1970 SELLING ABOUT 76.3% WITHIN THE STATE. 36 ESTABLISHMENTS, EMPLOYING APPROXIMATELY 7210 WORKERS, PRODUCED GOODS IN GEORGIA IN 1970 *; THIS COMPARES WITH 27 ESTABLISHMENTS WITH 5988 EMPLOYEES IN 1964.

3. MARKET GROWTH IN GEORGIA, 1964-70, AND PROJECTIONS TO 1980

THE MARKET FOR THIS INDUSTRY HAS GROWN AT AN AVERAGE ANNUAL RATE OF 2.7%. IF GROWTH CONTINUES AT THIS RATE, THE MARKET WILL REACH $ 553.8 MILLIONS BY 1980.

4. INDUSTRY GROWTH, 1964-70, AND PROJECTION TO 1980

THE INDUSTRY HAS GROWN AT AN AVERAGE ANNUAL RATE OF 2.8%. IF GROWTH CONTINUES AT THIS RATE AND OTHER CONDITIONS REMAIN THE SAME, GEORGIA PRODUCERS WILL BE CAPABLE OF SERVING 52.1% OF THE PROJECTED MARKET IN 1980.

5. TOTAL SALES IN THE SOUTHEAST, 1970

PURCHASES BY FIRMS IN THE SOUTHEAST ARE ESTIMATED AT $ 1067.0 MILLIONS IN 1970. 85.3% OF TOTAL SALES COULD BE SUPPLIED BY SOUTHEASTERN PRODUCERS. (THIS LEAVES AT LEAST 14.7% TO BE SUPPLIED BY OUTSIDE PRODUCERS.)

6. TOTAL PRODUCTION IN THE SOUTHEAST, 1970

FIRMS IN THE SOUTHEAST PRODUCED OUTPUT WITH VALUE ESTIMATED AT $ 909.8 MILLIONS IN 1970. THIS REPRESENTS APPROXIMATELY 187 ESTABLISHMENTS EMPLOYING ABOUT 25514 WORKERS.

* NUMBER OF ESTABLISHMENTS IN GEORGIA, IN 1970, BY EMPLOYMENT-SIZE CLASS ESTIMATED FROM COUNTY BUSINESS PATTERNS AND LOCAL EMPLOYMENT DATA.

EMPLOYEES	NUMBER OF UNITS
1-3	3
4-7	2
8-19	2
20-49	9
50-99	6
100-249	5
250-499	5
500 OR MORE	4

Figure 9.2a A Sample Market Analysis (continued)

TABLE 1. SUMMARY OF SALES IN GEORGIA IN 1970 BY THE PAPER PRODUCTS EXC CONTAINERS (SIC 264) INDUSTRY (MILLIONS OF DOLLARS)

PURCHASER OR USER GA. INDUSTRY	TOTAL SALES		SALES BY GA. PRODUCERS		SALES BY OTHER PRODUCERS	
	VALUE	PERCENT	VALUE	PERCENT	VALUE	PERCENT
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.7	0.2	0.1	0.0	0.7	0.2
FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	0.7	0.2	0.0	0.0	0.7	0.2
OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	9.1	2.2	6.7	1.7	2.3	0.6
MEAT PRODUCTS (SIC 201)	1.8	0.4	0.1	0.0	1.6	0.4
DAIRY PRODUCTS (SIC 202)	1.8	0.4	0.1	0.0	1.7	0.4
CANNED & PRESERVED FOODS (SIC 203)	5.0	1.2	0.3	0.1	4.7	1.2
GRAIN MILL PRODUCTS (SIC 204)	6.3	1.6	0.4	0.1	5.9	1.5
BEVERAGES (SIC 208)	3.4	0.8	0.2	0.1	3.2	0.8
FOOD PRODUCTS, NEC (SIC 205-7, 209)	8.0	2.0	0.4	0.1	7.6	1.9
FABRIC MILLS (SIC 221-4, 2261-2)	2.8	0.7	2.6	0.7	0.2	0.0
YARN & THREAD MILLS (SIC 2269, 228)	0.4	0.1	0.1	0.0	0.4	0.1
FLOOR COVERINGS (SIC 227)	56.3	13.9	3.8	1.0	52.5	13.0
MISC. TEXTILE GOODS (SIC 229)	0.2	0.1	0.2	0.0	0.1	0.0
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	1.3	0.3	0.8	0.2	0.5	0.1
LUMBER & WOOD PRODUCTS (SIC 24)	1.3	0.3	0.4	0.1	0.9	0.2
FURNITURE & FIXTURES (SIC 25)	0.2	0.0	0.1	0.0	0.1	0.0
PULP & PAPER MILLS (SIC 261-3)	7.3	1.8	7.1	1.8	0.2	0.0
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.4	0.1	0.0	0.0	0.4	0.1
PAPERBOARD CONTAINERS & BOXES (SIC 265)	2.8	0.7	0.9	0.2	1.9	0.5
PRINTING & PUBLISHING (SIC 27)	3.2	0.8	3.0	0.7	0.2	0.0
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	6.7	1.7	0.6	0.2	6.1	1.5
PLASTICS DRUGS & PAINTS (SIC 282-5)	1.7	0.4	0.2	0.1	1.5	0.4
PETROLEUM PRODUCTS (SIC 29)	2.6	0.7	2.1	0.5	0.5	0.1
RUBBER & PLASTICS PRODUCTS (SIC 30)	1.4	0.3	1.1	0.3	0.3	0.1
LEATHER & LEATHER PRODUCTS (SIC 31)	0.1	0.0	0.0	0.0	0.1	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	4.4	1.1	0.5	0.1	3.9	1.0
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.1	0.0	0.0	0.0	0.0	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.4	0.1	0.0	0.0	0.3	0.1
FABRICATED METAL PRODUCTS (SIC 34)	1.6	0.4	0.5	0.1	1.1	0.3
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.4	0.1	0.2	0.1	0.1	0.0
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	1.4	0.4	0.1	0.0	1.3	0.3
MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.4	0.1	0.3	0.1	0.1	0.0
MOTOR VEHICLES & EQUIP. (SIC 371)	0.1	0.0	0.0	0.0	0.1	0.0
AIRCRAFT & PARTS (SIC 372)	0.9	0.2	0.2	0.0	0.7	0.2
TRAILER COACHES (SIC 3791)	3.2	0.8	3.2	0.8	0.1	0.0
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0
INSTRUMENTS (SIC 38)	0.3	0.1	0.3	0.1	0.0	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	0.3	0.1	0.2	0.0	0.2	0.0
TRANSPORTATION SERVICES (SIC 40-7)	0.3	0.1	0.1	0.0	0.2	0.0
COMMUNICATIONS & UTILITIES (SIC 48-9)	0.6	0.1	0.3	0.1	0.3	0.1
WHOLESALE & RETAIL TRADE (SIC 50-9)	20.6	5.1	3.0	0.8	17.5	4.3
FINANCE, INS., REAL ESTATE (SIC 60-6)	3.1	0.8	1.5	0.4	1.5	0.4
BUSINESS SERVICES (SIC 73, 81, 89)	2.8	0.7	0.5	0.1	2.3	0.6
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	5.3	1.3	0.8	0.2	4.5	1.1
GOVERNMENT ENTERPRISES	0.6	0.2	0.2	0.1	0.4	0.1
UNALLOCATED INDUSTRIES	14.8	3.7	1.0	0.3	13.7	3.4
TOTAL LOCAL INDUSTRY SALES	187.2	46.3	44.7	11.1	142.5	35.3
FINAL USERS						
GEORGIA HOUSEHOLD CONSUMERS	37.4	9.3	1.8	0.4	35.6	8.8
GEORGIA PRIVATE INVESTMENT	0.0	0.0	0.0	0.0	0.0	0.0
GEORGIA LOCAL GOVERNMENTS	0.6	0.1	0.1	0.0	0.5	0.1
GEORGIA STATE GOVERNMENT	0.6	0.1	0.1	0.0	0.4	0.1
FEDERAL GOVERNMENT, DEFENSE	0.2	0.1	0.2	0.1	0.0	0.0
FEDERAL GOVERNMENT, OTHER	0.2	0.0	0.2	0.0	0.0	0.0
PRIVATE USERS OUTSIDE GEORGIA	177.7	44.0	177.7	44.0	0.0	0.0
TOTAL FINAL SALES	216.7	53.7	180.2	44.6	36.5	9.0
TOTAL SALES	403.9	100.0	224.9	55.7	179.0	44.3

Figure 9.2a A Sample Market Analysis (continued)

TABLE 2. SUMMARY OF PURCHASES AND PAYMENTS IN GEORGIA IN 1970 BY THE PAPER PRODUCTS EXC CONTAINERS (SIC 264) INDUSTRY
(MILLIONS OF DOLLARS)

PRODUCER OF GOOD OR SERVICE GA. INDUSTRY	TOTAL PURCHASES		PURCHASES FROM GA. PRODUCERS		PURCHASES FROM OTHER PRODUCERS	
	VALUE	PERCENT	VALUE	PERCENT	VALUE	PERCENT
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0	0.0
FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	0.8	0.4	0.8	0.4	0.0	0.0
OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	1.6	0.7	1.6	0.7	0.0	0.0
MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0
DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0
CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0	0.0
GRAIN MILL PRODUCTS (SIC 204)	1.3	0.6	1.3	0.6	0.0	0.0
BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0
FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.1	0.0	0.0	0.0	0.1	0.0
FABRIC MILLS (SIC 221-4, 2261-2)	0.7	0.3	0.3	0.1	0.4	0.2
YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	0.0	0.0	0.0
FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0	0.0	0.0
MISC. TEXTILE GOODS (SIC 229)	0.1	0.0	0.1	0.0	0.0	0.0
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.9	0.4	0.8	0.4	0.1	0.1
LUMBER & WOOD PRODUCTS (SIC 24)	12.9	5.7	12.8	5.7	0.2	0.1
FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.0	0.0	0.0
PULP & PAPER MILLS (SIC 261-3)	60.6	26.9	40.2	17.9	20.4	9.1
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.4	0.2	0.0	0.0	0.4	0.2
PAPERBOARD CONTAINERS & BOXES (SIC 265)	13.2	5.9	8.1	3.6	5.0	2.2
PRINTING & PUBLISHING (SIC 27)	3.4	1.5	2.5	1.1	1.0	0.4
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	7.9	3.5	4.4	2.0	3.4	1.5
PLASTICS DRUGS & PAINTS (SIC 282-5)	7.9	3.5	0.5	0.2	7.4	3.3
PETROLEUM PRODUCTS (SIC 29)	1.8	0.8	0.1	0.1	1.7	0.7
RUBBER & PLASTICS PRODUCTS (SIC 30)	5.6	2.5	3.8	1.7	1.7	0.8
LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	0.0	0.0	0.0	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.5	0.2	0.0	0.0	0.4	0.2
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.0	0.0	0.0	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.6	0.3	0.5	0.2	0.1	0.1
FABRICATED METAL PRODUCTS (SIC 34)	1.2	0.5	0.3	0.1	1.0	0.4
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.6	0.3	0.0	0.0	0.6	0.3
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0
MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.7	0.3	0.0	0.0	0.6	0.3
MOTOR VEHICLES & EQUIP. (SIC 371)	0.0	0.0	0.0	0.0	0.0	0.0
AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0	0.0	0.0
TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0
INSTRUMENTS (SIC 38)	0.2	0.1	0.2	0.1	0.0	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	0.2	0.1	0.1	0.1	0.0	0.0
TRANSPORTATION SERVICES (SIC 40-7)	4.6	2.0	2.0	0.9	2.6	1.2
COMMUNICATIONS & UTILITIES (SIC 48-9)	8.1	3.6	8.0	3.5	0.1	0.1
WHOLESALE & RETAIL TRADE (SIC 50-9)	5.8	2.6	5.6	2.5	0.2	0.1
FINANCE, INS., REAL ESTATE (SIC 60-6)	3.1	1.4	2.1	0.9	1.0	0.5
BUSINESS SERVICES (SIC 73, 81, 89)	3.4	1.5	2.3	1.0	1.2	0.5
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.8	0.4	0.7	0.3	0.1	0.0
GOVERNMENT ENTERPRISES	0.2	0.1	0.2	0.1	0.0	0.0
UNALLOCATED INDUSTRIES	2.7	1.2	1.7	0.8	0.9	0.4
TOTAL LOCAL INDUSTRY PURCHASES	151.8	67.5	101.1	44.9	50.7	22.6
PRIMARY INPUTS						
GEORGIA HOUSEHOLDS	45.9	20.4	45.9	20.4	0.0	0.0
CAPITAL OWNERSHIP	11.3	5.0	11.3	5.0	0.0	0.0
GEORGIA LOCAL GOVERNMENTS	1.3	0.6	1.3	0.6	0.0	0.0
GEORGIA STATE GOVERNMENT	1.2	0.5	1.2	0.5	0.0	0.0
FEDERAL GOVERNMENT	10.7	4.8	10.7	4.8	0.0	0.0
TOTAL FINAL PAYMENTS	70.4	31.3	70.4	31.3	0.0	0.0
NON-COMPETITIVE IMPORTS	2.6	1.2	0.0	0.0	2.6	1.2
TOTAL PURCHASES AND PAYMENTS	224.9	100.0	171.5	76.3	53.4	23.7

Figure 9.2a A Sample Market Analysis (continued)

TABLE 3. SUMMARY OF SALES IN GEORGIA IN 1980 BY THE PAPER PRODUCTS EXC CONTAINERS (SIC 264) INDUSTRY (MILLIONS OF DOLLARS)

PURCHASER OR USER GA. INDUSTRY	TOTAL SALES		SALES BY GA. PRODUCERS		SALES BY OTHER PRODUCERS	
	VALUE	PERCENT	VALUE	PERCENT	VALUE	PERCENT
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	1.1	0.2	0.1	0.0	1.1	0.2
FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	0.9	0.2	0.1	0.0	0.9	0.2
OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	13.0	2.3	8.6	1.6	4.4	0.8
MEAT PRODUCTS (SIC 201)	2.4	0.4	0.2	0.0	2.2	0.4
DAIRY PRODUCTS (SIC 202)	1.5	0.3	0.1	0.0	1.4	0.2
CANNED & PRESERVED FOODS (SIC 203)	2.1	0.4	0.1	0.0	2.0	0.4
GRAIN MILL PRODUCTS (SIC 204)	7.1	1.3	0.4	0.1	6.7	1.2
BEVERAGES (SIC 208)	4.0	0.7	0.3	0.0	3.8	0.7
FOOD PRODUCTS, NEC (SIC 205-7, 209)	9.8	1.8	0.5	0.1	9.3	1.7
FABRIC MILLS (SIC 221-4, 2261-2)	2.5	0.5	2.1	0.4	0.4	0.1
YARN & THREAD MILLS (SIC 2269, 228)	0.6	0.1	0.1	0.0	0.6	0.1
FLOOR COVERINGS (SIC 227)	99.8	18.0	6.1	1.1	93.7	16.9
MISC. TEXTILE GOODS (SIC 229)	0.4	0.1	0.2	0.0	0.1	0.0
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	1.7	0.3	0.9	0.2	0.7	0.1
LUMBER & WOOD PRODUCTS (SIC 24)	1.0	0.2	0.3	0.1	0.7	0.1
FURNITURE & FIXTURES (SIC 25)	0.2	0.0	0.1	0.0	0.2	0.0
PULP & PAPER MILLS (SIC 261-3)	9.2	1.7	8.0	1.5	1.2	0.2
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.5	0.1	0.0	0.0	0.5	0.1
PAPERBOARD CONTAINERS & BOXES (SIC 265)	3.8	0.7	1.0	0.2	2.7	0.5
PRINTING & PUBLISHING (SIC 27)	4.5	0.8	3.8	0.7	0.7	0.1
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	8.4	1.5	0.7	0.1	7.7	1.4
PLASTICS DRUGS & PAINTS (SIC 282-5)	2.8	0.5	0.3	0.1	2.4	0.4
PETROLEUM PRODUCTS (SIC 29)	3.6	0.7	2.6	0.5	1.0	0.2
RUBBER & PLASTICS PRODUCTS (SIC 30)	2.7	0.5	1.8	0.3	0.8	0.1
LEATHER & LEATHER PRODUCTS (SIC 31)	0.1	0.0	0.0	0.0	0.1	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	5.5	1.0	0.6	0.1	4.9	0.9
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.1	0.0	0.0	0.0	0.1	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.7	0.1	0.0	0.0	0.7	0.1
FABRICATED METAL PRODUCTS (SIC 34)	2.1	0.4	0.6	0.1	1.4	0.3
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.5	0.1	0.3	0.1	0.2	0.0
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	2.4	0.4	0.2	0.0	2.2	0.4
MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.5	0.1	0.4	0.1	0.2	0.0
MOTOR VEHICLES & EQUIP. (SIC 371)	0.1	0.0	0.0	0.0	0.1	0.0
AIRCRAFT & PARTS (SIC 372)	1.4	0.3	0.3	0.0	1.2	0.2
TRAILER COACHES (SIC 3791)	6.8	1.2	6.0	1.1	0.8	0.2
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0
INSTRUMENTS (SIC 38)	0.5	0.1	0.4	0.1	0.1	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	0.5	0.1	0.2	0.0	0.3	0.1
TRANSPORTATION SERVICES (SIC 40-7)	0.5	0.1	0.2	0.0	0.3	0.1
COMMUNICATIONS & UTILITIES (SIC 48-9)	0.9	0.2	0.4	0.1	0.5	0.1
WHOLESALE & RETAIL TRADE (SIC 50-9)	29.8	5.4	3.9	0.7	25.8	4.7
FINANCE, INS., REAL ESTATE (SIC 60-6)	4.3	0.8	1.9	0.3	2.3	0.4
BUSINESS SERVICES (SIC 73, 81, 89)	5.2	0.9	0.8	0.1	4.4	0.8
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	8.3	1.5	1.1	0.2	7.2	1.3
GOVERNMENT ENTERPRISES	0.8	0.2	0.3	0.1	0.6	0.1
UNALLOCATED INDUSTRIES	14.8	2.7	0.9	0.2	13.8	2.5
TOTAL LOCAL INDUSTRY SALES	269.5	48.7	57.1	10.3	212.4	38.3
FINAL USERS						
GEORGIA HOUSEHOLD CONSUMERS	53.7	9.7	2.3	0.4	51.4	9.3
GEORGIA PRIVATE INVESTMENT	0.0	0.0	0.0	0.0	0.0	0.0
GEORGIA LOCAL GOVERNMENTS	1.0	0.2	0.2	0.0	0.8	0.1
GEORGIA STATE GOVERNMENT	1.0	0.2	0.2	0.0	0.8	0.1
FEDERAL GOVERNMENT, DEFENSE	0.3	0.1	0.3	0.1	0.0	0.0
FEDERAL GOVERNMENT, OTHER	0.3	0.1	0.3	0.1	0.0	0.0
PRIVATE USERS OUTSIDE GEORGIA	227.9	41.2	227.9	41.2	0.0	0.0
TOTAL FINAL SALES	284.4	51.3	231.3	41.8	53.1	9.6
TOTAL SALES	553.8	100.0	288.4	52.1	265.4	47.9

Figure 9.2a A Sample Market Analysis (continued)

TABLE 4. SUMMARY OF PURCHASES AND PAYMENTS IN GEORGIA IN 1980 BY THE PAPER PRODUCTS EXC CONTAINERS (SIC 264) INDUSTRY
(MILLIONS OF DOLLARS)

PRODUCER OF GOOD OR SERVICE GA. INDUSTRY	TOTAL PURCHASES		PURCHASES FROM GA. PRODUCERS		PURCHASES FROM OTHER PRODUCERS	
	VALUE	PERCENT	VALUE	PERCENT	VALUE	PERCENT
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0	0.0
FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	1.0	0.4	1.0	0.4	0.0	0.0
OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	2.1	0.7	2.0	0.7	0.0	0.0
MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0
DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0
CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0	0.0
GRAIN MILL PRODUCTS (SIC 204)	1.6	0.6	1.6	0.6	0.0	0.0
BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0
FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.1	0.0	0.0	0.0	0.1	0.0
FABRIC MILLS (SIC 221-4, 2261-2)	0.9	0.3	0.4	0.1	0.5	0.2
YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	0.0	0.0	0.0
FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0	0.0	0.0
MISC. TEXTILE GOODS (SIC 229)	0.1	0.0	0.1	0.0	0.0	0.0
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	1.2	0.4	1.0	0.4	0.2	0.1
LUMBER & WOOD PRODUCTS (SIC 24)	16.6	5.7	16.4	5.7	0.2	0.1
FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.0	0.0	0.0
PULP & PAPER MILLS (SIC 261-3)	77.7	26.9	51.6	17.9	26.1	9.1
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.5	0.2	0.0	0.0	0.5	0.2
PAPERBOARD CONTAINERS & BOXES (SIC 265)	16.9	5.9	10.4	3.6	6.4	2.2
PRINTING & PUBLISHING (SIC 27)	4.4	1.5	3.2	1.1	1.2	0.4
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	10.1	3.5	5.7	2.0	4.4	1.5
PLASTICS DRUGS & PAINTS (SIC 282-5)	10.1	3.5	0.6	0.2	9.5	3.3
PETROLEUM PRODUCTS (SIC 29)	2.3	0.8	0.2	0.1	2.1	0.7
RUBBER & PLASTICS PRODUCTS (SIC 30)	7.1	2.5	4.9	1.7	2.2	0.8
LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	0.0	0.0	0.0	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.6	0.2	0.0	0.0	0.6	0.2
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.0	0.0	0.0	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.8	0.3	0.6	0.2	0.2	0.1
FABRICATED METAL PRODUCTS (SIC 34)	1.6	0.5	0.3	0.1	1.2	0.4
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.8	0.3	0.0	0.0	0.8	0.3
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0
MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.9	0.3	0.0	0.0	0.8	0.3
MOTOR VEHICLES & EQUIP. (SIC 371)	0.0	0.0	0.0	0.0	0.0	0.0
AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0	0.0	0.0
TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0
INSTRUMENTS (SIC 38)	0.3	0.1	0.2	0.1	0.0	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	0.2	0.1	0.2	0.1	0.0	0.0
TRANSPORTATION SERVICES (SIC 40-7)	5.9	2.0	2.6	0.9	3.3	1.2
COMMUNICATIONS & UTILITIES (SIC 48-9)	10.4	3.6	10.2	3.5	0.2	0.1
WHOLESALE & RETAIL TRADE (SIC 50-9)	7.4	2.6	7.2	2.5	0.2	0.1
FINANCE, INS., REAL ESTATE (SIC 60-6)	4.0	1.4	2.6	0.9	1.3	0.5
BUSINESS SERVICES (SIC 73, 81, 89)	4.4	1.5	2.9	1.0	1.5	0.5
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	1.1	0.4	1.0	0.3	0.1	0.0
GOVERNMENT ENTERPRISES	0.2	0.1	0.2	0.1	0.0	0.0
UNALLOCATED INDUSTRIES	3.4	1.2	2.2	0.8	1.2	0.4
TOTAL LOCAL INDUSTRY PURCHASES	194.7	67.5	129.6	44.9	65.0	22.6
PRIMARY INPUTS						
GEORGIA HOUSEHOLDS	58.9	20.4	58.9	20.4	0.0	0.0
CAPITAL OWNERSHIP	14.5	5.0	14.5	5.0	0.0	0.0
GEORGIA LOCAL GOVERNMENTS	1.7	0.6	1.7	0.6	0.0	0.0
GEORGIA STATE GOVERNMENT	1.5	0.5	1.5	0.5	0.0	0.0
FEDERAL GOVERNMENT	13.8	4.8	13.8	4.8	0.0	0.0
TOTAL FINAL PAYMENTS	90.3	31.3	90.3	31.3	0.0	0.0
NON-COMPETITIVE IMPORTS	3.4	1.2	0.0	0.0	3.4	1.2
TOTAL PURCHASES AND PAYMENTS	288.4	100.0	220.0	76.3	68.4	23.7

Figure 9.2a A Sample Market Analysis (continued)

TABLE 5. SUMMARY OF SALES IN THE SOUTHEAST IN 1970 BY THE PAPER PRODUCTS EXC CONTAINERS (SIC 264) INDUSTRY
(MILLIONS OF DOLLARS)

PURCHASER OR USER SOUTHEASTERN INDUSTRY	TOTAL SALES		SALES BY S.E. PRODUCERS		SALES BY OTHER PRODUCERS	
	VALUE	PERCENT	VALUE	PERCENT	VALUE	PERCENT
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	2.4	0.2	2.2	0.2	0.2	0.0
FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	1.6	0.2	1.4	0.1	0.2	0.0
OTHER MINING (SIC 10-3, 147)	1.3	0.1	1.1	0.1	0.2	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	51.4	4.8	50.0	4.7	1.5	0.1
MEAT PRODUCTS (SIC 201)	9.2	0.9	8.4	0.8	0.8	0.1
DAIRY PRODUCTS (SIC 202)	10.8	1.0	9.9	0.9	0.9	0.1
CANNED & PRESERVED FOODS (SIC 203)	23.3	2.2	21.4	2.0	1.9	0.2
GRAIN MILL PRODUCTS (SIC 204)	47.0	4.4	43.3	4.1	3.6	0.3
BEVERAGES (SIC 208)	4.7	0.4	4.2	0.4	0.5	0.0
FOOD PRODUCTS, NEC (SIC 205-7, 209)	30.7	2.9	28.2	2.6	2.6	0.2
FABRIC MILLS (SIC 221-4, 2261-2)	50.1	4.7	44.9	4.2	5.2	0.5
YARN & THREAD MILLS (SIC 2269, 228)	1.1	0.1	0.6	0.1	0.6	0.1
FLOOR COVERINGS (SIC 227)	69.9	6.6	64.5	6.0	5.5	0.5
MISC. TEXTILE GOODS (SIC 229)	0.9	0.1	0.8	0.1	0.1	0.0
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	7.2	0.7	5.4	0.5	1.8	0.2
LUMBER & WOOD PRODUCTS (SIC 24)	2.8	0.3	2.2	0.2	0.6	0.1
FURNITURE & FIXTURES (SIC 25)	1.3	0.1	0.7	0.1	0.6	0.1
PULP & PAPER MILLS (SIC 261-3)	31.7	3.0	31.4	2.9	0.3	0.0
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	1.5	0.1	1.3	0.1	0.2	0.0
PAPERBOARD CONTAINERS & BOXES (SIC 265)	5.7	0.5	5.5	0.5	0.2	0.0
PRINTING & PUBLISHING (SIC 27)	16.8	1.6	15.9	1.5	1.0	0.1
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	39.1	3.7	36.0	3.4	3.1	0.3
PLASTICS DRUGS & PAINTS (SIC 282-5)	17.0	1.6	15.4	1.4	1.7	0.2
PETROLEUM PRODUCTS (SIC 29)	12.4	1.2	12.4	1.2	0.0	0.0
RUBBER & PLASTICS PRODUCTS (SIC 30)	6.5	0.6	6.2	0.6	0.4	0.0
LEATHER & LEATHER PRODUCTS (SIC 31)	0.6	0.1	0.5	0.0	0.2	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	13.8	1.3	12.5	1.2	1.4	0.1
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.5	0.0	0.3	0.0	0.3	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	1.3	0.1	1.1	0.1	0.2	0.0
FABRICATED METAL PRODUCTS (SIC 34)	7.5	0.7	6.7	0.6	0.9	0.1
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	2.5	0.2	1.8	0.2	0.7	0.1
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	6.6	0.6	6.0	0.6	0.6	0.1
MISC. ELECTRICAL EQUIP. (SIC 363-9)	9.0	0.8	7.9	0.7	1.1	0.1
MOTOR VEHICLES & EQUIP. (SIC 371)	0.2	0.0	0.1	0.0	0.1	0.0
AIRCRAFT & PARTS (SIC 372)	0.9	0.1	0.5	0.0	0.4	0.0
TRAILER COACHES (SIC 3791)	7.6	0.7	7.5	0.7	0.1	0.0
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.3	0.0	0.1	0.0	0.1	0.0
INSTRUMENTS (SIC 38)	1.6	0.2	1.5	0.1	0.1	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	2.7	0.3	2.0	0.2	0.7	0.1
TRANSPORTATION SERVICES (SIC 40-7)	1.4	0.1	0.9	0.1	0.5	0.0
COMMUNICATIONS & UTILITIES (SIC 48-9)	2.9	0.3	1.9	0.2	1.0	0.1
WHOLESALE & RETAIL TRADE (SIC 50-9)	112.4	10.5	97.7	9.2	14.7	1.4
FINANCE, INS., REAL ESTATE (SIC 60-6)	11.8	1.1	8.0	0.7	3.8	0.4
BUSINESS SERVICES (SIC 73, 81, 89)	13.4	1.3	11.2	1.1	2.1	0.2
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	17.9	1.7	12.3	1.2	5.7	0.5
GOVERNMENT ENTERPRISES	2.5	0.2	1.5	0.1	1.0	0.1
UNALLOCATED INDUSTRIES	102.7	9.6	94.7	8.9	8.0	0.7
TOTAL LOCAL INDUSTRY SALES	767.3	71.9	689.9	64.7	77.3	7.2
FINAL USERS						
SOUTHEASTERN HOUSEHOLD CONSUMERS	210.4	19.7	134.0	12.6	76.4	7.2
SOUTHEASTERN PRIVATE INVESTMENT	0.0	0.0	0.0	0.0	0.0	0.0
SOUTHEASTERN LOCAL GOVERNMENTS	3.9	0.4	2.1	0.2	1.8	0.2
SOUTHEASTERN STATE GOVERNMENTS	3.8	0.4	2.1	0.2	1.7	0.2
FEDERAL GOVERNMENT, DEFENSE	3.4	0.3	3.4	0.3	0.0	0.0
FEDERAL GOVERNMENT, OTHER	1.2	0.1	1.2	0.1	0.0	0.0
PRIVATE USERS OUTSIDE THE SOUTHEAST	77.0	7.2	77.0	7.2	0.0	0.0
TOTAL FINAL SALES	299.7	28.1	219.9	20.6	79.9	7.5
TOTAL SALES	1067.0	100.0	909.8	85.3	157.2	14.7

Figure 9.2a A Sample Market Analysis (continued)

TABLE 6. SUMMARY OF PURCHASES AND PAYMENTS IN THE SOUTHEAST IN 1970 BY THE PAPER PRODUCTS EXC CONTAINERS (SIC 264) INDUSTRY
(MILLIONS OF DOLLARS)

PRODUCER OF GOOD OR SERVICE SOUTHEASTERN INDUSTRY	TOTAL PURCHASES		PURCHASES FROM S.E. PRODUCERS		PURCHASES FROM OTHER PRODUCERS	
	VALUE	PERCENT	VALUE	PERCENT	VALUE	PERCENT
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0	0.0
FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0
STONE & CLAY MINING (SIC 14 EXC 147)	2.3	0.3	2.3	0.3	0.0	0.0
OTHER MINING (SIC 10-3, 147)	0.8	0.1	0.4	0.0	0.4	0.0
CONTRACT CONSTRUCTION (SIC 15-7)	1.7	0.2	1.7	0.2	0.0	0.0
MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0
DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0
CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0	0.0
GRAIN MILL PRODUCTS (SIC 204)	2.6	0.3	2.6	0.3	0.0	0.0
BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0
FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.3	0.0	0.2	0.0	0.1	0.0
FABRIC MILLS (SIC 221-4, 2261-2)	3.3	0.4	3.3	0.4	0.0	0.0
YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	0.0	0.0	0.0
FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0	0.0	0.0
MISC. TEXTILE GOODS (SIC 229)	2.0	0.2	1.2	0.1	0.8	0.1
FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	4.7	0.5	4.7	0.5	0.0	0.0
LUMBER & WOOD PRODUCTS (SIC 24)	30.5	3.4	30.2	3.3	0.3	0.0
FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.0	0.0	0.0
PULP & PAPER MILLS (SIC 261-3)	248.0	27.3	248.0	27.3	0.0	0.0
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	1.5	0.2	1.3	0.1	0.2	0.0
PAPERBOARD CONTAINERS & BOXES (SIC 265)	45.4	5.0	23.5	2.6	22.0	2.4
PRINTING & PUBLISHING (SIC 27)	13.7	1.5	13.6	1.5	0.1	0.0
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	16.2	1.8	15.6	1.7	0.6	0.1
PLASTICS DRUGS & PAINTS (SIC 282-5)	15.0	1.7	15.0	1.7	0.0	0.0
PETROLEUM PRODUCTS (SIC 29)	5.1	0.6	0.3	0.0	4.9	0.5
RUBBER & PLASTICS PRODUCTS (SIC 30)	21.9	2.4	20.5	2.3	1.4	0.2
LEATHER & LEATHER PRODUCTS (SIC 31)	0.1	0.0	0.1	0.0	0.0	0.0
STONE, CLAY & GLASS PRODUCTS (SIC 32)	1.5	0.2	1.0	0.1	0.4	0.0
PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.0	0.0	0.0	0.0
NONFERROUS METAL MFG. (SIC 333-6, 3392)	3.7	0.4	3.7	0.4	0.0	0.0
FABRICATED METAL PRODUCTS (SIC 34)	1.5	0.2	0.8	0.1	0.7	0.1
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.9	0.1	0.4	0.0	0.5	0.0
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0
MISC. ELECTRICAL EQUIP. (SIC 363-9)	1.4	0.2	0.7	0.1	0.8	0.1
MOTOR VEHICLES & EQUIP. (SIC 371)	0.1	0.0	0.1	0.0	0.0	0.0
AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0	0.0	0.0
TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0
INSTRUMENTS (SIC 38)	0.9	0.1	0.9	0.1	0.1	0.0
MISC. MANUFACTURING (SIC 39, 19, 21)	0.5	0.1	0.5	0.1	0.0	0.0
TRANSPORTATION SERVICES (SIC 40-7)	17.4	1.9	17.2	1.9	0.2	0.0
COMMUNICATIONS & UTILITIES (SIC 48-9)	9.2	1.0	8.6	0.9	0.6	0.1
WHOLESALE & RETAIL TRADE (SIC 50-9)	24.6	2.7	24.6	2.7	0.0	0.0
FINANCE, INS., REAL ESTATE (SIC 60-6)	12.2	1.3	11.5	1.3	0.7	0.1
BUSINESS SERVICES (SIC 73, 81, 89)	14.1	1.5	13.0	1.4	1.1	0.1
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	3.5	0.4	3.5	0.4	0.0	0.0
GOVERNMENT ENTERPRISES	0.7	0.1	0.7	0.1	0.0	0.0
UNALLOCATED INDUSTRIES	11.6	1.3	10.3	1.1	1.3	0.1
TOTAL LOCAL INDUSTRY PURCHASES	519.0	57.0	481.7	52.9	37.3	4.1
VALUE ADDED	385.8	42.4	385.8	42.4	0.0	0.0
NON-COMPETITIVE IMPORTS	5.1	0.6	0.0	0.0	5.1	0.6
TOTAL PURCHASES AND PAYMENTS	909.8	100.0	867.4	95.3	42.4	4.7

The tables included in the market analysis are reviewed briefly below. These tables are all available for the 50-industry classification used in the published tables of the Georgia Economic Model. Tables 1 through 4 are also available for industries in the unpublished 140-industry work tables of the Study.

Summary. This table summarizes the remaining tables, showing the size of the market for the industry in Georgia and in the Southeast. In addition, it presents data from County Business Patterns showing approximate employment and number of establishments in the industry in Georgia.

Table 1. This table shows sales in Georgia in 1970, estimating sales by in-state and out-of-state producers to industries and final consumers in Georgia. It permits the analyst to identify industries in which major customers in Georgia may be found.

Table 2. This table estimates the purchases from other industries and the payments required to produce the output of this industry in Georgia. Review of this table yields insight into the sources of materials in the State.

Table 3. Using linear projections of sales to other industries based on employment growth in these industries from 1964 to 1970, this table estimates sales in Georgia in 1980. Not allowing for import substitution, it conservatively projects local sales to grow at no more than the projected rates.

Table 4. Assuming that industries in the State will continue to grow in proportion to employment growth from 1964 to 1970, this table projects Table 2 to 1980.

Table 5. Similar in format to Table 1, this table estimates sales

in 1970 in Georgia and the adjoining states of South Carolina, North Carolina, Tennessee, Alabama, and Florida.

Table 6. Table 6 is similar in format to Table 2 and estimates purchases and payments in the Southeast.

9.3 Availability of Market Analyses

The market analyses are available through the Research Division of the Department of Industry and Trade. Appendix Table E.1a lists the 50 industries in the Georgia Economic Model and defines them in terms of both their Standard Industrial Classification (SIC) code and their "OBE" code. The OBE code is the industry number in the National Input-Output Study, which was produced by the Office of Business Economics. Appendix Table E.1b lists and defines the 105 more-detailed manufacturing industries for which analyses are available.

For further information, business firms interested in expanding their operations in Georgia should contact:

Research Division
Georgia Department of Industry and Trade
6th Floor
Trinity-Washington Building
Atlanta, Georgia 30334

(Note: After December 1973, contact the Research Division of the Georgia Department of Community Development at the same address.)

A P P E N D I C E S

A

CONSTRUCTING THE TRANSACTIONS TABLE

A.1 General Approach

As with any large statistical undertaking, the Georgia Interindustry Study depends on a number of data sources, both primary and secondary. Here we document our approach to melding these data into a consistent representation of the Georgia economy. This approach is based on research conducted in the Regional Development Program of the College of Industrial Management at Georgia Tech and on experience gained in constructing a similar system at the Department of Planning and Economic Development of the State of Hawaii. We also draw extensively on the experience of one of the authors (Laurent) in constructing an input-output model of Charleston, South Carolina.

The system permits us to develop an input-output table wholly from secondary (published) data and to evolve from this first estimate a table embodying as much primary data as can be obtained with available resources. Ultimately, the system could be completely survey-based. We feel that our approach is both useful and interesting.

This appendix summarizes our computing techniques, and provides a few comments on our data sources and a general overview of the system. A system flowchart is used to identify more precisely the elements in the system while at the same time conveying a feeling for the system as a whole.

A.2 Data Sources

The Georgia Interindustry Study depends for primary data on a survey of manufacturing firms in the State and on unpublished sources at the Georgia

Department of Labor and the Georgia Department of Revenue. In the survey, contact with over 240 firms was made; primary data on over 400 firms was provided by the Revenue Department, and the Department of Labor gave us access to its unpublished data on employment and wages and salaries classified by detailed industry, subject in both cases to the rules governing disclosure of confidential data. This primary data is especially useful in developing purchase and sales patterns for manufacturing industries and in estimating final payments to primary-resource owners. Without these sources, our task would have been substantially more difficult; they provided us with as much data as has been used in many other input-output studies. We did not survey the nonmanufacturing industries and have used published data and interviews with industry and government experts in preparing data for these industries.

Our principal secondary-data source is the Bureau of Economic Analysis [formerly the Office of Business Economics (OBE)], U.S. Department of Commerce, which provided three basic sets of data: the 367-industry national input-output tables for 1963, price indices for most industries between 1963 and 1970, and the worksheets underlying personal-income estimates in Georgia. In addition, we have used the Census of Manufactures, County Business Patterns, the Minerals Yearbook, Farm Income Situation, State Government Finance, Government Finance, the Georgia Auditor's Report, and many other published documents.

A.3 Overview of the Computer System

We assume in this section that the reader has a basic knowledge of input-output models, understanding Chapter 4 and Appendix B of this document. The reader should also review the description of the national input-output study published in the Survey of Current Business (November 1969). The definitions and conventions used in the national study and the Georgia study

are reproduced as the final section of this Appendix (A.4).

The basic input-output table was constructed in three stages. First, a rough model of the State was constructed with data at hand. We used the 367-industry national input-output table, a set of price deflators for these industries, employment data obtained from the Georgia Department of Labor, and employment and output data from the various censuses and current government publications. This first estimate formed the basis for our interview series. The data for it, in the 1970 study, was available in June, 1971.

Second, while the survey was in process, data on final payments was gathered by the Georgia Department of Revenue. This data formed the basis for a second estimate of the gross outputs of Georgia industries. With this data and the capital-formation matrix for the U.S. (price-adjusted), the first estimate was revised and prepared for the third set of operations.

Third, the information collected in the survey was introduced into the system and the final estimate was computed. Corrections were made in two ways: first, the total transactions matrix was corrected to reflect observations of purchases made by industries in Georgia; and then the trade pattern of industries in Georgia, as observed in the survey, was introduced into the system. This final estimate became input into the aggregation program, where it was prepared for use in the various analytic programs.

These three stages are discussed in more detail in the following sub-sections and are related to the system flow chart presented as Figure A.3a. This flow chart uses standard symbols and is designed to show the interaction of 33 computer programs and the various card, magnetic-tape, and disk files on which data are stored in constructing the Georgia Economic Model. While derived from a more detailed working chart, this chart contains only a few of our original program designations and none of the file designations needed for more than a summary understanding of the system.

Figure A.3a System Flow Chart, Georgia Interindustry Study

S E C T I O N A

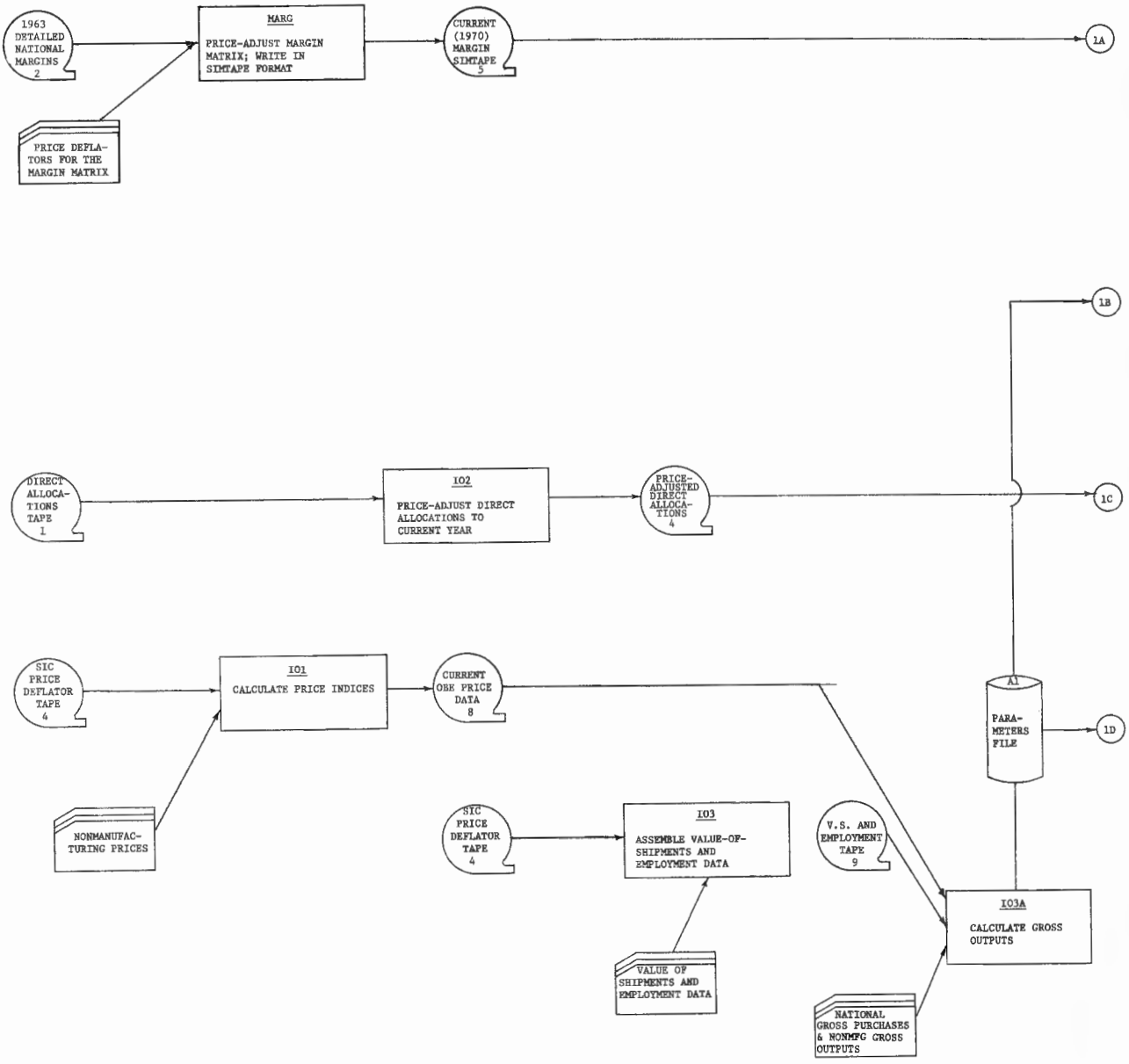


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N A S E C T I O N B

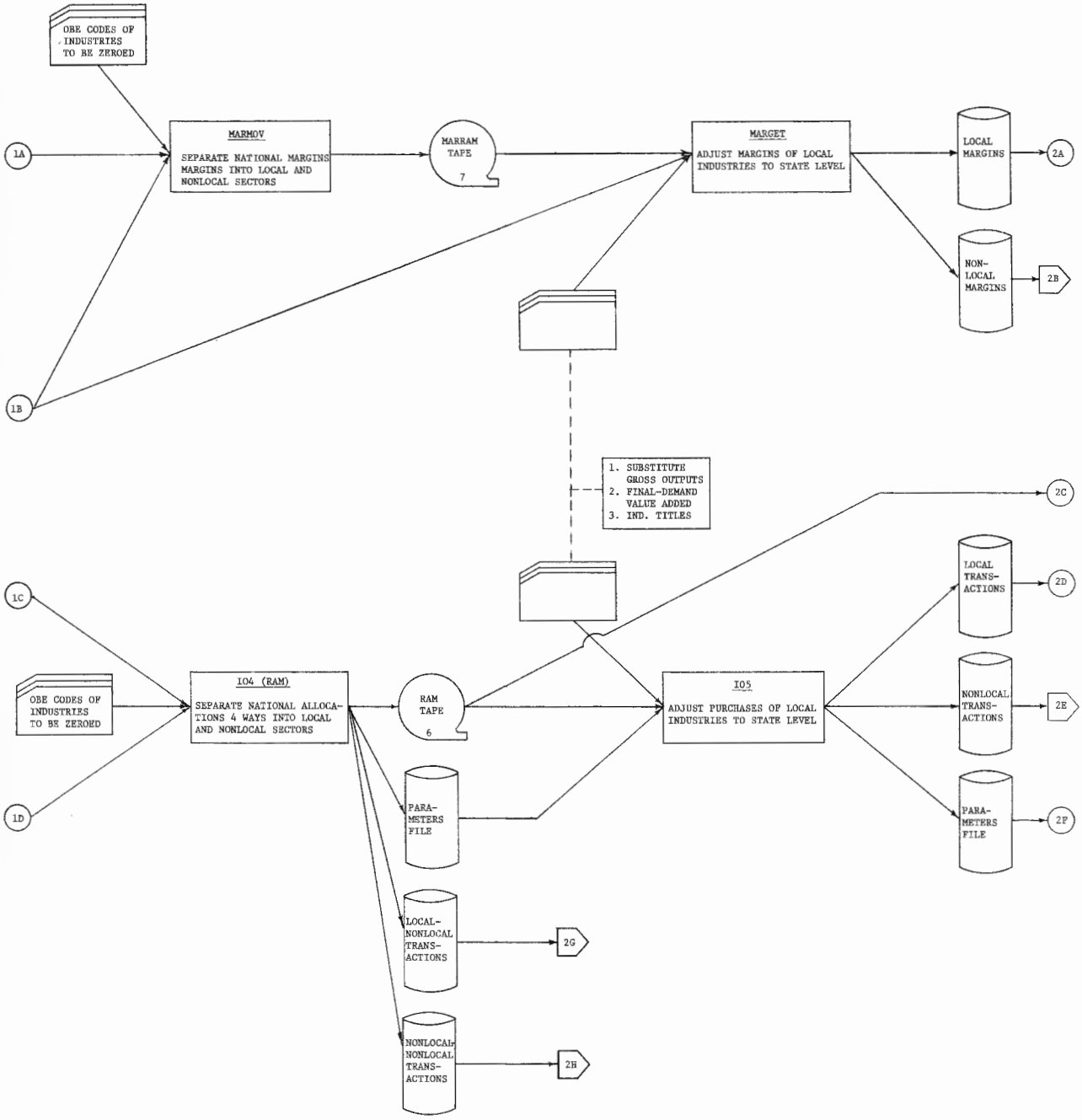


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N B S E C T I O N C

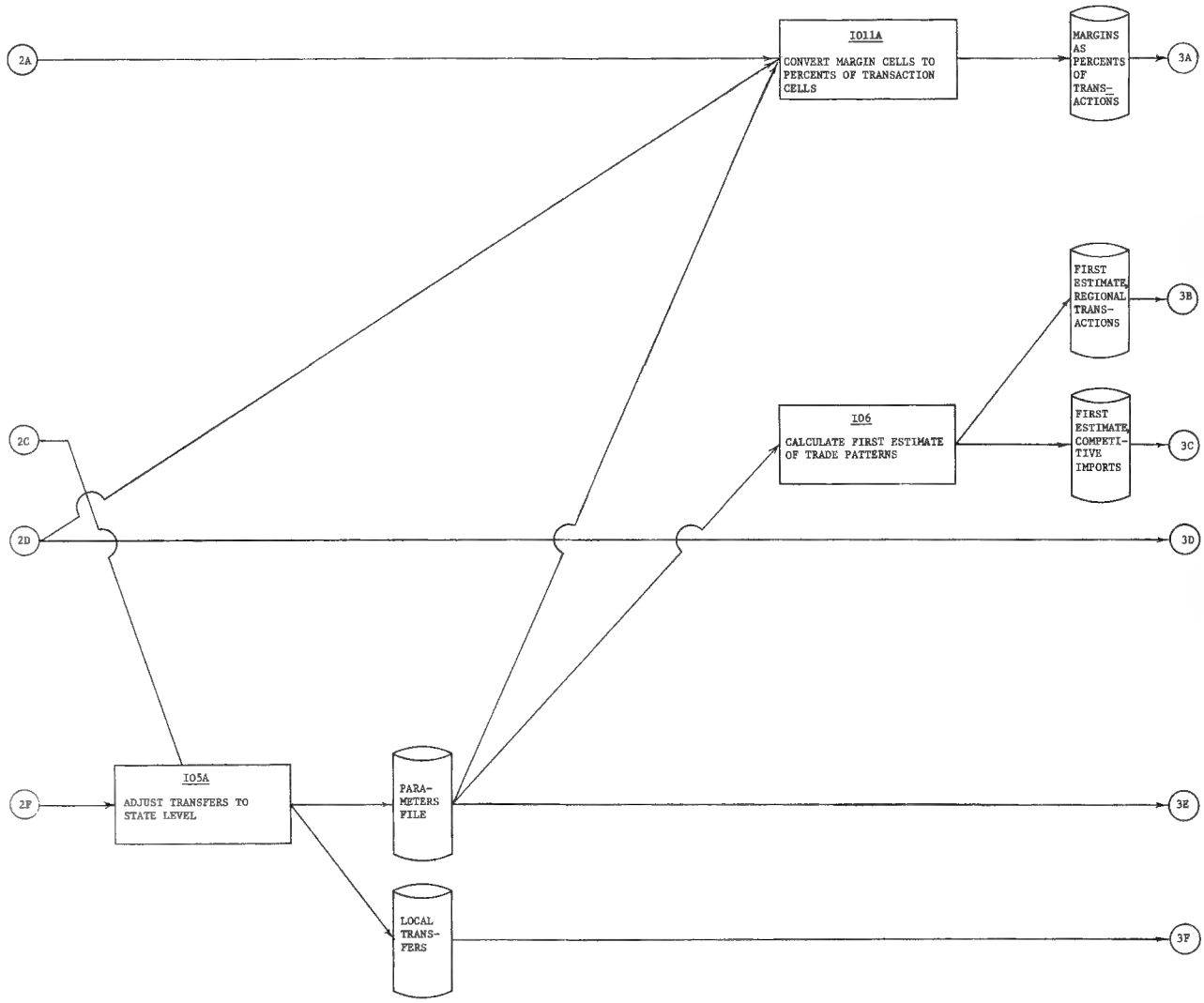


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N D S E C T I O N E

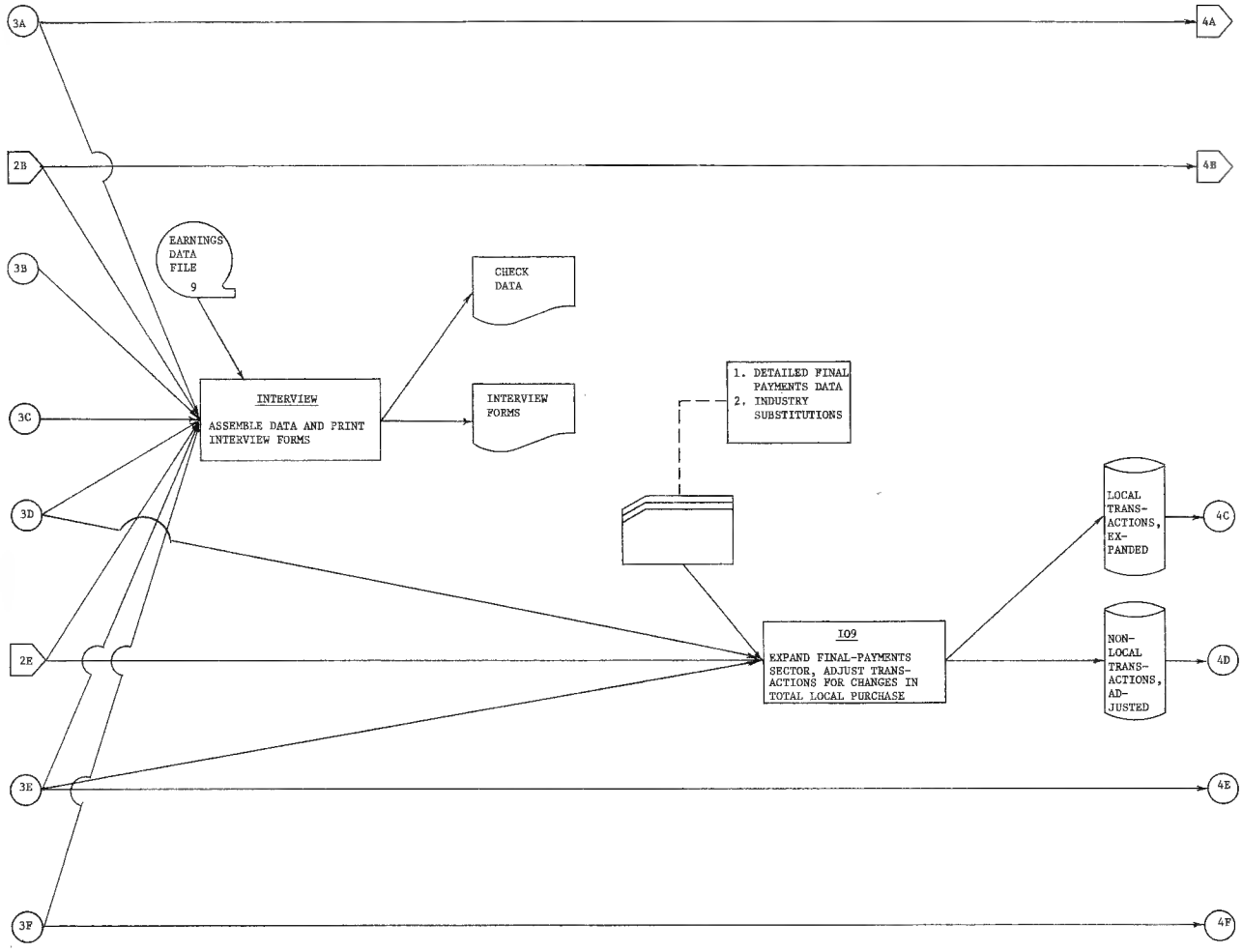


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N E

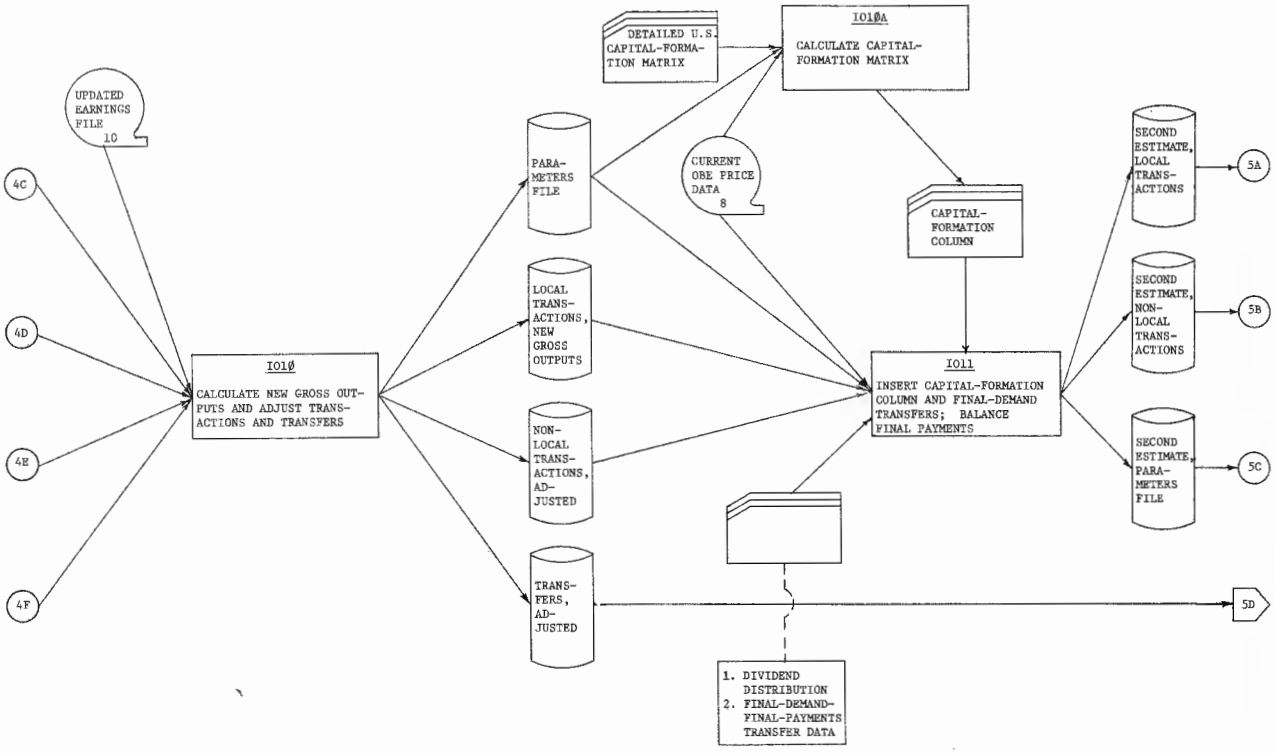


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N F

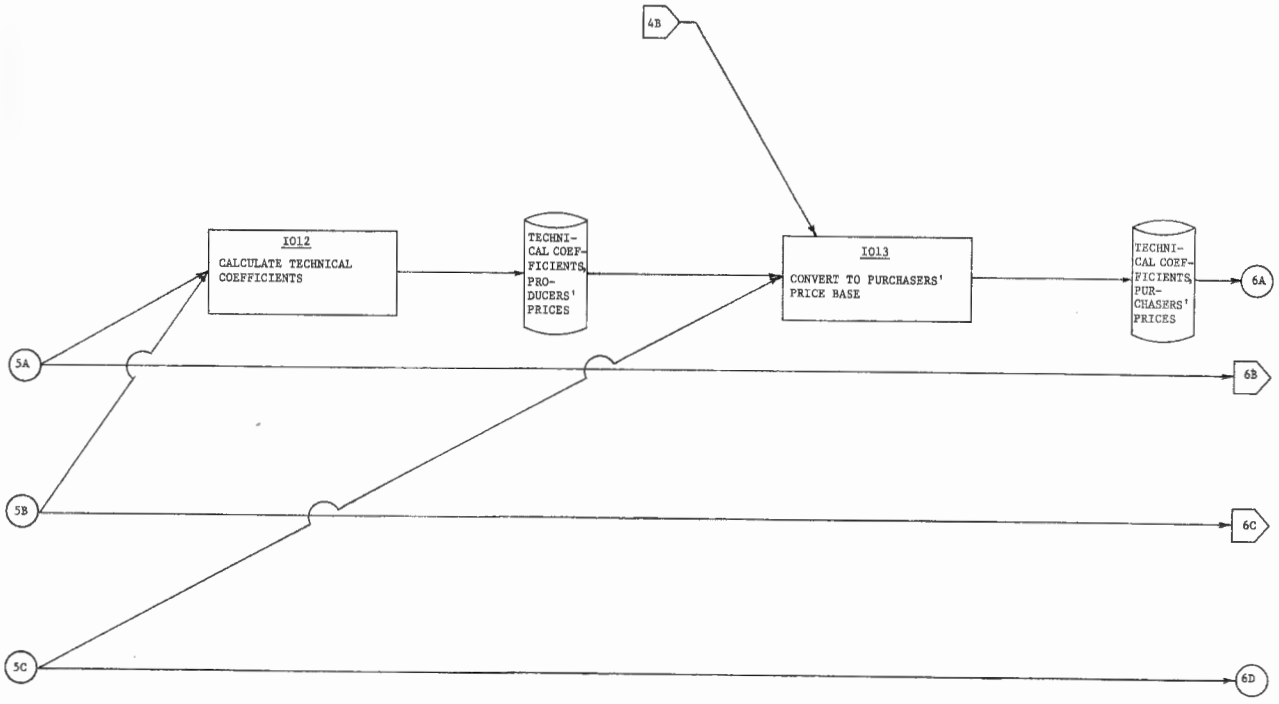


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N F

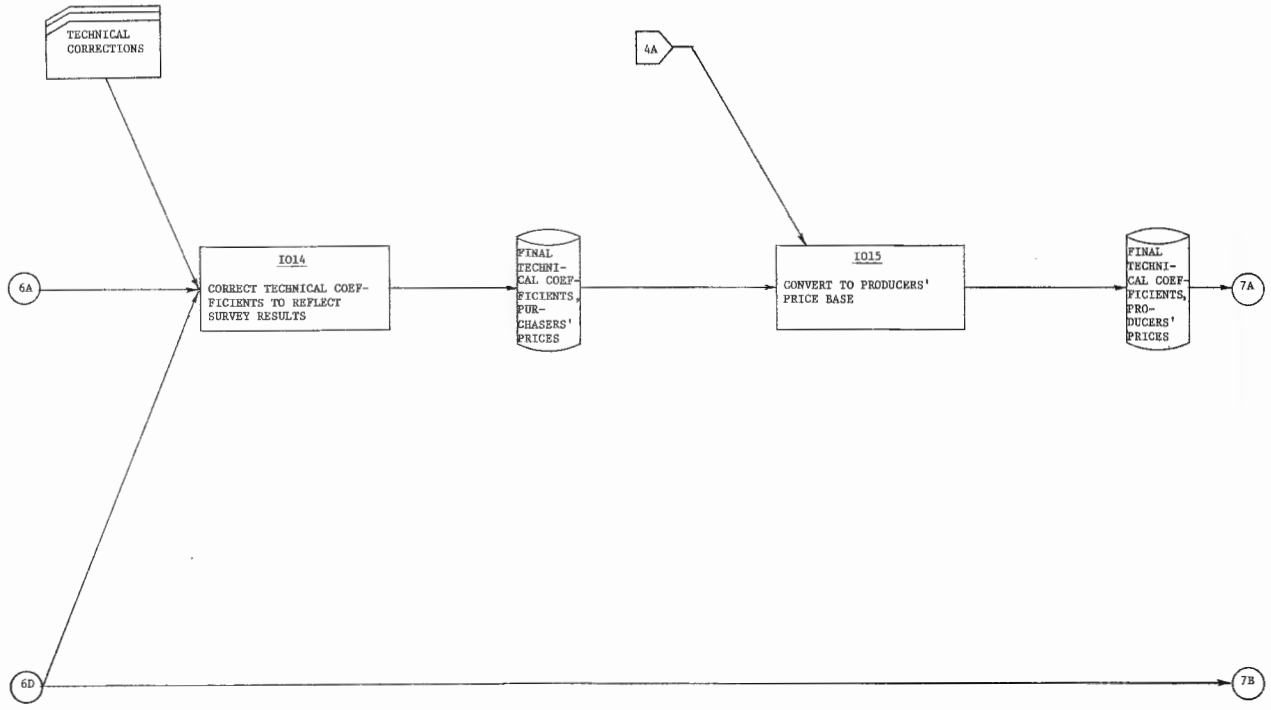


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N F

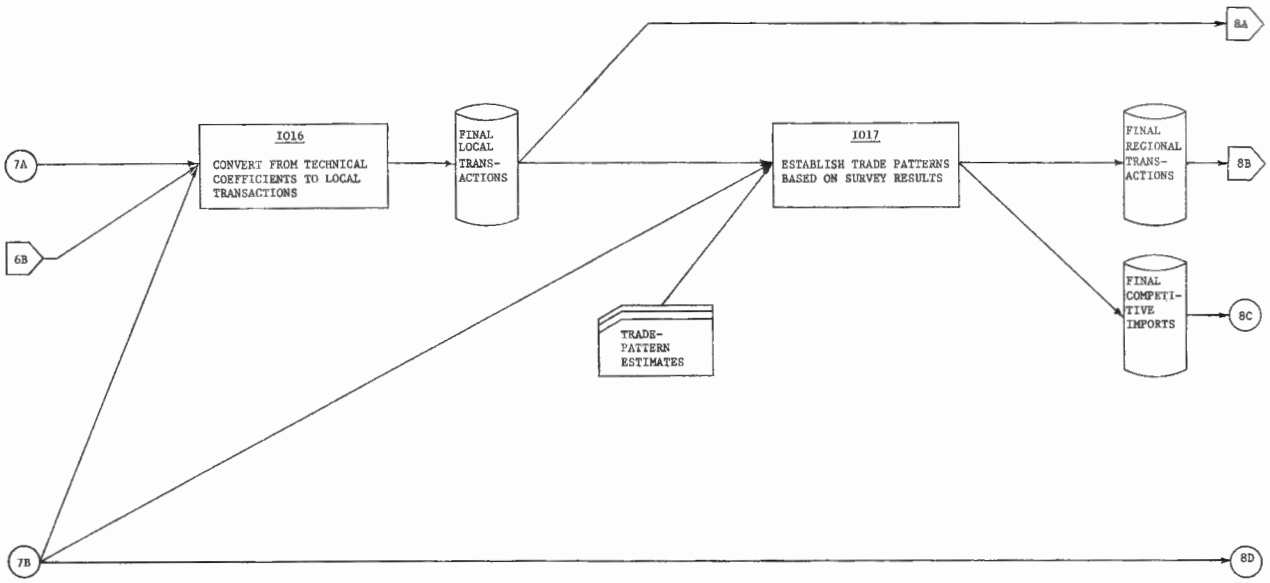


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N G

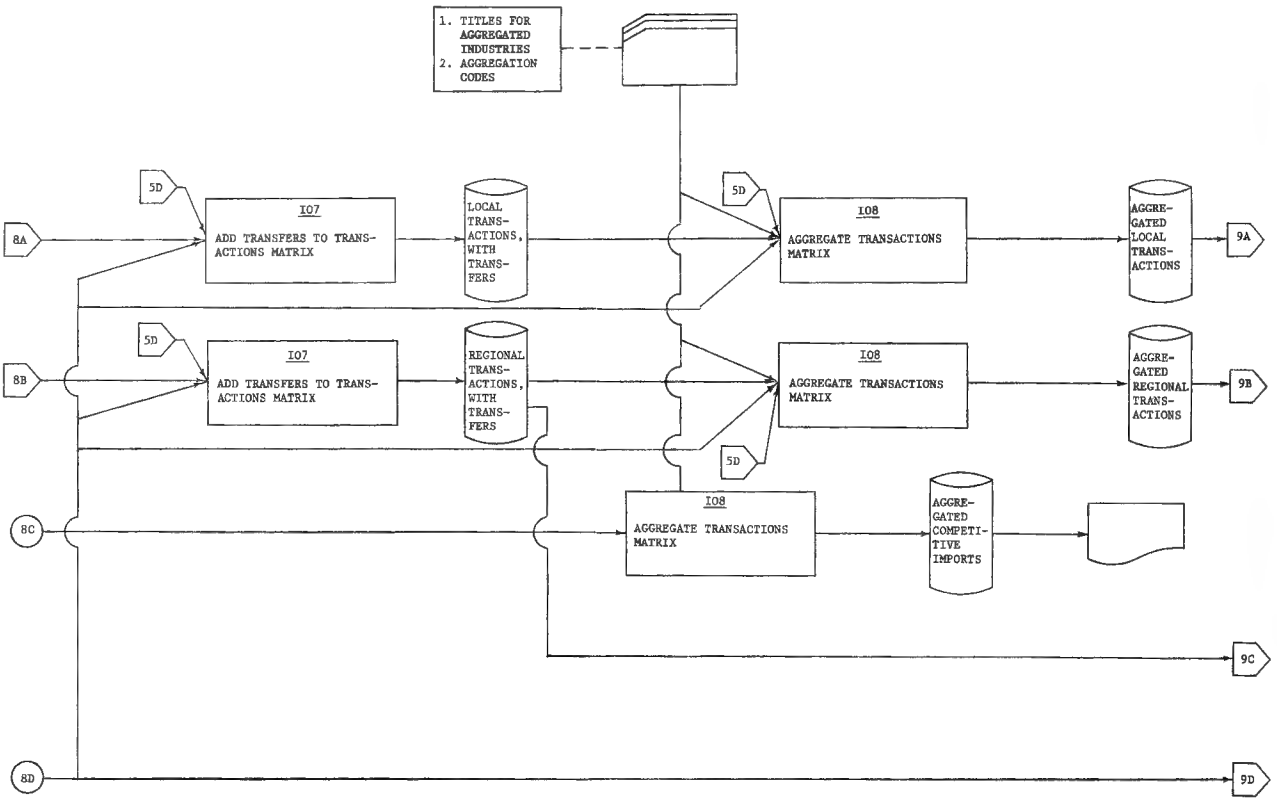


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

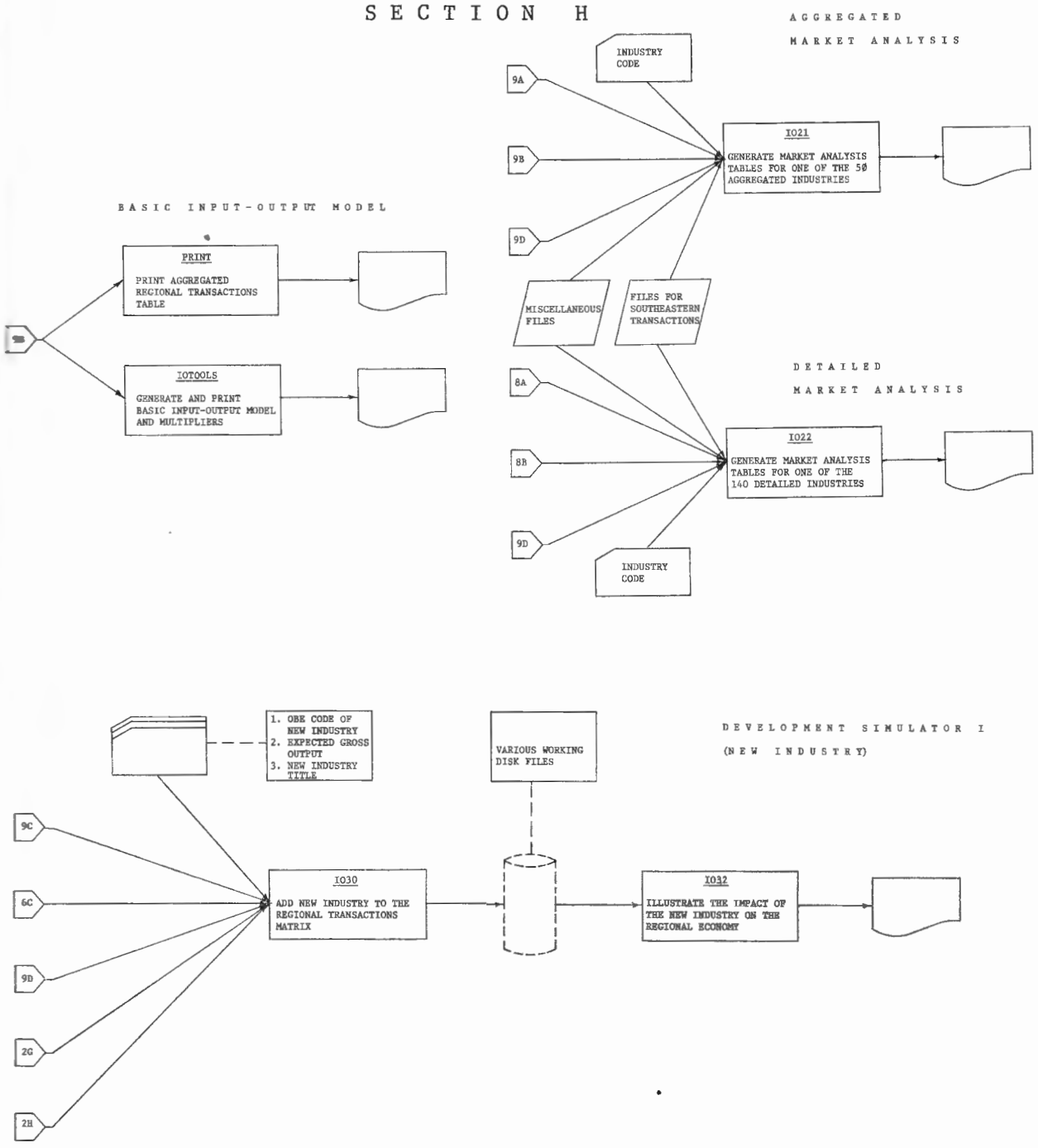
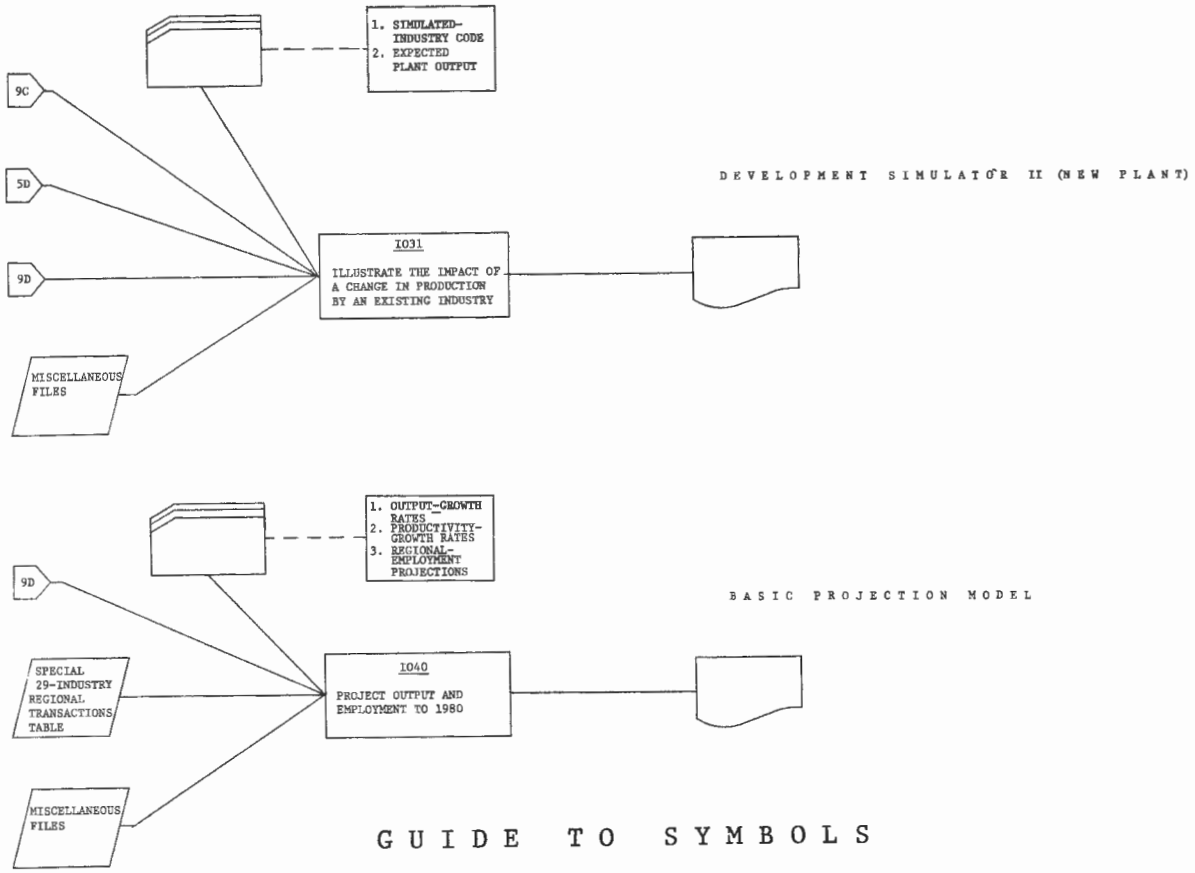
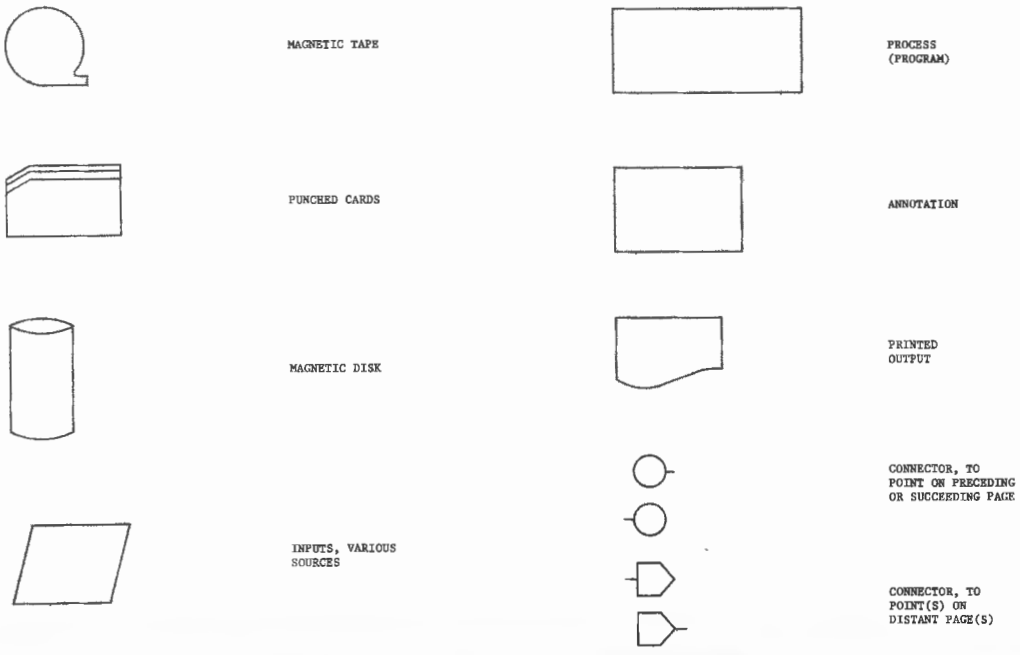


Figure A.3a System Flow Chart, Georgia Interindustry Study (continued)

S E C T I O N H



G U I D E T O S Y M B O L S



A.3.1 The First Estimate

The first estimate is constructed in sections A through C of the flow chart. Section A prepares the basic data tapes, section B moves these tapes into disk storage for easy access, and section C computes the first estimate.

The major source of transactions data in this estimate is the 367-industry national transactions table for 1963 as released by the Office of Business Economics of the U.S. Department of Commerce. The direct-allocations tape has been derived from the computer tape supplied by OBE. We also use the detailed margins for the 1963 table. This margin data is used later to convert the first estimate from a producers' price base to a purchasers' price base for the interview forms. The other basic set of data obtained from OBE is a tape of price-deflator data classified by industries on the 4-digit SIC level.

We supplement this data with price indices for nonmanufacturing industries, which are gathered from published sources and from worksheets in the Office of Business Economics.

With this data in hand, the first adjustment to the national data is made. We adjust the national transactions and margins for price changes from 1963 to 1970.

The next step is to make an initial estimate of the outputs of local industries and to determine which of the 367 national industries exist in the State. In doing this, we rely on published and unpublished data. The published data includes data from the Census of Manufactures for Georgia and the U.S. for 1963 and 1967 and from County Business Patterns for Georgia in 1964. The unpublished data is obtained from the "ES-202" files of the Georgia Department of Labor and is employment by 4-digit (SIC) industry. The Census data is used to account for productivity changes and to estimate value of

shipments per employee for the Nation for 1970. The ES-202 data, assumed to be a reasonable indicator of production in Georgia, is then used to calculate the value of shipments for Georgia industries in 1970. Gross outputs for the agriculture, mining, and service industries are calculated from other published sources and are read into the system through punched cards. The estimates of the ten final demands are also calculated manually and read into the system through cards.

When the outputs as calculated have been thoroughly checked for acceptability, the national matrices are separated into local and nonlocal sectors. The local industries are those identified through the ES-202 data as existing in Georgia; those not found in this data are defined as nonlocal industries. On the assumption that the national input-output coefficients are reasonable approximations of the State input-output coefficients, the matrices representing local transactions, nonlocal transactions, and local transfers are multiplied by gross outputs for Georgia industries and these tables are reduced to State size. (We might note here that transfers, which represent secondary products of industries which are transferred to the industries in which they are primary products, are only of consequence between local industries; since nonlocal transfers are not used in later computations, they are not retained in the system.)

At this point, we have produced an estimate of total transactions in the State. In this 300-industry matrix, the column totals are the estimated gross outputs of industries in Georgia and the row totals represent the total needs by producers in the State for the products of the various industries. In discussion, we refer to the matrices we have produced as "first-estimate total transactions," "noncompetitive imports" (the nonlocal transactions),

and "transfers." We are now in position to produce the first estimate of regional interindustry transactions and to print interview forms.

The first estimate of the regional interindustry transactions is made with a technique called the "supply-demand pool technique." (This technique is described in detail in William A. Schaffer and Kong Chu, "Nonsurvey Techniques for Constructing Regional Interindustry Models," Papers of the Regional Science Association, vol. XXIII (1969), pp. 83-101.) This technique compares the output produced by an industry in the State with the total needs (or requirements) for this output in the State. An output in excess of local needs is assumed to be exported; a local need in excess of local output is assumed to be filled by imports. This procedure produces a first estimate of the trade pattern in Georgia. Since it is based on an assumption of local trade when possible, this trade pattern is obviously biased in the direction of local trade.

The system from this point on depends upon primary data. In Section D of the flow chart, we produce an interview form which embodies the first estimate. Our field survey is based on this interview form, which tries to isolate two important sets of information. The first is observations of conditions in which national production coefficients do not apply to production in Georgia. And the second is observations of trade coefficients (the proportions of purchases which are purchased from Georgia producers) for key industries in Georgia. A sample interview form is reproduced as Appendix C.

A.3.2 The Second Estimate

The second estimate is constructed on the basis of primary inputs and the national production technology. It represents a review of gross outputs and a revision of the data base on which they are computed.

While the field interviews are being performed, data is assembled from various published and unpublished sources. This data includes (1) distributions of final payments by local industries, (2) income and product accounts for Georgia, and (3) an estimate of the capital-formation matrix for Georgia.

The most important set of data used in this section is the set of final-payments ratios by industries. For the 1970 study, the Georgia Department of Revenue reviewed over 600 tax returns of Georgia companies in 1970. This review yielded a sample of over 400 observations. To avoid disclosing confidential information, the Revenue Department coded the returns by SIC number and gave us the data in ratio form. The total income (sales) of each firm sampled was divided into six parts: purchases from other firms, payments to households, city and county taxes, state taxes, federal taxes, and a capital residual (which includes retained earnings and depreciation).

For industries in which tax-return data is not available or acceptable, two options are available. One is to obtain the data through interview. While we did this in several cases, the pursuit of such confidential data generally interfered with the free flow of information in other parts of the interview. We interviewed for this data only when absolutely necessary. The other option is substitution of data from a similar industry. The substitution option permits the use of final-payments data for a similar industry and constructs an "observation" based on this data and national value-added proportions. Our experience in evaluating this procedure has been that the similarity between industries is not as important as is the closeness of value-added proportions of two industries. The substitutions are made with value judgments.

This final-payments data is used both to fill out the final-payments sector of the input-output table and for estimating new values of gross

outputs. We use wage and salary data from the ES-202 file of the Georgia Department of Labor in these new estimates, dividing these payments by the household coefficients obtained above to arrive at gross outputs for industries in Georgia. These new gross outputs are the basis for the second estimate of the Georgia input-output table. We have simply altered the primary-data base and expanded the one value-added row into five final-payments sectors.

Two other alterations are made. One is a revision of the gross-private-investment column in the final-demand sector. In the first estimate, we roughly approximated total investment and used it along with the national investment distribution to estimate investment purchases by industries in Georgia. But with better estimates of gross outputs in hand, it seems reasonable to make a finer estimate of investment expenditures. We use the national capital-formation matrix to do this.

The national capital-formation matrix, officially described as "interindustry transactions in new structures and equipment," is available in detail. Each column shows purchases by an industry in the 2-digit OBE scheme (the published industries) from each of 106 industries producing equipment or doing construction work. These producing industries are defined at the 4-digit OBE level (the 367-industry detail).

In estimating capital expenditures in Georgia, we update this matrix to 1970 prices, convert the matrix to ratio form, and multiply each column by the gross outputs just computed and aggregated to the 2-digit level. A horizontal summation of the resulting Georgia investment-expenditures matrix yields the new gross-private-investment-expenditures column for Georgia.

The expansion of the final-payments sector opens a gap in the system; this gap appears in the intersection of the final-payments sector and the final-demand sector. This corner is filled based on published data. Basically,

this part of the transactions table covers social transfers, or transfers between primary units of the economy. These transfers include such items as personal saving, personal income taxes, personal property taxes, welfare payments, intergovernmental transfers, and surpluses and deficits of governments. All of this information is recorded in income and product accounts for the State. These accounts are documented in Appendix D.

One of the major sources of data for these accounts is the worksheets for personal income. These are unpublished but are available on request from the Regional Economics Division of the Office of Business Economics. We might note here that the household row in the Georgia transactions table is rendered consistent with the personal-income estimates provided by OBE. This requires a modification of the ES-202 wage-and-salary data to bring it in line with reported statistics. (ES-202 reports are made only on firms having 2 or more employees and some information is consequently not recorded in our wage-and-salary data. The adjustments are made before the new gross outputs used in the second estimate are computed.)

When all of this data is assembled, the second estimate is completed. It differs from the first estimate in several ways. The final-payments sector has been expanded to five rows, a finer capital-expenditures column has been inserted, and the table is made consistent with income and product accounts derived from published sources.

A.3.3 The Final Estimate

Data lags are such that the second estimate for the 1970 table was completed in October, 1971. The lag is primarily due to the publications recording State and local government finances; these publications are scheduled each year for mid-September. This lag permits time for the

interview series to be conducted during the summer. When the published data is all assembled and the interview and questionnaire results are gathered, the final estimate is begun.

The first step is to correct the technology, or total transactions, matrix to reflect field observations. To do this, we convert the second-estimate total transactions table from producers' prices to purchasers' prices. Since the local gross margins (the difference between producers' and purchasers' values) have earlier been expressed as percents of respective cells in the total transactions matrix, the second-estimate direct-requirements matrix is converted to a purchasers' price base by adding the margin percents to each of the cells in the direct-requirements matrix and subtracting these margins from their rows (the trade and transportation rows).

Our interview results are converted to percentage form and the computer program then changes coefficients in the direct-requirements table to reflect our observations. Where observations have not been made, the program adjusts cell values to ensure that each column still totals to 100 percent. Since the final-payments cells are fixed at this point, the correction procedure adjusts cell values to maintain a stable value for total intermediate purchases.

Once changes have been completed on the technology matrix, we convert the table back to a producers' price base by subtracting out the margin proportion in each cell in the matrix. This conversion yields the final estimate of the State total-transactions matrix.

Multiplied by gross outputs for each column, the direct-requirements matrix becomes the total transactions matrix. This matrix expresses purchases by industries in the State but does not indicate whether or not the purchases have been made in the State.

The next step is to introduce the survey-based regional trade pattern into the system and to convert the total transactions table into a regional (or state) transactions table. We accomplish this with what we call the "selected-values technique." This technique allows us to set all observed trade coefficients and even to set exports, leaving the balancing of a row to a series of adjustments in unobserved areas of the table. The program making these adjustments is a complex one which accounts for as many alternatives as we have been able to visualize. With each run in which observations are being introduced into the system, the program prints a set of statements reporting the results of its computations, showing whether or not the corrections made are feasible. If these corrections cause adjustments to exceed certain values, the corrections must be reviewed and altered to eliminate the problems which they cause.

When all corrections have been satisfactorily completed, the State input-output table is ready for final adjustments. As it stands at this point, the table reflects purchases for the production of the many products of each industry. Some of these products, however, are secondary to the industries which produce them and should be transferred to the industries in which they are primary. (The advertising output of the newspaper and broadcasting industries is an example.) These transfers are accomplished through the transfers matrix. This matrix has been adjusted along the way such that it now is in the same terms as the regional transactions table. Added cell-for-cell to the regional transactions table, it makes the transfers and converts our State table to its final form. In the 1970 study, it portrays transactions between 300 industries in the Georgia economy.

A.3.4 Aggregation

The final step before using any of the estimates produced above is aggregation to a usable level. We can print the detailed transactions table but have no inversion routines to handle a 300x300 matrix. The aggregation program is designed to combine industries into up to 70 aggregated industries.

But to use the aggregation program, the combinations desired must be specified before the transfer adjustment is completed in the final estimate. This is because an industry cannot "transfer" products to itself; secondary products in one part of an aggregated industry become primary products in another part. To account for this problem, the cells in the transfer matrix which will appear on the diagonal of the aggregated transactions matrix are reduced to zeros. Then the adjusted transfer matrix is added to the total transactions matrix and to the regional transactions matrix, and these matrices are ready for use.

A.3.5 Use of the System

As pointed out in the text, the system can be used in solving a number of economic problems. We have developed a set of programs for this purpose; their inputs and outputs can be seen in the flow chart.

The basic model. The transactions table produced in the final estimate is a description of the Georgia economy in 1970, the base year. In accordance with the generally accepted formulation of an input-output model, we have provided a program which converts the regional table into a direct-requirements table, and constructs both an inverse and an extended inverse of (I-A). These matrices form the base for a set of multipliers and income coefficients which are the usual output of an interindustry model.

The market analyses. The market analysis programs are designed to turn out market analyses for industries in the 50-industry aggregation and

in a 140-industry classification. The programs convert rows and columns in the input-output table into market descriptions, project these descriptions to 1980 using a straight-line extrapolation, and assemble descriptions of the markets of the industries in question in the Southeast in 1970.

The input-output table for the Southeast, defined as Georgia and contiguous states, is constructed using the procedures followed in the first estimate. Outputs are calculated based on employment data from County Business Patterns. The gross-private-investment column is calculated as in the second estimate and inserted in the system. We have not introduced any corrections or trade-pattern observations into this model and it is presented as a rough estimate of transactions in the Southeast. This estimate is a primary input into the market-analysis system.

The development simulators. While the basic model provides multipliers showing the effects of changes in industry activity on the State, it does this for 50 aggregated industries. It does not show the impact of detailed industries on the State and it does not show the potential impact of industries which do not currently exist in the State. The development simulator programs do.

To show the potential impact of an industry which does not presently appear in any listing of Georgia industries, we insert a row and a column which reasonably describe the potential transactions of the industry in the State. These statistics are constructed from the noncompetitive-imports matrix and from a set of columns showing purchases by these industries. This set of columns is described in the system as the "rest-of-the-world matrices" and is formed from the parts of the national table which are not used in the Georgia model.

To show the impact of an industry which exists in Georgia but which has been aggregated into a larger industry such that details concerning it are lost, we isolate the detailed industry as the 51st industry and perform our analysis.

Given an expected size for a new activity (plant), the program prints estimates of changes in outputs, employments, household incomes, and government revenues attributable to the change in economic activity. Illustrative printouts are provided in the text as Figures 8.3a and 8.3b.

The projection models. Using output-growth rates or employment-growth rates for national industries as inputs, the two projection-model programs project output and employment in Georgia industries in a specified target year. The models are typical of input-output projection models and provide basic projections of activity in Georgia from a minimum of inputs.

One additional feature of the projection system is a program which distributes projected activity across the State based on shift-share projections of employment in the eight trade regions defined for the study. Provided by Dr. Chares F. Floyd, these regional projections are described in Appendix F.

A.4 Conventions and Definitions

Reproduced on the next five pages are the definitions and conventions used in the national input-output study as reported in the Survey of Current Business (November 1969):

Definitions and Conventions of the 1963 Input-Output Tables [5]

Trade. The input-output tables do not trace actual flows to and from the trade industry. If trade were shown as buying and reselling, the detailed connections would be between trade and the producing industries, while the consuming industries and final users would make most of their purchases from a single source—trade. To show the links between producing and consuming industries or final markets, commodities are shown as if moving directly from producer to user, bypassing trade. Therefore, the output of trade is measured in terms of total margins—that is, operating expense plus profit.

Valuation of transactions. The valuation underlying the tables in this report is based on producers' prices.[6] Such prices exclude the distribution costs which make up the difference between producers' and purchasers' prices. Under a system of producers' valuations, the individual inputs into a consuming industry are valued at producers' prices while the trade margin and transportation costs associated with all of these inputs appear as inputs to the consuming industry from the trade industry and transportation industry, respectively.

Classification of industries. For this article, all productive activities of the U.S. economy are grouped into 85 industries. Most of these are combinations of industries as defined in the Standard Industrial Classification (SIC) Manual, 1957 edition. Three are "dummy" industries established to simplify the estimating procedures. A list of the industrial categories and their composition in terms of the SIC is given on pages 26-29.

Secondary products or activities. In most cases, secondary products are treated as if sold by the producing industry to the primary industry and added to the output of the primary industry for distribution to users.[7]

In those industries in which secondary production is large and, at the same time, considerably different from the primary output, the secondary products, and their associated inputs, are subtracted from the producing industries and added to the primary industry.

Imports. Imports used for production (intermediate goods and services) which are substitutable for domestically produced goods and services [8] are treated like secondary products; they are shown as if purchased by the industry producing the substitutable item and added to that industry's output.

Imports used in production which have no domestic counterparts, and imports purchased by final users in substantially the same form in which they were imported, are shown as purchased directly by the consuming industry or final market.

Gross output and gross input. Gross output of an industry represents the sum of the values of the following elements: (a) the total production by the industry, including both primary and secondary products or services; (b) the producers' value of the secondary products or services of other industries which are primary to the given industry; and (c) the domestic port value of substitutable imports, which are distributed as part of the output of the given industry.

Gross input of an industry is equal to the sum of the values of the following elements: (a) total consumption of goods and services required for the industry's total production; (b) value added by the industry; (c) the producers' value of the secondary products or services of other industries which are primary to the given industry; and (d) the domestic port value of substitutable imports.[9]

Gross output, the row total, equals gross input, the column total.

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5. This section of the report is discussed much more fully in a document which is available upon request to the OBE.

6. Producers' prices have been defined to include Federal and State and local excise taxes collected and paid by the producer.

7. The basic unit of classification in the SIC is the establishment. An establishment is classified in an industry based on its principal activity. However, once an establishment is classified in an industry, its entire output, subsidiary as well as principal, is counted as part of the output of the industry. Its principal output, that which determines its industry classification, is called primary output; its other (subsidiary) output is called secondary.

8. Substitutability was determined on a judgmental basis using the following guide: the import should be interchangeable with a domestically produced item without any changes in the technology of the consuming industry or the resultant product.

9. Thus, secondary products and substitutable imports are added to both the inputs and outputs.

Industry Classification of the 1963 Input-Output Tables

The titles in bold face represent the groupings of industries used for the summary version of the 1963 tables and were also used in the 1958 and 1961 input-output tables prepared by the Office of Business Economics.

Industry number and title		Related SIC codes (1957 edition)
AGRICULTURE, FORESTRY AND FISHERIES		
	1 Livestock and livestock products	
1. 01	Dairy farm products	0132, pt. 014, pt. 02.
1. 02	Poultry and eggs	0133, pt. 014, pt. 02.
1. 03	Meat animals and miscellaneous livestock products.	0139, pt. 014, 0193, pt. 0729, pt. 02.
	2 Other agricultural products	
2. 01	Cotton	0112, pt. 014, pt. 02.
2. 02	Food feed grains and grass seeds	0113, pt. 0119, pt. 014, pt. 02.
2. 03	Tobacco	pt. 0119, pt. 014, pt. 02.
2. 04	Fruits and tree nuts	0122, pt. 014, pt. 02.
2. 05	Vegetables, sugar and miscellaneous crops.	0123, pt. 0119, pt. 014, pt. 02.
2. 06	Oil bearing crops	pt. 0119, pt. 014, pt. 02.
2. 07	Forest, greenhouse and nursery products.	0192, pt. 014, pt. 02.
	3 Forestry and fishery products	
3. 00	Forestry and fishery products	074, 081, 082, 084, 086, 091.
	4 Agricultural, forestry and fishery services	
4. 00	Agricultural, forestry and fishery services.	071, 0723, 073, pt. 0729, 085, 098.
MINING		
	5 Iron and ferroalloy ores mining	
5. 00	Iron and ferroalloy ores mining	1011, 106.
	6 Nonferrous metal ores mining	
6. 01	Copper ore mining	102.
6. 02	Nonferrous metal ores mining, except copper.	103, 104, 105, 108, 109.
	7 Coal mining	
7. 00	Coal mining	11, 12.
	8 Crude petroleum and natural gas	
8. 00	Crude petroleum and natural gas	1311, 1321.
	9 Stone and clay mining and quarrying	
9. 00	Stone and clay mining and quarrying	141, 142, 144, 145, 148, 149.
	10 Chemicals and fertilizer mineral mining	
10. 00	Chemical and fertilizer mineral mining.	147.
CONSTRUCTION		
	11 New construction	
11. 01	New construction, residential buildings (nonfarm).	pt. 15, pt. 16, pt. 17, pt. 6561.
11. 02	New construction, nonresidential buildings.	pt. 15, pt. 17.
11. 03	New construction, public utilities	pt. 15, pt. 16, pt. 17.
11. 04	New construction, highways	pt. 16, pt. 17.
11. 05	New construction, all other	pt. 15, pt. 16, pt. 17, 138.
	12 Maintenance and repair construction	
12. 01	Maintenance and repair construction, residential buildings (nonfarm).	pt. 15, pt. 17.
12. 02	Maintenance and repair construction, all other.	pt. 15, pt. 16, pt. 17.
MANUFACTURING		
	13 Ordnance and accessories	
13. 01	Complete guided missiles	1925.
13. 02	Ammunition, except for small arms, n.e.c.	1929.
13. 03	Tanks and tank components	1931.
13. 04	Sighting and fire control equipment	1941.
13. 05	Small arms	1951.
13. 06	Small arms ammunition	1961.
13. 07	Other ordnance and accessories	1911, 1999.
	14 Food and kindred products	
14. 01	Meat products	201.
14. 02	Creamery butter	2021.
14. 03	Cheese, natural and processed	2022.
14. 04	Condensed and evaporated milk	2023.
14. 05	Ice cream and frozen desserts	2024.
14. 06	Fluid milk	2026.
14. 07	Canned and cured sea foods	2031.
14. 08	Canned specialties	2032.
14. 09	Canned fruits and vegetables	2033.
14. 10	Dehydrated food products	2034.
14. 11	Pickles, sauces and salad dressings	2035.
14. 12	Fresh or frozen packaged fish	2036.
14. 13	Frozen fruits and vegetables	2037.
14. 14	Flour and cereal preparations	2041, 2043, 2045.
14. 15	Prepared feeds for animals and fowls	2042.
14. 16	Rice milling	2044.
14. 17	Wet corn milling	2046.
14. 18	Bakery products	205.
14. 19	Sugar	206.
14. 20	Confectionery and related products	207.
14. 21	Alcoholic beverages	2082–5.
14. 22	Bottled and canned soft drinks	2086.
14. 23	Flavoring extracts and sirups, n.e.c.	2087.
14. 24	Cottonseed oil mills	2091.
14. 25	Soybean oil mills	2092.
14. 26	Vegetable oil mills, n.e.c	2093.
14. 27	Animal and marine fats and oils	2094.
14. 28	Roasted coffee	2095.
14. 29	Shortening and cooking oils	2096.
14. 30	Manufactured ice	2097.
14. 31	Macaroni and spaghetti	2098.
14. 32	Food preparations, n.e.c	2099.
	15 Tobacco manufactures	
15. 01	Cigarettes, cigars, etc	2111, 2121, 2131.
15. 02	Tobacco stemming and redrying	2141.
	16 Broad and narrow fabrics, yarn and thread mills	
16. 01	Broadwoven fabric mills and fabric finishing plants.	2211, 2221, 2231, 2261, 2262.
16. 02	Narrow fabric mills	2241.
16. 03	Yarn mills and finishing of textiles, n.e.c.	2269, 2281–3.
16. 04	Thread mills	2284.
	17 Miscellaneous textile goods and floor coverings	
17. 01	Floor coverings	227.
17. 02	Felt goods, n.e.c	2291.
17. 03	Lace goods	2292.
17. 04	Paddings and upholstery fillings	2293.
17. 05	Processed textile waste	2294.
17. 06	Coated fabrics, not rubberized	2295.
17. 07	Tire cord and fabric	2296.
17. 08	Scouring and combing plants	2297.
17. 09	Cordage and twine	2298.
17. 10	Textile goods, n.e.c	2299.
	18 Apparel	
18. 01	Hosiery	2251, 2252.
18. 02	Knit apparel mills	2253, 2254, 2259.
18. 03	Knit fabric mills	2256.
18. 04	Apparel made from purchased materials.	23 (excluding 239), 3992.
	19 Miscellaneous fabricated textile products	
19. 01	Curtains and draperies	2391.

Industry Classification of the 1963 Input-Output Tables

Industry number and title		Related SIC codes (1957 edition)
19. 02	Housefurnishings, n.e.c	2392.
19. 03	Fabricated textile products, n.e.c	2393–9.
	20 Lumber and wood products, except containers	
20. 01	Logging camps and logging contractors.	2411.
20. 02	Sawmills and planing mills, general	2421.
20. 03	Hardwood dimensions and flooring	2426.
20. 04	Special product sawmills, n.e.c	2429.
20. 05	Millwork	2431.
20. 06	Veneer and plywood	2432.
20. 07	Prefabricated wood structures	2433.
20. 08	Wood preserving	2491.
20. 09	Wood products, n.e.c	2499.
	21 Wooden containers	
21. 00	Wooden containers	244.
	22 Household furniture	
22. 01	Wood household furniture	2511, 2519.
22. 02	Upholstered household furniture	2512.
22. 03	Metal household furniture	2514.
22. 04	Mattresses and bedsprings	2515.
	23 Other furniture and fixtures	
23. 01	Wood office furniture	2521.
23. 02	Metal office furniture	2522.
23. 03	Public building furniture	2531.
23. 04	Wood partitions and fixtures	2541.
23. 05	Metal partitions and fixtures	2542.
23. 06	Venetian blinds and shades	2591.
23. 07	Furniture and fixtures, n.e.c	2599.
	24 Paper and allied products except containers and boxes	
24. 01	Pulp mills	2611.
24. 02	Paper mills, except building paper	2621.
24. 03	Paperboard mills	2631.
24. 04	Envelopes	2642.
24. 05	Sanitary paper products	2647.
24. 06	Wallpaper and building paper and board mills.	2644, 2661.
24. 07	Converted paper, products, n.e.c., except containers and boxes.	2641, 2643, 2645, 2646, 2649.
	25 Paperboard containers and boxes	
25. 00	Paperboard containers and boxes	265.
	26 Printing and publishing	
26. 01	Newspapers	2711.
26. 02	Periodicals	2721.
26. 03	Book printing and publishing	273.
26. 04	Miscellaneous publishing	2741.
26. 05	Commercial printing	2751, 2752.
26. 06	Manifold business forms, blankbooks and binders.	2761, 2782.
26. 07	Greeting card publishing	2771.
26. 08	Miscellaneous printing services	2753, 2789, 279.
	27 Chemicals and selected chemical products	
27. 01	Industrial inorganic and organic chemicals.	281 excluding 28195.
27. 02	Fertilizers	2871, 2872.
27. 03	Agricultural chemicals, n.e.c	2879.
27. 04	Miscellaneous chemical products	2861, 289.
	28 Plastics and synthetic materials	
28. 01	Plastics materials and resins	2821.
28. 02	Synthetic rubber	2822.
28. 03	Cellulosic man-made fibers	2823.
28. 04	Organic fibers, noncellulosic	2824.
	29 Drugs, cleaning and toilet preparations	
29. 01	Drugs	283.
29. 02	Cleaning preparations	284 excluding 2844.
29. 03	Toilet preparations	2844.
	30 Paints and allied products	
30. 00	Paints and allied products	2851.

Industry Classification of the 1963 Input-Output Tables

Industry number and title		Related SIC codes (1957 edition)
	31 Petroleum refining and related industries	
31. 01	Petroleum refining and related products	2911, 299.
31. 02	Paving mixtures and blocks	2951.
31. 03	Asphalt felts and coatings	2952.
	32 Rubber and miscellaneous plastics products	
32. 01	Tires and inner tubes	3011.
32. 02	Rubber footwear	3021.
32. 03	Reclaimed rubber and miscellaneous rubber products, n.e.c.	3031, 3069.
32. 04	Miscellaneous plastics products	3079.
	33 Leather tanning and industrial leather products	
33. 00	Leather tanning and industrial leather products.	3111, 3121.
	34 Footwear and other leather products	
34. 01	Footwear cut stock	3131.
34. 02	Footwear except rubber	314.
34. 03	Other leather products	3151, 3161, 317, 3199.
	35 Glass and glass products	
35. 01	Glass and glass products except containers.	3211, 3229, 3231.
35. 02	Glass containers	3221.
	36 Stone and clay products	
36. 01	Cement, hydraulic	3241.
36. 02	Brick and structural clay tile	3251.
36. 03	Ceramic wall and floor tile	3253.
36. 04	Clay refractories	3255.
36. 05	Structural clay products, n.e.c	3259.
36. 06	Vitreous plumbing fixtures	3261.
36. 07	Food utensils, pottery	3262, 3263.
36. 08	Porcelain electrical supplies	3264.
36. 09	Pottery products, n.e.c	3269.
36. 10	Concrete block and brick	3271.
36. 11	Concrete products, n.e.c	3272.
36. 12	Ready-mixed concrete	3273.
36. 13	Lime	3274.
36. 14	Gypsum products	3275.
36. 15	Cut stone and stone products	3281.
36. 16	Abrasive products	3291.
36. 17	Asbestos products	3292.
36. 18	Gaskets and insulations	3293.
36. 19	Minerals, ground or treated	3295.
36. 20	Mineral wool	3296.
36. 21	Nonclay refractories	3297.
36. 22	Nonmetallic mineral products, n.e.c	3299.
	37 Primary iron and steel manufacturing	
37. 01	Blast furnaces and basic steel products.	331.
37. 02	Iron and steel foundries	332.
37. 03	Iron and steel forgings	3391.
37. 04	Primary metal products, n.e.c	3399.
	38 Primary nonferrous metals manufacturing	
38. 01	Primary copper	3331.
38. 02	Primary lead	3332.
38. 03	Primary zinc	3333.
38. 04	Primary aluminum	3334, 28195.
38. 05	Primary nonferrous metals, n.e.c	3339.
38. 06	Secondary nonferrous metals	3341.
38. 07	Copper rolling and drawing	3351.
38. 08	Aluminum rolling and drawing	3352.
38. 09	Nonferrous rolling and drawing, n.e.c.	3356.
38. 10	Nonferrous wire drawing and insulating.	3357.
38. 11	Aluminum castings	3361.
38. 12	Brass, bronze and copper castings	3362.
38. 13	Nonferrous castings, n.e.c	3369.
38. 14	Nonferrous forgings	3392.
	39 Metal containers	
39. 01	Metal cans	3411.
39. 02	Metal barrels, drums and pails	3491.
	40 Heating, plumbing and fabricated structural metal products	
40. 01	Metal sanitary ware	3431.
40. 02	Plumbing fittings and brass goods	3432.

Industry Classification of the 1963 Input-Output Tables

Industry number and title		Related SIC codes (1957 edition)
40.03	Heating equipment, except electric	3433.
40.04	Fabricated structural steel	3441.
40.05	Metal doors, sash and trim	3442.
40.06	Fabricated plate work (boiler shops)	3443.
40.07	Sheet metal work	3444.
40.08	Architectural metal work	3446.
40.09	Miscellaneous metal work	3449.
	41 Screw machine products, bolts, nuts, etc. and metal stampings	
41.01	Screw machine products and bolts, nuts, rivets and washers.	345.
41.02	Metal stampings	3461.
	42 Other fabricated metal products	
42.01	Cutlery	3421.
42.02	Hand and edge tools including saws	3423, 3425.
42.03	Hardware, n.e.c	3429.
42.04	Coating, engraving and allied services.	3471, 3479.
42.05	Miscellaneous fabricated wire products.	3481.
42.06	Safes and vaults	3492.
42.07	Steel springs	3493.
42.08	Pipe, valves and pipe fittings	3494, 3498.
42.09	Collapsible tubes	3496.
42.10	Metal foil and leaf	3497.
42.11	Fabricated metal products, n.e.c	3499.
	43 Engines and turbines	
43.01	Steam engines and turbines	3511.
43.02	Internal combustion engines, n.e.c	3519.
	44 Farm machinery	
44.00	Farm machinery	3522.
	45 Construction, mining, oil field machinery equipment	
45.01	Construction machinery	3531.
45.02	Mining machinery	3532.
45.03	Oil field machinery	3533.
	46 Materials handling machinery and equipment	
46.01	Elevators and moving stairways	3534.
46.02	Conveyors and conveying equipment	3535.
46.03	Hoists, cranes and monorails	3536.
46.04	Industrial trucks and tractors	3537.
	47 Metalworking machinery and equipment	
47.01	Machine tools, metal cutting types	3541.
47.02	Machine tools, metal forming types	3542.
47.03	Special dies and tools and machine tool accessories.	3544, 3545.
47.04	Metalworking machinery n.e.c	3548.
	48 Special industry machinery and equipment	
48.01	Food products machinery	3551.
48.02	Textile machinery	3552.
48.03	Woodworking machinery	3553.
48.04	Paper industries machinery	3554.
48.05	Printing trades machinery	3555.
48.06	Special industry machinery, n.e.c	3559.
	49 General industrial machinery and equipment	
49.01	Pumps and compressors	3561.
49.02	Ball and roller bearings	3562.
49.03	Blowers and fans	3564.
49.04	Industrial patterns	3565.
49.05	Power transmission equipment	3566.
49.06	Industrial furnaces and ovens	3567.
49.07	General industrial machinery, n.e.c	3569.
	50 Machine shop products	
50.00	Machine shop products	359.
	51 Office, computing and accounting machines	
51.01	Computing and related machines	3571.

Industry Classification of the 1963 Input-Output Tables

Industry number and title		Related SIC codes (1957 edition)
51.02	Typewriters	3572.
51.03	Scales and balances	3576.
51.04	Office machines, n.e.c	3579.
	52 Service industry machines	
52.01	Automatic merchandising machines	3581.
52.02	Commercial laundry equipment	3582.
52.03	Refrigeration machinery	3585.
52.04	Measuring and dispensing pumps	3586.
52.05	Service industry machines, n.e.c	3589.
	53 Electric transmission and distribution equipment and electrical industrial apparatus	
53.01	Electric measuring instruments	3611.
53.02	Transformers	3612.
53.03	Switchgear and switchboard apparatus.	3613.
53.04	Motors and generators	3621.
53.05	Industrial controls	3622.
53.06	Welding apparatus	3623.
53.07	Carbon and graphite products	3624.
53.08	Electrical industrial apparatus, n.e.c	3629.
	54 Household appliances	
54.01	Household cooking equipment	3631.
54.02	Household refrigerators and freezers	3632.
54.03	Household laundry equipment	3633.
54.04	Electric housewares and fans	3634.
54.05	Household vacuum cleaners	3635.
54.06	Sewing machines	3636.
54.07	Household appliances, n.e.c	3639.
	55 Electric lighting and wiring equipment	
55.01	Electric lamps	3641.
55.02	Lighting fixtures	3642.
55.03	Wiring devices	3643, 3644.
	56 Radio, television and communication equipment.	
56.01	Radio and television receiving sets	3651.
56.02	Phonograph records	3652.
56.03	Telephone and telegraph apparatus	3661.
56.04	Radio and television communication equipment.	3662.
	57 Electronic components and accessories	
57.01	Electron tubes	3671, 3672, 3673.
57.02	Semiconductors	3674.
57.03	Electronic components, n.e.c	3679.
	58 Miscellaneous electrical machinery, equipment and supplies	
58.01	Storage batteries	3691.
58.02	Primary batteries, wet and dry	3692.
58.03	X-ray apparatus and tubes	3693
58.04	Engine electrical equipment	3694.
58.05	Electrical equipment, n.e.c	3699.
	59 Motor vehicles and equipment	
59.01	Truck and bus bodies	3713.
59.02	Truck trailers	3715.
59.03	Motor vehicles and parts	3717.
	60 Aircraft and parts	
60.01	Aircraft	3721.
60.02	Aircraft engines and parts	3722.
60.03	Aircraft propellers and parts	3723.
60.04	Aircraft equipment, n.e.c	3729.
	61 Other transportation equipment	
61.01	Shipbuilding and repairing	3731.
61.02	Boatbuilding and repairing	3732.
61.03	Locomotives and parts	3741.
61.04	Railroad and street cars	3742.
61.05	Motorcycles, bicycles and parts	3751.
61.06	Trailer coaches	3791.
61.07	Transportation equipment, n.e.c	3799.
	62 Professional, scientific and controlling instruments and supplies	
62.01	Engineering and scientific instruments.	3811.

Industry Classification of the 1963 Input-Output Tables

Industry number and title	Related SIC codes (1957 edition)
62.02 Mechanical measuring devices	3821.
62.03 Automatic temperature controls	3822.
62.04 Surgical and medical instruments	3841.
62.05 Surgical appliances and supplies	3842.
62.06 Dental equipment and supplies	3843.
62.07 Watches, clocks and parts	387.
63 Optical, ophthalmic and photographic equipment and supplies	
63.01 Optical instruments and lenses	3831.
63.02 Ophthalmic goods	3851.
63.03 Photographic equipment and supplies.	3861.
64 Miscellaneous manufacturing	
64.01 Jewelry, including costume, and silverware.	391, 3961.
64.02 Musical instruments and parts	3931.
64.03 Games, toys, etc	3941, 3942, 3943.
64.04 Sporting and athletic goods, n.e.c	3949.
64.05 Pens, pencils, etc	395.
64.06 Artificial flowers	3962.
64.07 Buttons, needles, pins and fasteners	3963, 3964.
64.08 Brooms and brushes	3981.
64.09 Hard surface floor covering	3982.
64.10 Morticians goods	3988.
64.11 Signs and advertising displays	3993.
64.12 Miscellaneous manufactures, n.e.c	3983, 3984, 3987, 3995, 3999.
TRANSPORTATION, COMMUNICATION, ELECTRIC, GAS, AND SANITARY SERVICES	
65 Transportation and warehousing	
65.01 Railroads and related services	40, 474.
65.02 Local, suburban and interurban highway passenger transportation.	41.
65.03 Motor freight transportation and warehousing.	42, 473.
65.04 Water transportation	44.
65.05 Air transportation	45.
65.06 Pipe line transportation	46.
65.07 Transportation services	47, excluding 473, 474.
66 Communications, except radio and television broadcasting	
66.00 Communications, except radio and television.	48, excluding 483.
67 Radio and television broadcasting	
67.00 Radio and television broadcasting	483.
68 Electric, gas, water and sanitary services	
68.01 Electric utilities	491, pt. 493.
68.02 Gas utilities	492, pt. 493.
68.03 Water and sanitary services	494, 495, 496, 497, pt. 493.
WHOLESALE AND RETAIL TRADE	
69 Wholesale and retail trade	
69.01 Wholesale trade	50 (excluding manufacturers' sales offices).
69.02 Retail trade	52, 53, 54, 55, 56, 57, 58, 59, 7396.
FINANCE, INSURANCE AND REAL ESTATE	
70 Finance and insurance	
70.01 Banking	60.
70.02 Credit agencies	61, 67.
70.03 Security and commodity brokers	62.
70.04 Insurance carriers	63.
70.05 Insurance agents and brokers	64.
71 Real estate and rental	
71.01 Owner-occupied dwellings	
71.02 Real estate	65 (excluding pt. 6561), 66.

Industry Classification of the 1963 Input-Output Tables

Industry number and title	Related SIC codes (1957 edition)
SERVICES	
72 Hotels and lodging places; personal and repair services, except automobile repair	
72.01 Hotels and lodging places	70.
72.02 Personal and repair services except auto repair and barber and beauty shops.	72 (excluding 723, 724) 76 (excluding 7694 and pt. 7699).
72.03 Barber and beauty shops	723, 724.
73 Business services	
73.01 Miscellaneous business services	73 (excluding 731, 7396), 7694, pt. 7699.
73.02 Advertising	731.
73.03 Miscellaneous professional services	81, 89 (excluding 8921).
74 Research and development Eliminated as a separate industry in the 1963 study. Research and development performed for sale is distributed to the purchaser by each of the industries performing the research and development.	
75 Automobile repair and services	
75.00 Automobile repair and services	75.
76 Amusements	
76.01 Motion pictures	78.
76.02 Amusement and services	79.
77 Medical, educational services and nonprofit organizations	
77.01 Doctors and dentists	801, 802, 803, 804.
77.02 Hospitals	8061.
77.03 Other medical and health services	0722, 807, 809.
77.04 Educational services	82.
77.05 Nonprofit organizations	84, 86, 8921.
GOVERNMENT ENTERPRISES	
78 Federal Government enterprises	
78.01 Post Office	
78.02 Federal electric utilities	
78.03 Commodity Credit Corporation	
78.04 Other Federal Government enterprises.	
79 State and local government enterprises	
79.01 Local government passenger transit	
79.02 State and local electric utilities	
79.03 Other state and local government enterprises.	
IMPORTS	
80 Gross imports of goods and services	
80.01 Directly allocated imports	
80.02 Transferred imports	
DUMMY INDUSTRIES	
81 Business travel, entertainment and gifts	
81.00 Business travel, entertainment and gifts	
82 Office supplies	
82.00 Office supplies	
83 Scrap, used and secondhand goods	
83.00 Scrap, used and secondhand goods	
SPECIAL INDUSTRIES	
84 Government industry	
84.00 Government industry	
85 Rest of the world industry	
85.00 Rest of the world industry	
86 Household industry	
86.00 Household industry	

Source: U.S. Department of Commerce, Office of Business Economics.

Appendix B

A MATHEMATICAL SUMMARY OF THE MODEL AND ASSOCIATED ANALYTICAL TOOLS

The Georgia Economic Model may be technically described in straightforward terms as a "regional input-output model." The basic format of the model was outlined in Chapter 4. Here we reduce it to concise mathematical terms in order to describe more clearly the multipliers of Chapter 5 and the self-sufficiency analysis of Chapter 7.

B.1 The General Mathematical Model

A regional economy may be defined in terms of the following equation system:

$$\sum_{j=1}^{s} x_{ij} + \sum_{f=1}^{t} y_{if} + e_i = x_i, \quad (i = 1,2,3, \ldots s) \qquad \text{(B1)}$$

where

x_{ij} = sales of regional industry i to regional industry j,

y_{if} = sales of regional industry i to regional final demand sector f,

e_i = export sales of regional industry i,

x_i = total sales of regional industry i,

s = the dimension of the input-output matrix (for the Georgia Economic Model, $s = 50$), and

t = the number of final-demand sectors excluding exports (for the Georgia Economic Model, $t = 6$).

Similarly, a regional economy may be defined in terms of purchases as:

$$\sum_{i=1}^{s} x_{ij} + \sum_{p=1}^{t} v_{pj} + \sum_{i=1}^{s} m_{ij} + \sum_{k=1}^{r} n_{kj} = x_j, \quad (j = 1,2,3, \ldots s) \qquad (B2)$$

where

v_{pj} = value added by final-payment sector $\underline{p}$ in industry $\underline{j}$,

m_{ij} = imports by industry $\underline{j}$ of the products competitive to industry $\underline{i}$,

n_{kj} = imports by industry $\underline{j}$ of the products of noncompetitive industry $\underline{k}$.

The system is solved by assuming a constant production relation such that

$$x_{ij} = a_{ij} \cdot x_j, \qquad (B3)$$

where $a_{ij} = x_{ij} / x$, and substituting (B3) into (B1):

$$\sum_{i=1}^{s} a_{ij} \cdot x_j + \sum_{f=1}^{t} y_{if} + e_i = x_i, \quad (i = 1,2,3, \ldots s) \qquad (B4)$$

In matrix notation, (B4) can be represented as

$$A \cdot X + Y + E = X \qquad (B5)$$

As is well known, the solution to this system is

$$(I-A)^{-1} \cdot (Y + E) = X \ . \qquad (B6)$$

For ease in exposition, we identify $(I-A)^{-1}$ as $\underline{B}$, so that b_{ij} represents the direct and indirect purchases from industry $\underline{i}$ by industry $\underline{j}$ in satisfying one additional unit of final demand.

As pointed out in the text (4.2), the $\underline{A}$ matrix is frequently augmented; $\underline{A}$ is closed with respect to households by the addition of the household row (v_{1j}, j = 1,2,3, . . . s+1) and the household column (y_{i1}, i = 1,2,3, . . . $\underline{s}$) to the regional transactions matrix (the x_{ij}'s)

before dividing by $\underline{X}$, a vector of gross outputs now extended to include x_{s+1}, personal income. When this is done, the elements of the direct-requirements matrix are designated $_2a_{ij}$ and the elements of the corresponding inverse are designated $_2b_{ij}$. These $_2b_{ij}$ represent the direct, indirect, and induced purchases from industry $\underline{i}$ by industry $\underline{j}$ in satisfying one additional unit of final demand (now y_{jf}, for f = 2,3, . . . $\underline{t}$, and e_j).

B.2 Multiplier Formulation

We have computed three types of multipliers: output multipliers, employment multipliers, and income multipliers. In relating changes in final demand to changes in their describing variables, these multipliers are common in interpretation. We outline below their evolution.

B.2.1 Output Multipliers

Output multipliers are merely the sums of columns in the inverse matrices, showing increases in outputs per dollar increase in final demand. The "simple" output multiplier for industry $\underline{j}$ is the sum of cells in column $\underline{j}$ of the simple inverse:

$$_1z_j = \sum_{i=1}^{s} b_{ij} \quad . \tag{B7}$$

The "total" output multiplier for industry $\underline{j}$ is the sum of cells in column $\underline{j}$ of the second, or augmented, inverse:

$$_2z_j = \sum_{i=1}^{s+1} {}_2b_{ij} \quad . \tag{B8}$$

The meanings attached here to "simple" and "total" apply throughout this discussion.

B.2.2 Employment Multipliers

Employment multipliers are derived from output multipliers simply by converting from an output to an employment base. The simple employment multiplier for industry j is derived as

$$ {}_3z_j = \sum_{i=1}^{s} b_{ij} \cdot \frac{w_i}{x_i} \quad , \tag{B9} $$

and the total employment multiplier as

$$ {}_4z_j = \sum_{i=1}^{s+1} {}_2b_{ij} \cdot \frac{w_i}{x_i} \quad , \tag{B10} $$

where w_i is employment in industry i. (In this study, we have used "covered" employment as provided by the Georgia Department of Labor.)

B.2.3 Government-Income Multipliers

In constructing government-income multipliers, we simply substitute government-income coefficients for the employment-output ratios above.

The government-income multipliers for industry j are derived as presented below:

Government	Simple multiplier	Total multiplier	(B11-16)
Local governments	${}_5z_j = \sum_{i=1}^{s} b_{ij} \cdot \frac{v_{3i}}{x_i}$	${}_6z_j = \sum_{i=1}^{s+1} {}_2b_{ij} \cdot \frac{v_{3i}}{x_i}$	
State government	${}_7z_j = \sum_{i=1}^{s} b_{ij} \cdot \frac{v_{4i}}{x_i}$	${}_8z_j = \sum_{i=1}^{s+1} {}_2b_{ij} \cdot \frac{v_{4i}}{x_i}$	
Federal government	${}_9z_j = \sum_{i=1}^{s} b_{ij} \cdot \frac{v_{5i}}{x_i}$	${}_{10}z_j = \sum_{i=1}^{s+1} {}_2b_{ij} \cdot \frac{v_{5i}}{x_i}$	

B.2.4 Household-Income Multipliers

"Income multiplier" is a term traditionally used to describe the additional household income in an economy attributable to a one-unit increase

in household income in the industry in question. We feel that this definition is awkward and inconsistent with the approach taken in most interpretations. Therefore, we have defined the "household-income multiplier" for industry j to be the addition to household incomes in the economy due to a one-unit increase in final demand. The simple household-income multiplier is derived as

$$11^{z}_{j} = \sum_{i=1}^{s} b_{ij} \cdot \frac{v_{1i}}{x_i} \quad , \tag{B17}$$

and the total household-income multiplier as

$$12^{z}_{j} = \sum_{i=1}^{s+1} 2^{b}_{ij} \cdot \frac{v_{1i}}{x_i} \quad . \tag{B18}$$

A glance at Table 5.4a in the text and Table 4 of the Model will convince the reader that these total multipliers are also found in the household row of the extended inverse, that $12^{z}_{j} = 2^{b}_{51,j}$.

In our discussion of household-income multipliers, we presented a table showing income generated per dollar of final sales. In this table (5.4a), direct income generated by industry j is simply the household-income coefficient, $a_{51,j} = \frac{v_{1j}}{x_j}$; indirect income generated is the simple household-income multiplier less direct income generated, or $11^{z}_{j} - a_{51,j}$; and induced income generated is the total household-income multiplier less the simple one, or $12^{z}_{j} - 11^{z}_{j}$. Total income generated per unit of final sales is 12^{z}_{j}, or the sum of the above elements.

B.3 Self-Sufficiency Analysis

The self-sufficiency chart is drawn from computations involving an inverse based on the Georgia total-flows matrix. The total-flows matrix, with elements written as x^{T}_{ij}, is computed by adding the regional-transactions

matrix, the competitive-imports matrix, and the noncompetitive-imports matrix. To facilitate this addition, the noncompetitive industries have been identified with their most comparable industries in Georgia and aggregated to form a 50-industry matrix. Elements in the total-flows matrix, then, are

$$x^{T}_{ij} = x_{ij} + m_{ij} + n_{ij} \cdot \tag{B19}$$

Proceeding, we compute a comparable direct-requirements matrix with elements

$$a^{T}_{ij} = \frac{x^{T}_{ij}}{x_j} \cdot \tag{B20}$$

The solution to the total-flows model, then, can be written as

$$B^{T} = (I - A^{T})^{-1} \tag{B21}$$

Domestic final demand for each industry $\underline{i}$ is computed as

$$_{d}y_i = \sum_{f=1}^{4} y_{if} + \sum_{f=1}^{4} {}_{m}y_{if} + \sum_{f=1}^{4} {}_{n}y_{if} , \tag{B22}$$

where $\underline{f}$ counts through domestic final demand sectors (personal consumption expenditures, net private investment, and the State and local government categories), $_{m}y_{if}$ denotes a competitive import by final-demand sector $\underline{f}$ of the product of industry i and $_{n}y_{if}$ denotes a noncompetitive import. Export demand is redefined as the remainder

$$e'_i = e_i + \sum_{f=5}^{6} y_{if} , \tag{B23}$$

where $\underline{f}$ counts Federal government expenditures on defense and on civil matters.

With these variables we can examine self-sufficiency in Georgia. The output of industry $\underline{i}$ required for the State to be 100 percent self-sufficient is

$$_{s}x_i = \sum_{j=1}^{s} {}_{d}y_j \cdot b^{T}_{ij} \tag{B24}$$

The direct and indirect imports of the products of industry $\underline{i}$ into Georgia are

$$ {}_{s}m_{i} = \sum_{j=1}^{s} {}^{T}b_{ij} \cdot \left[\sum_{k=1}^{s} m_{ik} + \sum_{k=1}^{s} n_{ik} + \sum_{f=1}^{t} {}^{m}y_{if} + \sum_{f=1}^{t} {}^{n}y_{if} \right] \quad \text{(B25)} $$

The direct and indirect exports of the products of industry $\underline{i}$ from Georgia are

$$ {}_{s}e_{i} = {}^{T}b_{ij} \cdot e_{i} \cdot $$

The self-sufficiency chart, as explained in the text, is plotted from these values.

C

INTERVIEW FORM

The following is a copy of an interview form used in the Georgia Interindustry Study. As noted earlier (A.3.1), it includes values from rows and columns of the first estimate for use by the interviewer in identifying important questions to be answered.

Two other questionnaires were used in the Study, both derived from Sections I, II, and IV of this basic interview form. One was sent to a sample of firms listed in the Georgia Manufacturing Directory and the other was left with interviewees when data on final payments were not readily available. Neither is reproduced here.

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GEORGIA INTERINDUSTRY STUDY

ESTIMATES OF SALES AND PURCHASE PATTERNS
FOR AN ESTABLISHMENT IN INDUSTRY 1415:

PREPARED FEEDS FOR ANIMALS, FOWLS

INTERVIEW NO.____

DATE:_____

I. G E N E R A L

THE FOLLOWING QUESTIONS DEAL WITH THE GENERAL NATURE OF YOUR BUSINESS AND PERMIT US TO COMBINE YOUR RESPONSES STATISTICALLY WITH THOSE OF OTHER FIRMS.

THE PRODUCTS PRODUCED BY YOUR ESTABLISHMENT AND BY YOUR INDUSTRY IN GEORGIA ARE CLASSIFIED IN THE FOLLOWING TABLE. PLEASE CORRECT OUR ESTIMATES. IF YOU SELL ITEMS WHICH YOU PURCHASE FROM ANOTHER PRODUCER, PLEASE LIST THEM IN THE SPACE PROVIDED FOR PRODUCTS SOLD BUT NOT PRODUCED.

INDUSTRY IN WHICH PRODUCT IS CLASSIFIED		----PERCENT OF PRODUCTION---- STUDY ESTIMATE	YOUR ESTABLISHMENT	ENTIRE INDUSTRY
PREPARED FEEDS FOR ANIMALS, FOWLS	1415	95.2	_____	_____
FLOUR AND CEREAL PREPARATIONS	1414	2.3	_____	_____
WHOLESALE TRADE	6901	1.2	_____	_____
MEAT PRODUCTS	1401	0.3	_____	_____
OTHER ITEMS PRODUCED:		0.9		
_____			_____	_____
_____			_____	_____
_____			_____	_____
TOTAL PRODUCTION		100.0	100.0	

PRODUCTS SOLD BUT NOT PRODUCED:

_____

_____

_____

PLEASE NOTE THAT THE QUESTIONS IN SECTION II REFER TO THE SALES DISTRIBUTION OF YOUR PRIMARY PRODUCT. IF YOU CANNOT DISTINGUISH BETWEEN THE DISTRIBUTIONS OF YOUR PRIMARY PRODUCT AND YOUR OTHER PRODUCTS, PLEASE ANSWER THE QUESTIONS ON THE BASIS OF ALL SALES AND WARN US BY CHECKING BELOW:

ANSWERS REFER TO SALES OF BOTH PRIMARY AND SECONDARY PRODUCTS_____(YES) _____(NO)

THE INFORMATION IN THIS QUESTIONNAIRE REFLECTS: CALENDAR YEAR 1970_____ FISCAL YEAR 1970_____

WHAT IS THE AVERAGE LABOR PRODUCTIVITY OF YOUR ESTABLISHMENT, AS CALCULATED BELOW?

(TOTAL VALUE OF PRODUCTION, 1970)/(AVERAGE MONTHLY EMPLOYMENT) = _____

DO YOU CONSIDER THIS PERFORMANCE TO BE HIGH_____, LOW_____, OR THE SAME_____ AS COMPARED TO THE PRODUCTIVITY FOR OTHER ESTABLISHMENTS IN YOUR INDUSTRY IN GEORGIA?
WHAT DO YOU EXPECT THIS AVERAGE LABOR PRODUCTIVITY TO BE IN 1975?_____ IN 1980?_____ (NOTE: PLEASE USE CURRENT DOLLAR VALUES -- DO NOT ATTEMPT TO ACCOUNT FOR INFLATION.)

BY WHAT MEANS WERE MATERIALS TRANSPORTED TO YOUR ESTABLISHMENT IN 1970? (PLEASE ESTIMATE)

MEANS OF TRANSPORTATION	PERCENT OF PURCHASED MATERIALS
OWN TRUCK ONLY	_____
TRUCK ONLY	_____
RAILROAD ONLY	_____
RAILROAD AND TRUCK	_____
AIRPLANE AND TRUCK	_____
OTHER _____	_____
TOTAL	100.0

BY WHAT MEANS WERE YOUR PRIMARY PRODUCTS TRANSPORTED TO THEIR NEXT DESTINATIONS IN 1970? (PLEASE ESTIMATE)

MEANS OF TRANSPORTATION	PERCENT OF TOTAL SALES
OWN TRUCK ONLY	_____
TRUCK ONLY	_____
RAILROAD ONLY	_____
TRUCK AND RAILROAD	_____
TRUCK AND AIRPLANE	_____
OTHER _____	_____
TOTAL	100.0

THROUGH WHAT DISTRIBUTION CHANNELS DID YOU SELL YOUR PRODUCT?

MEANS OF DISTRIBUTION	PERCENT OF TOTAL SALES
DIRECT TO USER OR CONSUMER	_____
THROUGH AGENT	_____
THROUGH WHOLESALERS	_____
THROUGH RETAILERS	_____
OTHER MEANS	
_____	_____
_____	_____
_____	_____
TOTAL SALES	100.0

II. SALES SUMMARY

PLEASE NOTE THAT WE ARE INTERESTED IN THE USER OF YOUR PRIMARY PRODUCT. SALES TO WHOLESALERS, RETAILERS, OR OTHER DISTRIBUTORS FOR RESALE SHOULD BE REPORTED AS SALES TO THE PROCESSING OR CONSUMING MARKETS IN WHICH THEY ARE USED OR CONSUMED.

PURCHASERS OR USERS	--PERCENT OF TOTAL SALES-- STUDY ESTIMATE	YOUR ESTIMATE	COMMENTS
GEORGIA HOUSEHOLD CONSUMERS	3.2	_____	_____
GEORGIA CITY AND COUNTY GOVERNMENTS	0.0	_____	_____
GEORGIA STATE GOVERNMENT	0.0	_____	_____
DURABLE EQUIPMENT FOR OTHER GEORGIA PRODUCERS	0.0	_____	_____
TOTAL TO FINAL USERS IN GEORGIA	3.2	_____	
REMAINDER OF SALES:			
INTERMEDIATE PRODUCTS CONSUMED BY OTHER GEORGIA PRODUCERS	47.4	_____	_____
PRIVATE FINAL USERS AND PRODUCERS OUTSIDE OF GEORGIA	49.3	_____	_____
FEDERAL GOVERNMENT, DEFENSE	0.0	_____	_____
FEDERAL GOVERNMENT, NON-DEFENSE	0.0	_____	_____
TOTAL SALES	100.0	100.0	

WE ARE ALSO INTERESTED IN THE FLOW OF GOODS AND SERVICES BETWEEN REGIONS IN GEORGIA.

PLEASE APPROXIMATE THE PERCENTAGE OF THE TOTAL VALUE OF SALES IN 1970 WHICH YOU DELIVERED TO EACH OF THE FOLLOWING AREAS. (IN THIS STUDY, THE "REGIONAL MARKET" IS DEFINED AS FLORIDA, SOUTH CAROLINA, NORTH CAROLINA, ALABAMA, AND TENNESSEE. THE CATEGORY "ALL OTHER PLACES" REFERS TO ALL PLACES EXECPT GEORGIA AND THE STATES INCLUDED IN THE REGIONAL MARKET.)

AREA	PERCENT OF TOTAL SALES	COMMENTS
WITHIN GEORGIA	_____	_____
THE REGIONAL MARKET	_____	_____
ALL OTHER PLACES	_____	_____
TOTAL SALES, 1970	100.0	

NOW CONSIDER ONLY YOUR SALES WITHIN GEORGIA. PLEASE ESTIMATE THE PERCENTAGE OF SALES WITHIN GEORGIA TO EACH OF THE EIGHT GEORGIA REGIONS DESIGNATED ON THE MAP IN THE INSTRUCTIONS.

REGION	PERCENT OF GEORGIA SALES	COMMENTS
GEORGIA REGION I	_____	_____
GEORGIA REGION II	_____	_____
GEORGIA REGION III	_____	_____
GEORGIA REGION IV	_____	_____
GEORGIA REGION V	_____	_____
GEORGIA REGION VI	_____	_____
GEORGIA REGION VII	_____	_____
GEORGIA REGION VIII	_____	_____
TOTAL SALES WITHIN GEORGIA, 1970	100.0	

III. DETAILED PATTERN OF SALES TO OTHER GEORGIA PRODUCERS

SECTION II IDENTIFIED YOUR SALES TO FINAL USERS. THIS SECTION SPECIFIES SALES TO OTHER GEORGIA PRODUCERS WHO USE YOUR PRIMARY PRODUCT AS A RAW MATERIAL OR INPUT TO THEIR PRODUCTION PROCESS.

PLEASE NOTICE THAT WE ASK TWO ESTIMATES OF YOU. THE FIRST IS A DISTRIBUTION OF THE SALES (OR OUTPUT) OF YOUR ESTABLISHMENT ITSELF. THE SECOND IS A DISTRIBUTION OF SALES BY ALL GEORGIA PRODUCERS OF YOUR PRODUCT, TO THE EXTENT THAT YOU ARE AWARE OF THE SALES BY YOUR LOCAL COMPETITORS, ALTHOUGH YOUR SALES PATTERN MAY DIFFER SIGNIFICANTLY FROM THAT OF THE REST OF THE INDUSTRY, YOUR COMMENTS WILL HELP US TO VALIDATE REPLIES BY OTHER FIRMS.

HERE WE ATTEMPT TO ALLOCATE SALES TO OTHER GEORGIA PRODUCERS. PLEASE NOTE THAT THE TABLE IS IN PERCENT OF TOTAL SALES AND THAT YOUR ESTIMATES (WITH REGARD TO SALES BY YOUR ESTABLISHMENT) SHOULD ADD TO BE THE "INTERMEDIATE PRODUCTS CONSUMED BY OTHER GEORGIA PRODUCERS" WHICH YOU NOTED IN SECTION II.

ALSO, PLEASE REMEMBER THAT THIS DISTRIBUTION SHOULD COVER YOUR PRIMARY PRODUCT ONLY, CONSISTENT WITH YOUR REPLY IN SECTION I. PLEASE EXCLUDE SECONDARY PRODUCTS (WHICH INCLUDE ALL PRODUCTS NOT CLASSIFIED AS PRODUCTS OF YOUR INDUSTRY).

IN CORRECTING OUR ESTIMATES, YOU SHOULD FIRST EXAMINE THE ENTIRE COLUMN OF SALES FOR ITEMS WHICH SEEM IN ERROR, MARKING THEM FOR MORE CAREFUL EXAMINATION. SINCE THE LIST CONTAINS OVER 275 INDUSTRIES, THE REVIEW WILL BE USEFUL IN SPOTTING CATEGORIES AND IN PLACING PUZZLING SALES.

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
DAIRY FARM PRODUCTS	0101	1.4	_____	_____	_____
POULTRY AND EGGS	0102	27.4	_____	_____	_____
MEAT, ANIMALS, MISC LIVESTOCK PROD	0103	3.0	_____	_____	_____
COTTON	0201	0.0	_____	_____	_____
FOOD FEED GRAINS AND GRASS SEEDS	0202	0.0	_____	_____	_____
TOBACCO	0203	0.0	_____	_____	_____
FRUITS AND TREE NUTS	0204	0.0	_____	_____	_____
VEGETABLES, SUGAR AND MISC CROPS	0205	0.0	_____	_____	_____
OIL BEARING CROPS	0206	0.0	_____	_____	_____
FOREST, GREENHOUSE AND NURSERY PROD	0207	0.0	_____	_____	_____
FORESTRY AND FISHERY PRODUCTS	0300	0.0	_____	_____	_____
AGRIC, FORESTRY AND FISHERY SERV	0400	0.2	_____	_____	_____
IRON AND FERROALLOY ORES MINING	0500	0.0	_____	_____	_____
NONFERROUS METAL ORES MINING EXC CU	0602	0.0	_____	_____	_____
STONE AND CLAY MINING AND QUARRYING	0900	0.0	_____	_____	_____

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
CHEMICAL, FERTILIZER MINERAL MINING	1000	0.0	_____	_____	_____
NEW CONSTRUC, RESIDEN BLDG, NONFARM	1101	0.0	_____	_____	_____
NEW CONSTRUC, NONRESIDENTIAL BLDGS	1102	0.0	_____	_____	_____
NEW CONSTRUCTION, PUBLIC UTILITIES	1103	0.0	_____	_____	_____
NEW CONSTRUCTION, HIGHWAYS	1104	0.0	_____	_____	_____
NEW CONSTRUCTION, ALL OTHER	1105	0.0	_____	_____	_____
MAINT, REP CONSTRUC, RES BLDG, NFRM	1201	0.0	_____	_____	_____
MAINT, REPAIR CONSTRUC, ALL OTHER	1202	0.0	_____	_____	_____
AMMUNITION, EXCEPT SMALL ARMS, NEC	1302	0.0	_____	_____	_____
SIGHTING AND FIRE CONTROL EQUIPMENT	1304	0.0	_____	_____	_____
MEAT PRODUCTS	1401	0.0	_____	_____	_____
CHEESE, NATURAL AND PROCESSED	1403	0.0	_____	_____	_____
CONDENSED AND EVAPORATED MILK	1404	0.0	_____	_____	_____
ICE CREAM AND FROZEN DESSERTS	1405	0.0	_____	_____	_____
FLUID MILK	1406	0.0	_____	_____	_____
CANNED AND CURED SEA FOODS	1407	0.0	_____	_____	_____
CANNED SPECIALTIES	1408	0.0	_____	_____	_____
CANNED FRUITS AND VEGETABLES	1409	0.0	_____	_____	_____
DEHYDRATED FOOD PRODUCTS	1410	0.0	_____	_____	_____
PICKLES, SAUCES AND SALAD DRESSINGS	1411	0.0	_____	_____	_____
FRESH OR FROZEN PACKAGED FISH	1412	0.0	_____	_____	_____
FROZEN FRUITS AND VEGETABLES	1413	0.0	_____	_____	_____
FLOUR AND CEREAL PREPARATIONS	1414	0.0	_____	_____	_____
PREPARED FEEDS FOR ANIMALS, FOWLS	1415	15.3	_____	_____	_____
BAKERY PRODUCTS	1418	0.0	_____	_____	_____
SUGAR	1419	0.0	_____	_____	_____
CONFECTIONERY AND RELATED PRODUCTS	1420	0.0	_____	_____	_____
ALCOHOLIC BEVERAGES	1421	0.0	_____	_____	_____
BOTTLED AND CANNED SOFT DRINKS	1422	0.0	_____	_____	_____
FLAVORING EXTRACTS AND SIRUPS, NEC	1423	0.0	_____	_____	_____
COTTONSEED OIL MILLS	1424	0.0	_____	_____	_____
SOYBEAN OIL MILLS	1425	0.0	_____	_____	_____
VEGETABLE OIL MILLS, NEC	1426	0.0	_____	_____	_____
ANIMAL AND MARINE FATS AND OILS	1427	0.0	_____	_____	_____
ROASTED COFFEE	1428	0.0	_____	_____	_____

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
SHORTENING AND COOKING OILS	1429	0.0			
MANUFACTURED ICE	1430	0.0			
FOOD PREPARATIONS, NEC	1432	0.0			
CIGARETTES, CIGARS, ETC	1501	0.0			
TOBACCO STEMMING AND REDRYING	1502	0.0			
BROADWVN FABRIC MILLS, FAB FIN PLNT	1601	0.0			
NARROW FABRIC MILLS	1602	0.0			
YARN MILLS, FINISHING TEXTILES, NEC	1603	0.0			
THREAD MILLS	1604	0.0			
FLOOR COVERINGS	1701	0.0			
FELT GOODS, NEC	1702	0.0			
PADDINGS AND UPHOLSTERY FILLINGS	1704	0.0			
PROCESSED TEXTILE WASTE	1705	0.0			
TIRE CORD AND FABRIC	1707	0.0			
CORDAGE AND TWINE	1709	0.0			
TEXTILE GOODS, NEC	1710	0.0			
HOSIERY	1801	0.0			
KNIT APPAREL MILLS	1802	0.0			
KNIT FABRIC MILLS	1803	0.0			
APPAREL MADE FR PURCHASED MATERIALS	1804	0.0			
CURTAINS AND DRAPERIES	1901	0.0			
HOUSEFURNISHINGS, NEC	1902	0.0			
FABRICATED TEXTILE PRODUCTS, NEC	1903	0.0			
LOGGING CAMPS, LOGGING CONTRACTORS	2001	0.0			
SAWMILLS AND PLANING MILLS, GENERAL	2002	0.0			
HARDWOOD DIMENSION AND FLOORING	2003	0.0			
SPECIAL PRODUCT SAWMILLS, NEC	2004	0.0			
MILLWORK	2005	0.0			
VENEER AND PLYWOOD	2006	0.0			
PREFABRICATED WOOD STRUCTURES	2007	0.0			
WOOD PRESERVING	2008	0.0			
WOOD PRODUCTS, NEC	2009	0.0			
WOODEN CONTAINERS	2100	0.0			
WOOD HOUSEHOLD FURNITURE	2201	0.0			
UPHOLSTERED HOUSEHOLD FURNITURE	2202	0.0			

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
METAL HOUSEHOLD FURNITURE	2203	0.0			
MATTRESSES AND BEDSPRINGS	2204	0.0			
METAL OFFICE FURNITURE	2302	0.0			
PUBLIC BUILDING FURNITURE	2303	0.0			
WOOD PARTITIONS AND FIXTURES	2304	0.0			
METAL PARTITIONS AND FIXTURES	2305	0.0			
VENETIAN BLINDS AND SHADES	2306	0.0			
FURNITURE AND FIXTURES, NEC	2307	0.0			
PULP MILLS	2401	0.0			
PAPER MILLS, EXCEPT BUILDING PAPER	2402	0.0			
PAPERBOARD MILLS	2403	0.0			
ENVELOPES	2404	0.0			
SANITARY PAPER PRODUCTS	2405	0.0			
WALLPAPER, BLDG PAPER, BOARD MILLS	2406	0.0			
CONV PAPER, PROD NEC EX CONTNR, BXS	2407	0.0			
PAPERBOARD CONTAINERS AND BOXES	2500	0.0			
NEWSPAPERS	2601	0.0			
PERIODICALS	2602	0.0			
BOOK PRINTING AND PUBLISHING	2603	0.0			
MISC PUBLISHING	2604	0.0			
COMMERCIAL PRINTING	2605	0.0			
MANIFOLD BUS FRMS, BLNKBKS, BINDERS	2606	0.0			
MISC PRINTING SERVICES	2608	0.0			
INDUS INORGANIC, ORGANIC CHEMICALS	2701	0.0			
FERTILIZERS	2702	0.0			
AGRICULTURAL CHEMICALS, NEC	2703	0.0			
MISC CHEMICAL PRODUCTS	2704	0.0			
PLASTICS MATERIALS AND RESINS	2801	0.0			
SYNTHETIC RUBBER	2802	0.0			
CELLULOSIC MAN-MADE FIBERS	2803	0.0			
ORGANIC FIBERS, NONCELLULOSIC	2804	0.0			
DRUGS	2901	0.0			
CLEANING PREPARATIONS	2902	0.0			
TOILET PREPARATIONS	2903	0.0			
PAINTS AND ALLIED PRODUCTS	3000	0.0			

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
PETROLEUM REFINING, RELATED PROD	3101	0.0			
PAVING MIXTURES AND BLOCKS	3102	0.0			
ASPHALT FELTS AND COATINGS	3103	0.0			
TIRES AND INNER TUBES	3201	0.0			
RUBBER FOOTWEAR	3202	0.0			
RECLAIMED RUBBER, MISC RUB PROD NEC	3203	0.0			
MISC PLASTICS PRODUCTS	3204	0.0			
LEATHER TANNING, INDUS LEATHER PROD	3300	0.0			
FOOTWEAR EXCEPT RUBBER	3402	0.0			
OTHER LEATHER PRODUCTS	3403	0.0			
GLASS AND GLASS PROD EXC CONTAINERS	3501	0.0			
GLASS CONTAINERS	3502	0.0			
CEMENT, HYDRAULIC	3601	0.0			
BRICK AND STRUCTURAL CLAY TILE	3602	0.0			
CERAMIC WALL AND FLOOR TILE	3603	0.0			
CLAY REFRACTORIES	3604	0.0			
STRUCTURAL CLAY PRODUCTS, NEC	3605	0.0			
VITREOUS PLUMBING FIXTURES	3606	0.0			
PORCELAIN ELECTRICAL SUPPLIES	3608	0.0			
POTTERY PRODUCTS, NEC	3609	0.0			
CONCRETE BLOCK AND BRICK	3610	0.0			
CONCRETE PRODUCTS, NEC	3611	0.0			
READY-MIXED CONCRETE	3612	0.0			
GYPSUM PRODUCTS	3614	0.0			
CUT STONE AND STONE PRODUCTS	3615	0.0			
ABRASIVE PRODUCTS	3616	0.0			
GASKETS AND INSULATIONS	3618	0.0			
MINERALS, GROUND OR TREATED	3619	0.0			
MINERAL WOOL	3620	0.0			
NONCLAY REFRACTORIES	3621	0.0			
NONMETALLIC MINERAL PRODUCTS, NEC	3622	0.0			
BLAST FURNACE AND BASIC STEEL PROD	3701	0.0			
IRON AND STEEL FOUNDRIES	3702	0.0			
IRON AND STEEL FORGINGS	3703	0.0			
PRIMARY METAL PRODUCTS, NEC	3704	0.0			

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
SECONDARY NONFERROUS METALS	3806	0.0			
ALUMINUM ROLLING AND DRAWING	3808	0.0			
NONFERROUS ROLLING AND DRAWING, NEC	3809	0.0			
NONFERROUS WIRE DRAWING, INSULATING	3810	0.0			
ALUMINUM CASTINGS	3811	0.0			
BRASS, BRONZE, COPPER CASTINGS	3812	0.0			
NONFERROUS CASTINGS, NEC	3813	0.0			
METAL CANS	3901	0.0			
METAL BARRELS, DRUMS AND PAILS	3902	0.0			
METAL SANITARY WARE	4001	0.0			
PLUMBING FITTINGS AND BRASS GOODS	4002	0.0			
HEATING EQUIPMENT EXCEPT ELECTRIC	4003	0.0			
FABRICATED STRUCTURAL STEEL	4004	0.0			
METAL DOORS, SASH AND TRIM	4005	0.0			
FABRICATED PLATE WRK (BOILER SHOPS)	4006	0.0			
SHEET METAL WORK	4007	0.0			
ARCHITECTURAL METAL WORK	4008	0.0			
MISC METAL WORK	4009	0.0			
SCR MACH PROD, BLTS NUTS RVTS WSHRS	4101	0.0			
METAL STAMPINGS	4102	0.0			
HAND AND EDGE TOOLS INCLUDING SAWS	4202	0.0			
HARDWARE, NEC	4203	0.0			
COATING, ENGRAVING, ALLIED SERVICES	4204	0.0			
MISC FABRICATED WIRE PRODUCTS	4205	0.0			
PIPE, VALVES AND PIPE FITTINGS	4208	0.0			
FABRICATED METAL PRODUCTS, NEC	4211	0.0			
STEAM ENGINES AND TURBINES	4301	0.0			
FARM MACHINERY	4400	0.0			
CONSTRUCTION MACHINERY	4501	0.0			
ELEVATORS AND MOVING STAIRWAYS	4601	0.0			
CONVEYORS AND CONVEYING EQUIPMENT	4602	0.0			
INDUSTRIAL TRUCKS AND TRACTORS	4604	0.0			
MACHINE TOOLS, METAL CUTTING TYPES	4701	0.0			
MACHINE TOOLS, METAL FORMING TYPES	4702	0.0			
SPEC DIES, TOOLS, MACH TOOL ACCESS	4703	0.0			

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
METALWORKING MACHINERY, NEC	4704	0.0			
FOOD PRODUCTS MACHINERY	4801	0.0			
TEXTILE MACHINERY	4802	0.0			
WOODWORKING MACHINERY	4803	0.0			
PAPER INDUSTRIES MACHINERY	4804	0.0			
PRINTING TRADES MACHINERY	4805	0.0			
SPECIAL INDUSTRY MACHINERY, NEC	4806	0.0			
PUMPS AND COMPRESSORS	4901	0.0			
BLOWERS AND FANS	4903	0.0			
POWER TRANSMISSION EQUIPMENT	4905	0.0			
GENERAL INDUSTRIAL MACHINERY, NEC	4907	0.0			
MACHINE SHOP PRODUCTS	5000	0.0			
COMPUTING AND RELATED MACHINES	5101	0.0			
OFFICE MACHINES, NEC	5104	0.0			
AUTOMATIC MERCHANDISING MACHINES	5201	0.0			
COMMERCIAL LAUNDRY EQUIPMENT	5202	0.0			
REFRIGERATION MACHINERY	5203	0.0			
SERVICE INDUSTRY MACHINES, NEC	5205	0.0			
TRANSFORMERS	5302	0.0			
SWITCHGEAR, SWITCHBOARD APPARATUS	5303	0.0			
MOTORS AND GENERATORS	5304	0.0			
INDUSTRIAL CONTROLS	5305	0.0			
WELDING APPARATUS	5306	0.0			
ELECTRICAL INDUSTRIAL APPARATUS NEC	5308	0.0			
ELECTRIC HOUSEWARES AND FANS	5404	0.0			
HOUSEHOLD VACUUM CLEANERS	5405	0.0			
SEWING MACHINES	5406	0.0			
LIGHTING FIXTURES	5502	0.0			
WIRING DEVICES	5503	0.0			
RADIO AND TV RECEIVING SETS	5601	0.0			
TELEPHONE, TELEGRAPH APPARATUS	5603	0.0			
RADIO, TV COMMUNICATION EQUIPMENT	5604	0.0			
ELECTRON TUBES	5701	0.0			
ELECTRONIC COMPONENTS, NEC	5703	0.0			
STORAGE BATTERIES	5801	0.0			

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
X-RAY APPARATUS AND TUBES	5803	0.0			
ENGINE ELECTRICAL EQUIPMENT	5804	0.0			
ELECTRICAL EQUIPMENT, NEC	5805	0.0			
TRUCK AND BUS BODIES	5901	0.0			
TRUCK TRAILERS	5902	0.0			
MOTOR VEHICLES AND PARTS	5903	0.0			
AIRCRAFT	6001	0.0			
AIRCRAFT ENGINES AND PARTS	6002	0.0			
AIRCRAFT EQUIPMENT, NEC	6004	0.0			
SHIPBUILDING AND REPAIRING	6101	0.0			
BOATBUILDING AND REPAIRING	6102	0.0			
RAILROAD AND STREET CARS	6104	0.0			
MOTORCYCLES, BICYCLES AND PARTS	6105	0.0			
TRAILER COACHES	6106	0.0			
TRANSPORTATION EQUIPMENT, NEC	6107	0.0			
ENGINEERING, SCIENTIFIC INSTRUMENTS	6201	0.0			
MECHANICAL MEASURING DEVICES	6202	0.0			
SURGICAL AND MEDICAL INSTRUMENTS	6204	0.0			
SURGICAL APPLIANCES AND SUPPLIES	6205	0.0			
WATCHES, CLOCKS AND PARTS	6207	0.0			
OPHTHALMIC GOODS	6302	0.0			
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	6303	0.0			
MUSICAL INSTRUMENTS AND PARTS	6402	0.0			
GAMES, TOYS, ETC	6403	0.0			
SPORTING AND ATHLETIC GOODS, NEC	6404	0.0			
PENS, PENCILS, ETC	6405	0.0			
ARTIFICIAL FLOWERS	6406	0.0			
BUTTONS, NEEDLES, PINS, FASTENERS	6407	0.0			
BROOMS AND BRUSHES	6408	0.0			
MORTICIANS GOODS	6410	0.0			
SIGNS AND ADVERTISING DISPLAYS	6411	0.0			
MISC MANUFACTURES, NEC	6412	0.0			
RAILROADS AND RELATED SERVICES	6501	0.0			
LOC, SUBURB, INTERURB HWY PASS TPTN	6502	0.0			
MOTOR FREIGHT TRANSPOR, WAREHOUSING	6503	0.0			

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
WATER TRANSPORTATION	6504	0.0			
AIR TRANSPORTATION	6505	0.0			
PIPE LINE TRANSPORTATION	6506	0.0			
TRANSPORTATION SERVICES	6507	0.0			
COMMUNICATIONS, EXCEPT RADIO AND TV	6600	0.0			
RADIO AND TV BROADCASTING	6700	0.0			
ELECTRIC UTILITIES	6801	0.0			
GAS UTILITIES	6802	0.0			
WATER AND SANITARY SERVICES	6803	0.0			
WHOLESALE TRADE	6901	0.0			
RETAIL TRADE	6902	0.0			
BANKING	7001	0.0			
CREDIT AGENCIES	7002	0.0			
SECURITY AND COMMODITY BROKERS	7003	0.0			
INSURANCE CARRIERS	7004	0.0			
INSURANCE AGENTS AND BROKERS	7005	0.0			
OWNER-OCCUPIED DWELLINGS	7101	0.0			
REAL ESTATE	7102	0.0			
HOTELS AND LODGING PLACES	7201	0.0			
PERS, REP SERV EX AUTO, BARB, BEAUT	7202	0.0			
BARBER AND BEAUTY SHOPS	7203	0.0			
MISC BUSINESS SERVICES	7301	0.0			
ADVERTISING	7302	0.0			
MISC PROFESSIONAL SERVICES	7303	0.0			
AUTOMOBILE REPAIR AND SERVICES	7500	0.0			
MOTION PICTURES	7601	0.0			
AMUSEMENT AND RECREATION SERVICES	7602	0.0			
DOCTORS AND DENTISTS	7701	0.0			
HOSPITALS	7702	0.0			
OTHER MEDICAL AND HEALTH SERVICES	7703	0.1			
EDUCATIONAL SERVICES	7704	0.0			
NONPROFIT ORGANIZATIONS	7705	0.0			
POST OFFICE	7801	0.0			
OTHER FEDERAL GOVERNMNT ENTERPRISES	7804	0.0			
STATE AND LOCAL ELECTRIC UTILITIES	7902	0.0			

INDUSTRY		---PERCENT OF TOTAL SALES IN GEORGIA--- STUDY ESTIMATE	YOUR ESTABLISHMENT	ALL GEORGIA PRODUCERS	COMMENTS
OTHER STATE, LOCAL GOV ENTERPRISES	7903	0.0			
BUSINESS TRAVEL, ENTERTAINMNT, GFTS	8100	0.0			
OFFICE SUPPLIES	8200	0.0			
SCRAP, USED AND SECONDHAND GOODS	8300	0.0			
TOTAL SALES OF INTERMEDIATE PRODUCTS TO OTHER GEORGIA PRODUCERS		47.4			

IV. SUMMARY OF PURCHASES AND PAYMENTS

PLEASE NOTE TWO THINGS ABOUT THIS SUMMARY PAGE.

FIRST, WE ARE INTERESTED IN WHERE YOUR PURCHASES ORIGINATE, NOT IN THE LOCATION OF THE AGENTS OR TRADESMEN THROUGH WHOM THE TRANSACTIONS WERE PLACED. THE FIRST TWO LINES BELOW DIVIDE YOUR PURCHASES INTO THOSE FROM GEORGIA AND THOSE FROM ELSEWHERE. YOU MIGHT WISH TO ROUGHLY ESTIMATE THE DIVISION NOW AND CHECK IT AFTER YOU HAVE GONE THROUGH SECTION V, WHERE PURCHASES ARE DETAILED BY INDUSTRY.

SECOND, WE ARE INTERESTED IN YOUR PAYMENTS TO OWNERS OF RESOURCES AND TO GOVERNMENTS, BUT NOT IN THE ABSOLUTE VALUES OF THESE PAYMENTS. PLEASE NOTE THAT THIS ENTIRE QUESTIONNAIRE-INTERVIEW IS IN PERCENTAGE OR RATIO FORM. WE ARE GATHERING INFORMATION WITH WHICH TO ESTIMATE TRANSACTIONS FOR THE ENTIRE INDUSTRY, NOT FOR YOUR PARTICULAR ESTABLISHMENT. WE HAVE NOT ASKED FOR YOUR TOTAL SALES OR EMPLOYMENT, AND HAVE NEITHER THE MEANS TO COMPUTE YOUR ABSOLUTE PAYMENTS NOR THE INTEREST IN DOING SO. IF YOUR COMPANY IS NOT PUBLICLY HELD, WE KNOW THAT YOU MAY BE SENSITIVE ABOUT DISCUSSING YOUR PROFITS AND TAXES. BUT EVEN ROUGH ESTIMATES OF INDUSTRY FIGURES WOULD BE USEFUL, SO WE WOULD APPRECIATE YOUR HELP.

PURCHASE OR PAYMENT	-PERCENT OF TOTAL INPUTS- STUDY ESTIMATE	YOUR ESTIMATE	COMMENTS
PURCHASES FROM OTHER GEORGIA INDUSTRIES	56.2	_____	_____
PURCHASES FROM INDUSTRIES OUTSIDE GEORGIA	26.5	_____	_____
TOTAL PURCHASES OF GOODS AND SERVICES	82.6	_____	_____
WAGES AND SALARIES	3.4	_____	_____
STATE TAXES	1.7	_____	_____
CITY AND COUNTY TAXES	0.8	_____	_____
FEDERAL TAXES	3.8	_____	_____
REMAINDER (DEPRECIATION, PROFITS, ETC.)	7.7	_____	_____
TOTAL PURCHASES AND PAYMENTS	100.0	100.0	

V. DETAILED PURCHASES OF GOODS AND SERVICES

THIS SECTION ESTIMATES TWO PURCHASE PATTERNS: PURCHASES FROM OTHER INDUSTRIES AND THE BROAD GEOGRAPHIC ORIGINS OF THESE PURCHASES.

PURCHASES FROM THE OTHER INDUSTRIES ARE IN PERCENT OF TOTAL PURCHASES AND PAYMENTS. PAYMENTS TO LABOR, OWNERS, AND GOVERNMENT ARE EXPRESSED AS "VALUE ADDED" ON THE LAST PAGE OF THE QUESTIONNAIRE.

THE SECOND SET OF ESTIMATES REFERS TO THE PERCENT OF EACH PURCHASE WHICH WAS MADE FROM A GEORGIA PRODUCER.

IN CORRECTING OUR ESTIMATES, YOU SHOULD FIRST EXAMINE THE ENTIRE COLUMN OF PURCHASES FOR ITEMS WHICH SEEM IN ERROR, MARKING THEM FOR MORE CAREFUL EXAMINATION. SINCE THE LIST CONTAINS 368 INDUSTRIES, THE REVIEW WILL BE USEFUL IN SPOTTING CATEGORIES AND IN PLACING PUZZLING PURCHASES.

PLEASE PAY PARTICULAR ATTENTION TO PURCHASES YOU DO MAKE BUT WHICH WE ESTIMATE AS ZERO, AND TO PURCHASES YOU DO NOT MAKE BUT WHICH WE ESTIMATE AS POSITIVE.

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
DAIRY FARM PRODUCTS	0101	0.0	_____	0.0	_____
POULTRY AND EGGS	0102	0.0	_____	0.0	_____
MEAT, ANIMALS, MISC LIVESTOCK PROD	0103	0.0	_____	0.0	_____
COTTON	0201	0.0	_____	0.0	_____
FOOD FEED GRAINS AND GRASS SEEDS	0202	19.3	_____	50.0	_____
TOBACCO	0203	0.0	_____	0.0	_____
FRUITS AND TREE NUTS	0204	0.0	_____	0.0	_____
VEGETABLES, SUGAR AND MISC CROPS	0205	0.3	_____	17.3	_____
OIL BEARING CROPS	0206	0.0	_____	0.0	_____
FOREST, GREENHOUSE AND NURSERY PROD	0207	0.0	_____	0.0	_____
FORESTRY AND FISHERY PRODUCTS	0300	0.1	_____	100.0	_____
AGRIC, FORESTRY AND FISHERY SERV	0400	0.0	_____	0.0	_____
IRON AND FERROALLOY ORES MINING	0500	0.0	_____	0.0	_____
NONFERROUS METAL ORES MINING EXC CU	0602	0.0	_____	0.0	_____
STONE AND CLAY MINING AND QUARRYING	0900	0.3	_____	100.0	_____
CHEMICAL, FERTILIZER MINERAL MINING	1000	0.1	_____	19.4	_____
NEW CONSTRUC, RESIDEN BLDG, NONFARM	1101	0.0	_____	0.0	_____
NEW CONSTRUC, NONRESIDENTIAL BLDGS	1102	0.0	_____	0.0	_____
NEW CONSTRUCTION, PUBLIC UTILITIES	1103	0.0	_____	0.0	_____
NEW CONSTRUCTION, HIGHWAYS	1104	0.0	_____	0.0	_____

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
NEW CONSTRUCTION, ALL OTHER	1105	0.0		0.0	
MAINT, REP CONSTRUC, RES BLDG, NFRM	1201	0.0		0.0	
MAINT, REPAIR CONSTRUC, ALL OTHER	1202	0.3		1.7	
AMMUNITION, EXCEPT SMALL ARMS, NEC	1302	0.0		0.0	
SIGHTING AND FIRE CONTROL EQUIPMENT	1304	0.0		0.0	
MEAT PRODUCTS	1401	0.3		79.7	
CHEESE, NATURAL AND PROCESSED	1403	0.0		0.0	
CONDENSED AND EVAPORATED MILK	1404	1.2		20.2	
ICE CREAM AND FROZEN DESSERTS	1405	0.0		0.0	
FLUID MILK	1406	0.0		0.0	
CANNED AND CURED SEA FOODS	1407	0.0		0.0	
CANNED SPECIALTIES	1408	0.0		0.0	
CANNED FRUITS AND VEGETABLES	1409	0.0		0.0	
DEHYDRATED FOOD PRODUCTS	1410	0.0		0.0	
PICKLES, SAUCES AND SALAD DRESSINGS	1411	0.0		0.0	
FRESH OR FROZEN PACKAGED FISH	1412	0.0		0.0	
FROZEN FRUITS AND VEGETABLES	1413	0.0		0.0	
FLOUR AND CEREAL PREPARATIONS	1414	6.3		51.4	
PREPARED FEEDS FOR ANIMALS, FOWLS	1415	15.5		100.0	
BAKERY PRODUCTS	1418	0.0		0.0	
SUGAR	1419	0.6		44.7	
CONFECTIONERY AND RELATED PRODUCTS	1420	0.0		0.0	
ALCOHOLIC BEVERAGES	1421	1.1		18.5	
BOTTLED AND CANNED SOFT DRINKS	1422	0.0		0.0	
FLAVORING EXTRACTS AND SIRUPS, NEC	1423	0.0		0.0	
COTTONSEED OIL MILLS	1424	1.4		86.2	
SOYBEAN OIL MILLS	1425	14.0		32.1	
VEGETABLE OIL MILLS, NEC	1426	0.0		0.0	
ANIMAL AND MARINE FATS AND OILS	1427	3.0		72.6	
ROASTED COFFEE	1428	0.0		0.0	
SHORTENING AND COOKING OILS	1429	0.1		100.0	
MANUFACTURED ICE	1430	0.0		0.0	
FOOD PREPARATIONS, NEC	1432	0.1		100.0	
CIGARETTES, CIGARS, ETC	1501	0.0		0.0	
TOBACCO STEMMING AND REDRYING	1502	0.0		0.0	

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
BROADWVN FABRIC MILLS, FAB FIN PLNT	1601	0.0		0.0	
NARROW FABRIC MILLS	1602	0.0		0.0	
YARN MILLS, FINISHING TEXTILES, NEC	1603	0.0		0.0	
THREAD MILLS	1604	0.0		0.0	
FLOOR COVERINGS	1701	0.0		0.0	
FELT GOODS, NEC	1702	0.0		0.0	
PADDINGS AND UPHOLSTERY FILLINGS	1704	0.0		0.0	
PROCESSED TEXTILE WASTE	1705	0.0		0.0	
TIRE CORD AND FABRIC	1707	0.0		0.0	
CORDAGE AND TWINE	1709	0.0		0.0	
TEXTILE GOODS, NEC	1710	0.0		0.0	
HOSIERY	1801	0.0		0.0	
KNIT APPAREL MILLS	1802	0.0		0.0	
KNIT FABRIC MILLS	1803	0.0		0.0	
APPAREL MADE FR PURCHASED MATERIALS	1804	0.0		0.0	
CURTAINS AND DRAPERIES	1901	0.0		0.0	
HOUSEFURNISHINGS, NEC	1902	0.0		0.0	
FABRICATED TEXTILE PRODUCTS, NEC	1903	1.3		100.0	
LOGGING CAMPS, LOGGING CONTRACTORS	2001	0.0		0.0	
SAWMILLS AND PLANING MILLS, GENERAL	2002	0.0		0.0	
HARDWOOD DIMENSION AND FLOORING	2003	0.0		0.0	
SPECIAL PRODUCT SAWMILLS, NEC	2004	0.0		0.0	
MILLWORK	2005	0.0		0.0	
VENEER AND PLYWOOD	2006	0.0		0.0	
PREFABRICATED WOOD STRUCTURES	2007	0.0		0.0	
WOOD PRESERVING	2008	0.0		0.0	
WOOD PRODUCTS, NEC	2009	0.0		0.0	
WOODEN CONTAINERS	2100	0.1		100.0	
WOOD HOUSEHOLD FURNITURE	2201	0.0		0.0	
UPHOLSTERED HOUSEHOLD FURNITURE	2202	0.0		0.0	
METAL HOUSEHOLD FURNITURE	2203	0.0		0.0	
MATTRESSES AND BEDSPRINGS	2204	0.0		0.0	
METAL OFFICE FURNITURE	2302	0.0		0.0	
PUBLIC BUILDING FURNITURE	2303	0.0		0.0	
WOOD PARTITIONS AND FIXTURES	2304	0.0		0.0	

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
METAL PARTITIONS AND FIXTURES	2305	0.0	_____	0.0	_____
VENETIAN BLINDS AND SHADES	2306	0.0	_____	0.0	_____
FURNITURE AND FIXTURES, NEC	2307	0.0	_____	0.0	_____
PULP MILLS	2401	0.0	_____	0.0	_____
PAPER MILLS, EXCEPT BUILDING PAPER	2402	0.0	_____	0.0	_____
PAPERBOARD MILLS	2403	0.0	_____	0.0	_____
ENVELOPES	2404	0.0	_____	0.0	_____
SANITARY PAPER PRODUCTS	2405	0.0	_____	0.0	_____
WALLPAPER, BLDG PAPER, BOARD MILLS	2406	0.0	_____	0.0	_____
CONV PAPER, PROD NEC EX CONTNR, BXS	2407	2.4	_____	74.9	_____
PAPERBOARD CONTAINERS AND BOXES	2500	0.3	_____	93.2	_____
NEWSPAPERS	2601	0.0	_____	0.0	_____
PERIODICALS	2602	0.0	_____	0.0	_____
BOOK PRINTING AND PUBLISHING	2603	0.0	_____	0.0	_____
MISC PUBLISHING	2604	0.0	_____	0.0	_____
COMMERCIAL PRINTING	2605	1.0	_____	100.0	_____
MANIFOLD BUS FRMS, BLNKBKS, BINDERS	2606	0.0	_____	0.0	_____
MISC PRINTING SERVICES	2608	0.0	_____	0.0	_____
INDUS INORGANIC, ORGANIC CHEMICALS	2701	1.3	_____	31.4	_____
FERTILIZERS	2702	0.0	_____	0.0	_____
AGRICULTURAL CHEMICALS, NEC	2703	0.0	_____	0.0	_____
MISC CHEMICAL PRODUCTS	2704	0.3	_____	100.0	_____
PLASTICS MATERIALS AND RESINS	2801	0.0	_____	0.0	_____
SYNTHETIC RUBBER	2802	0.0	_____	0.0	_____
CELLULOSIC MAN-MADE FIBERS	2803	0.0	_____	0.0	_____
ORGANIC FIBERS, NONCELLULOSIC	2804	0.0	_____	0.0	_____
DRUGS	2901	3.7	_____	51.2	_____
CLEANING PREPARATIONS	2902	0.0	_____	0.0	_____
TOILET PREPARATIONS	2903	0.0	_____	0.0	_____
PAINTS AND ALLIED PRODUCTS	3000	0.0	_____	0.0	_____
PETROLEUM REFINING, RELATED PROD	3101	0.3	_____	5.8	_____
PAVING MIXTURES AND BLOCKS	3102	0.0	_____	0.0	_____
ASPHALT FELTS AND COATINGS	3103	0.0	_____	0.0	_____
TIRES AND INNER TUBES	3201	0.0	_____	0.0	_____
RUBBER FOOTWEAR	3202	0.0	_____	0.0	_____

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
RECLAIMED RUBBER, MISC RUB PROD NEC	3203	0.0	_____	0.0	_____
MISC PLASTICS PRODUCTS	3204	0.0	_____	0.0	_____
LEATHER TANNING, INDUS LEATHER PROD	3300	0.0	_____	0.0	_____
FOOTWEAR EXCEPT RUBBER	3402	0.0	_____	0.0	_____
OTHER LEATHER PRODUCTS	3403	0.0	_____	0.0	_____
GLASS AND GLASS PROD EXC CONTAINERS	3501	0.0	_____	0.0	_____
GLASS CONTAINERS	3502	0.0	_____	0.0	_____
CEMENT, HYDRAULIC	3601	0.0	_____	0.0	_____
BRICK AND STRUCTURAL CLAY TILE	3602	0.0	_____	0.0	_____
CERAMIC WALL AND FLOOR TILE	3603	0.0	_____	0.0	_____
CLAY REFRACTORIES	3604	0.0	_____	0.0	_____
STRUCTURAL CLAY PRODUCTS, NEC	3605	0.0	_____	0.0	_____
VITREOUS PLUMBING FIXTURES	3606	0.0	_____	0.0	_____
PORCELAIN ELECTRICAL SUPPLIES	3608	0.0	_____	0.0	_____
POTTERY PRODUCTS, NEC	3609	0.0	_____	0.0	_____
CONCRETE BLOCK AND BRICK	3610	0.0	_____	0.0	_____
CONCRETE PRODUCTS, NEC	3611	0.0	_____	0.0	_____
READY-MIXED CONCRETE	3612	0.0	_____	0.0	_____
GYPSUM PRODUCTS	3614	0.0	_____	0.0	_____
CUT STONE AND STONE PRODUCTS	3615	0.0	_____	0.0	_____
ABRASIVE PRODUCTS	3616	0.0	_____	0.0	_____
GASKETS AND INSULATIONS	3618	0.0	_____	0.0	_____
MINERALS, GROUND OR TREATED	3619	0.0	_____	0.0	_____
MINERAL WOOL	3620	0.0	_____	0.0	_____
NONCLAY REFRACTORIES	3621	0.0	_____	0.0	_____
NONMETALLIC MINERAL PRODUCTS, NEC	3622	0.0	_____	0.0	_____
BLAST FURNACE AND BASIC STEEL PROD	3701	0.0	_____	0.0	_____
IRON AND STEEL FOUNDRIES	3702	0.0	_____	0.0	_____
IRON AND STEEL FORGINGS	3703	0.0	_____	0.0	_____
PRIMARY METAL PRODUCTS, NEC	3704	0.0	_____	0.0	_____
SECONDARY NONFERROUS METALS	3806	0.0	_____	0.0	_____
ALUMINUM ROLLING AND DRAWING	3808	0.0	_____	0.0	_____
NONFERROUS ROLLING AND DRAWING, NEC	3809	0.0	_____	0.0	_____
NONFERROUS WIRE DRAWING, INSULATING	3810	0.0	_____	0.0	_____
ALUMINUM CASTINGS	3811	0.0	_____	0.0	_____

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
BRASS, BRONZE, COPPER CASTINGS	3812	0.0		0.0	
NONFERROUS CASTINGS, NEC	3813	0.0		0.0	
METAL CANS	3901	1.5		100.0	
METAL BARRELS, DRUMS AND PAILS	3902	0.0		0.0	
METAL SANITARY WARE	4001	0.0		0.0	
PLUMBING FITTINGS AND BRASS GOODS	4002	0.0		0.0	
HEATING EQUIPMENT EXCEPT ELECTRIC	4003	0.0		0.0	
FABRICATED STRUCTURAL STEEL	4004	0.0		0.0	
METAL DOORS, SASH AND TRIM	4005	0.0		0.0	
FABRICATED PLATE WRK (BOILER SHOPS)	4006	0.0		0.0	
SHEET METAL WORK	4007	0.0		0.0	
ARCHITECTURAL METAL WORK	4008	0.0		0.0	
MISC METAL WORK	4009	0.0		0.0	
SCR MACH PROD, BLTS NUTS RVTS WSHRS	4101	0.0		0.0	
METAL STAMPINGS	4102	0.0		0.0	
HAND AND EDGE TOOLS INCLUDING SAWS	4202	0.1		27.6	
HARDWARE, NEC	4203	0.0		0.0	
COATING, ENGRAVING, ALLIED SERVICES	4204	0.0		0.0	
MISC FABRICATED WIRE PRODUCTS	4205	0.0		0.0	
PIPE, VALVES AND PIPE FITTINGS	4208	0.0		0.0	
FABRICATED METAL PRODUCTS, NEC	4211	0.0		0.0	
STEAM ENGINES AND TURBINES	4301	0.0		0.0	
FARM MACHINERY	4400	0.0		0.0	
CONSTRUCTION MACHINERY	4501	0.0		0.0	
ELEVATORS AND MOVING STAIRWAYS	4601	0.0		0.0	
CONVEYORS AND CONVEYING EQUIPMENT	4602	0.0		0.0	
INDUSTRIAL TRUCKS AND TRACTORS	4604	0.0		0.0	
MACHINE TOOLS, METAL CUTTING TYPES	4701	0.0		0.0	
MACHINE TOOLS, METAL FORMING TYPES	4702	0.0		0.0	
SPEC DIES, TOOLS, MACH TOOL ACCESS	4703	0.0		0.0	
METALWORKING MACHINERY, NEC	4704	0.0		0.0	
FOOD PRODUCTS MACHINERY	4801	0.1		100.0	
TEXTILE MACHINERY	4802	0.0		0.0	
WOODWORKING MACHINERY	4803	0.0		0.0	
PAPER INDUSTRIES MACHINERY	4804	0.0		0.0	

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
PRINTING TRADES MACHINERY	4805	0.0		0.0	
SPECIAL INDUSTRY MACHINERY, NEC	4806	0.0		0.0	
PUMPS AND COMPRESSORS	4901	0.0		0.0	
BLOWERS AND FANS	4903	0.0		0.0	
POWER TRANSMISSION EQUIPMENT	4905	0.0		0.0	
GENERAL INDUSTRIAL MACHINERY, NEC	4907	0.0		0.0	
MACHINE SHOP PRODUCTS	5000	0.0		0.0	
COMPUTING AND RELATED MACHINES	5101	0.0		0.0	
OFFICE MACHINES, NEC	5104	0.0		0.0	
AUTOMATIC MERCHANDISING MACHINES	5201	0.0		0.0	
COMMERCIAL LAUNDRY EQUIPMENT	5202	0.0		0.0	
REFRIGERATION MACHINERY	5203	0.0		0.0	
SERVICE INDUSTRY MACHINES, NEC	5205	0.0		0.0	
TRANSFORMERS	5302	0.0		0.0	
SWITCHGEAR, SWITCHBOARD APPARATUS	5303	0.0		0.0	
MOTORS AND GENERATORS	5304	0.0		0.0	
INDUSTRIAL CONTROLS	5305	0.0		0.0	
WELDING APPARATUS	5306	0.0		0.0	
ELECTRICAL INDUSTRIAL APPARATUS NEC	5308	0.0		0.0	
ELECTRIC HOUSEWARES AND FANS	5404	0.0		0.0	
HOUSEHOLD VACUUM CLEANERS	5405	0.0		0.0	
SEWING MACHINES	5406	0.0		0.0	
LIGHTING FIXTURES	5502	0.0		0.0	
WIRING DEVICES	5503	0.0		0.0	
RADIO AND TV RECEIVING SETS	5601	0.0		0.0	
TELEPHONE, TELEGRAPH APPARATUS	5603	0.0		0.0	
RADIO, TV COMMUNICATION EQUIPMENT	5604	0.0		0.0	
ELECTRON TUBES	5701	0.0		0.0	
ELECTRONIC COMPONENTS, NEC	5703	0.0		0.0	
STORAGE BATTERIES	5801	0.0		0.0	
X-RAY APPARATUS AND TUBES	5803	0.0		0.0	
ENGINE ELECTRICAL EQUIPMENT	5804	0.0		0.0	
ELECTRICAL EQUIPMENT, NEC	5805	0.0		0.0	
TRUCK AND BUS BODIES	5901	0.0		0.0	
TRUCK TRAILERS	5902	0.0		0.0	

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
MOTOR VEHICLES AND PARTS	5903	0.0	_____	0.0	_____
AIRCRAFT	6001	0.0	_____	0.0	_____
AIRCRAFT ENGINES AND PARTS	6002	0.0	_____	0.0	_____
AIRCRAFT EQUIPMENT, NEC	6004	0.0	_____	0.0	_____
SHIPBUILDING AND REPAIRING	6101	0.0	_____	0.0	_____
BOATBUILDING AND REPAIRING	6102	0.0	_____	0.0	_____
RAILROAD AND STREET CARS	6104	0.0	_____	0.0	_____
MOTORCYCLES, BICYCLES AND PARTS	6105	0.0	_____	0.0	_____
TRAILER COACHES	6106	0.0	_____	0.0	_____
TRANSPORTATION EQUIPMENT, NEC	6107	0.0	_____	0.0	_____
ENGINEERING, SCIENTIFIC INSTRUMENTS	6201	0.0	_____	0.0	_____
MECHANICAL MEASURING DEVICES	6202	0.0	_____	0.0	_____
SURGICAL AND MEDICAL INSTRUMENTS	6204	0.0	_____	0.0	_____
SURGICAL APPLIANCES AND SUPPLIES	6205	0.0	_____	0.0	_____
WATCHES, CLOCKS AND PARTS	6207	0.0	_____	0.0	_____
OPHTHALMIC GOODS	6302	0.0	_____	0.0	_____
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	6303	0.0	_____	0.0	_____
MUSICAL INSTRUMENTS AND PARTS	6402	0.0	_____	0.0	_____
GAMES, TOYS, ETC	6403	0.0	_____	0.0	_____
SPORTING AND ATHLETIC GOODS, NEC	6404	0.0	_____	0.0	_____
PENS, PENCILS, ETC	6405	0.0	_____	0.0	_____
ARTIFICIAL FLOWERS	6406	0.0	_____	0.0	_____
BUTTONS, NEEDLES, PINS, FASTENERS	6407	0.0	_____	0.0	_____
BROOMS AND BRUSHES	6408	0.0	_____	0.0	_____
MORTICIANS GOODS	6410	0.0	_____	0.0	_____
SIGNS AND ADVERTISING DISPLAYS	6411	0.0	_____	0.0	_____
MISC MANUFACTURES, NEC	6412	0.0	_____	0.0	_____
RAILROADS AND RELATED SERVICES	6501	0.0	_____	0.0	_____
LOC, SUBURB, INTERURB HWY PASS TPTN	6502	0.0	_____	0.0	_____
MOTOR FREIGHT TRANSPOR, WAREHOUSING	6503	0.0	_____	0.0	_____
WATER TRANSPORTATION	6504	0.0	_____	0.0	_____
AIR TRANSPORTATION	6505	0.0	_____	0.0	_____
PIPE LINE TRANSPORTATION	6506	0.0	_____	0.0	_____
TRANSPORTATION SERVICES	6507	0.0	_____	0.0	_____
COMMUNICATIONS, EXCEPT RADIO AND TV	6600	0.2	_____	100.0	_____

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
RADIO AND TV BROADCASTING	6700	0.0	_____	0.0	_____
ELECTRIC UTILITIES	6801	0.5	_____	100.0	_____
GAS UTILITIES	6802	0.2	_____	95.6	_____
WATER AND SANITARY SERVICES	6803	0.0	_____	0.0	_____
BANKING	7001	0.3	_____	100.0	_____
CREDIT AGENCIES	7002	0.0	_____	0.0	_____
SECURITY AND COMMODITY BROKERS	7003	0.1	_____	68.2	_____
INSURANCE CARRIERS	7004	0.2	_____	91.3	_____
INSURANCE AGENTS AND BROKERS	7005	0.0	_____	0.0	_____
OWNER-OCCUPIED DWELLINGS	7101	0.0	_____	0.0	_____
REAL ESTATE	7102	0.3	_____	84.3	_____
HOTELS AND LODGING PLACES	7201	0.0	_____	0.0	_____
PERS, REP SERV EX AUTO, BARB, BEAUT	7202	0.1	_____	79.8	_____
BARBER AND BEAUTY SHOPS	7203	0.0	_____	0.0	_____
MISC BUSINESS SERVICES	7301	0.3	_____	26.1	_____
ADVERTISING	7302	2.1	_____	85.4	_____
MISC PROFESSIONAL SERVICES	7303	0.1	_____	100.0	_____
AUTOMOBILE REPAIR AND SERVICES	7500	0.1	_____	97.0	_____
MOTION PICTURES	7601	0.0	_____	0.0	_____
AMUSEMENT AND RECREATION SERVICES	7602	0.0	_____	0.0	_____
DOCTORS AND DENTISTS	7701	0.0	_____	0.0	_____
HOSPITALS	7702	0.0	_____	0.0	_____
OTHER MEDICAL AND HEALTH SERVICES	7703	0.0	_____	0.0	_____
EDUCATIONAL SERVICES	7704	0.0	_____	0.0	_____
NONPROFIT ORGANIZATIONS	7705	0.0	_____	0.0	_____
POST OFFICE	7801	0.1	_____	100.0	_____
OTHER FEDERAL GOVERNMNT ENTERPRISES	7804	0.0	_____	0.0	_____
STATE AND LOCAL ELECTRIC UTILITIES	7902	0.0	_____	0.0	_____
OTHER STATE, LOCAL GOV ENTERPRISES	7903	0.0	_____	0.0	_____
BUSINESS TRAVEL, ENTERTAINMNT, GFTS	8100	0.6	_____	100.0	_____
OFFICE SUPPLIES	8200	0.1	_____	100.0	_____
SCRAP, USED AND SECONDHAND GOODS	8300	0.0	_____	0.0	_____

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
COPPER ORE MINING	0601	0.0	_____	0.0	_____
COAL MINING	0700	0.0	_____	0.0	_____
CRUDE PETROLEUM AND NATURAL GAS	0800	0.0	_____	0.0	_____
COMPLETE GUIDED MISSILES	1301	0.0	_____	0.0	_____
TANKS AND TANK COMPONENTS	1303	0.0	_____	0.0	_____
SMALL ARMS	1305	0.0	_____	0.0	_____
SMALL ARMS AMMUNITION	1306	0.0	_____	0.0	_____
OTHER ORDNANCE AND ACCESSORIES	1307	0.0	_____	0.0	_____
CREAMERY BUTTER	1402	0.0	_____	0.0	_____
RICE MILLING	1416	0.2	_____	0.0	_____
WET CORN MILLING	1417	1.4	_____	0.0	_____
MACARONI AND SPAGHETTI	1431	0.0	_____	0.0	_____
LACE GOODS	1703	0.0	_____	0.0	_____
COATED FABRICS, NOT RUBBERIZED	1706	0.0	_____	0.0	_____
SCOURING AND COMBING PLANTS	1708	0.0	_____	0.0	_____
WOOD OFFICE FURNITURE	2301	0.0	_____	0.0	_____
GREETING CARD PUBLISHING	2607	0.0	_____	0.0	_____
FOOTWEAR CUT STOCK	3401	0.0	_____	0.0	_____
FOOD UTENSILS, POTTERY	3607	0.0	_____	0.0	_____
LIME	3613	0.0	_____	0.0	_____
ASBESTOS PRODUCTS	3617	0.0	_____	0.0	_____
PRIMARY COPPER	3801	0.0	_____	0.0	_____
PRIMARY LEAD	3802	0.0	_____	0.0	_____
PRIMARY ZINC	3803	0.0	_____	0.0	_____
PRIMARY ALUMINUM	3804	0.0	_____	0.0	_____
PRIMARY NONFERROUS METALS, NEC	3805	0.0	_____	0.0	_____
COPPER ROLLING AND DRAWING	3807	0.0	_____	0.0	_____
NONFERROUS FORGINGS	3814	0.0	_____	0.0	_____
CUTLERY	4201	0.0	_____	0.0	_____
SAFES AND VAULTS	4206	0.0	_____	0.0	_____
STEEL SPRINGS	4207	0.0	_____	0.0	_____
COLLAPSIBLE TUBES	4209	0.0	_____	0.0	_____
METAL FOIL AND LEAF	4210	0.0	_____	0.0	_____
INTERNAL COMBUSTION ENGINES, NEC	4302	0.0	_____	0.0	_____

		--PERCENT OF TOTAL PURCHASES-- STUDY ESTIMATE	YOUR ESTIMATE	--PERCENT FROM GA. PRODUCER-- STUDY ESTIMATE	YOUR ESTIMATE
MINING MACHINERY	4502	0.0	_____	0.0	_____
OIL FIELD MACHINERY	4503	0.0	_____	0.0	_____
HOISTS, CRANES AND MONORAILS	4603	0.0	_____	0.0	_____
BALL AND ROLLER BEARINGS	4902	0.0	_____	0.0	_____
INDUSTRIAL PATTERNS	4904	0.0	_____	0.0	_____
INDUSTRIAL FURNACES AND OVENS	4906	0.0	_____	0.0	_____
TYPEWRITERS	5102	0.0	_____	0.0	_____
SCALES AND BALANCES	5103	0.0	_____	0.0	_____
MEASURING AND DISPENSING PUMPS	5204	0.0	_____	0.0	_____
ELECTRIC MEASURING INSTRUMENTS	5301	0.0	_____	0.0	_____
CARBON AND GRAPHITE PRODUCTS	5307	0.0	_____	0.0	_____
HOUSEHOLD COOKING EQUIPMENT	5401	0.0	_____	0.0	_____
HOUSEHOLD REFRIGERATORS, FREEZERS	5402	0.0	_____	0.0	_____
HOUSEHOLD LAUNDRY EQUIPMENT	5403	0.0	_____	0.0	_____
HOUSEHOLD APPLIANCES, NEC	5407	0.0	_____	0.0	_____
ELECTRIC LAMPS	5501	0.0	_____	0.0	_____
PHONOGRAPH RECORDS	5602	0.0	_____	0.0	_____
SEMICONDUCTORS	5702	0.0	_____	0.0	_____
PRIMARY BATTERIES, WET AND DRY	5802	0.0	_____	0.0	_____
AIRCRAFT PROPELLERS AND PARTS	6003	0.0	_____	0.0	_____
LOCOMOTIVES AND PARTS	6103	0.0	_____	0.0	_____
AUTOMATIC TEMPERATURE CONTROLS	6203	0.0	_____	0.0	_____
DENTAL EQUIPMENT AND SUPPLIES	6206	0.0	_____	0.0	_____
OPTICAL INSTRUMENTS AND LENSES	6301	0.0	_____	0.0	_____
JEWELRY, INCL COSTUME, SILVERWARE	6401	0.0	_____	0.0	_____
HARD SURFACE FLOOR COVERING	6409	0.0	_____	0.0	_____
FOOD AND DRINK	6903	0.0	_____	0.0	_____
FEDERAL ELECTRIC UTILITIES	7802	0.0	_____	0.0	_____
COMMODITY CREDIT CORPORATION	7803	0.0	_____	0.0	_____
LOCAL GOVERNMENT PASSENGER TRANSIT	7901	0.0	_____	0.0	_____
VALUE ADDED		17.4	_____		
TOTAL PURCHASES OF GOODS AND SERVICES		100.0	100.0	---	---

D

INCOME AND PRODUCT ACCOUNTS FOR GEORGIA, 1970

As noted in Chapter 2, a set of income and product accounts is a normal by-product of an interindustry study. This appendix reproduces the accounts underlying the estimates of gross state product presented in Chapter 2 without further explanation.

Personal or Household Account

RECEIPTS

Line	Sector making payment		Income	Transfers	Total
1	Local industries		11,882.6	61.0	11,943.6
2	Wage and salary disbursements	8,158.3			
3	Other labor income	552.0			
4	Proprietors' income	1,357.0			
5	Property income	1,637.7			
6	Business transfer payments	61.0			
7	Federal government enterprise	149.6			
8	State and local government enterprise	28.0			
9	Local households		99.7		99.7
10	Local governments		790.7	51.3	842.0
11	Wage and salary disbursements	771.2			
12	Retirement payments	14.8			
13	Direct relief payments	14.9			
14	Other transfer payments	21.6			
15	Interest paid to persons	19.5			
16	State government		372.7	190.7	563.4
17	Wage and salary disbursements	360.8			
18	Retirement payments	32.2			
19	Direct relief payments	149.1			
20	Other transfer payments	9.4			
21	Interest paid to persons	11.9			
22	Federal government, defense		671.0	209.0	880.0
23	Military pay	636.0			
24	Military reserve pay	35.0			
25	Veterans' benefits, retirement	209.0			
26	Federal government, other		689.3	848.0	1,537.3
27	Civilian pay	587.4			
28	Interest paid to persons	101.9			
29	Other transfer payments	848.0			
30	Total receipts from all sectors		14,506.0	1,360.0	15,866.0

PAYMENTS

Line	Sector receiving payment		Total
31	Industry, total purchases of goods and services		11,977.1
32	Local industry	8,199.3	
33	Nonlocal industry	3,777.8	
34	Households		99.7
35	Gross saving		871.6
36	Personal tax and nontax payments		2,917.6
37	Local governments	377.9	
38	State government	341.9	
39	Federal government	2,197.8	
40	Total payments to all sectors		15,866.0

Savings and Investment Account

RECEIPTS

making payment		Total	Line
industries		3,019.1	9
			10
households		871.6	11
saving:		-1,688.2	12
ocal governments	-112.4		
tate government	55.2		
ederal government	-533.5		
onlocal private units	-1,097.5		
		2,202.5	

PAYMENTS

Sector receiving payment		Total
Industry, total purchases of goods and services		2,202.5
Local industry	1,400.4	
Nonlocal industry	802.1	
Total		2,202.5

Local Government Account

RECEIPTS

making payment	Total	Line
industries	480.3	7
		8
households	377.9	9
government	445.9	10
l government	47.3	11
deficit	112.4	12
	1,463.8	13

PAYMENTS

Sector receiving payment		Total
Industry, total purchases of goods and services		599.7
Local industry	460.9	
Nonlocal industry	138.8	
Households (income)		790.7
Households (transfers)		51.3
State government		22.1
Total		1,463.8

State Government Account

RECEIPTS

Line	Sector making payment		Total
1	Local industries		858.8
2	Taxes	724.7	
3	Current charges and miscellaneous general revenue	55.7	
4	Trust earnings	40.7	
5	Unemployment contribution	37.8	
6	Local households		341.9
7	Taxes	216.6	
8	Current charges and miscellaneous general revenue	86.5	
9	Retirement contribution of local employees	38.7	
10	Local governments		22.1
11	Transfer payments	11.2	
12	Retirement contribution for covered employees	10.9	
13	Motor vehicle registration	*	
14	Federal government		408.8
15	Transfer payments	408.7	
16	Motor vehicle registration	*	
17	Gross saving		-55.2
18	Total receipts from all sectors		1,576.4

PAYMENTS

Line	Sector receiving payment		Total
19	Industry, total purchases of goods and services		548.1
20	Local industry	432.3	
21	Nonlocal industry	115.8	
22	Households (income)		372.7
23	Households (transfers)		190.7
24	Local governments (transfers)		445.9
25	Federal government		19.1
26	Total payments to all sectors		1,576.4

Federal Government Account

RECEIPTS

Line	Sector making payment	Total
1	Local industries	1,533.9
2	Local households	2,197.8
3	State government	19.1
4	External funds (deficit)	533.3
5	Total	4,284.3

PAYMENTS

Line	Sector receiving payment	Defense	Other	Total
6	Local industries	1,057.0	353.9	1,410.9
7	Household income	671.0	689.3	1,360.3
8	Household transfers	209.0	848.0	1,057.0
9	Local governments		47.3	47.3
10	State government		408.8	408.8
11	Total	1,937.0	2,347.3	4,284.3

Rest-of-World Account

RECEIPTS

r making payment	Total	Line
industries	8,159.2	7
households	3,777.8	8
		9
te investment	802.1	10
		11
governments	138.8	
		12
government	115.8	13
		14
	12,993.8	
		15

PAYMENTS

Sector receiving payment		Total
Rest-of-world industries		14,091.3
Net government deficit		590.7
Local governments (deficit)	112.4	
State government (surplus)	-55.2	
Federal government (deficit)	533.5	
Nonlocal private sector		-1,688.2
Net import surplus, Georgia	-1,097.6	
Balance	-590.7	
Total		12,993.8

Notes on Personal or Household Account:

Unless otherwise noted, the sources for estimates of household receipts are Robert B. Bertzfelder, "Regional and State Income Gains in 1970," Survey of Current Business (August 1971), 27-41, and the intermediate worksheets underlying the state income estimates reported by Bertzfelder. These worksheets were made available by Edwin J. Coleman, Chief, Economic Measurement Branch, Regional Economics Division, U. S. Department of Commerce.

Line 2: Reported nongovernment wage and salary disbursements less estimated disbursements by private households (line 9).

Line 3: Other labor income less military reserve pay.

Line 5: Reported property income less government interest.

Line 7: Wages and salaries paid by Federal government enterprises were estimated from ES-202 data at 150 million (post offive, 133.044 million, and other Federal enterprises, 16.573 million).

Line 8: Expenditures for current operations by locally operated public utilities in Georgia were 76.1 million (32.3 million for water supply systems and 43.8 million for other systems, Government Finances in 1969-70, 44). Assuming that expenditures for personal services were in proportion to national expenditures (.446 of current expenditures for water systems and .311 for electric utilities, Government Finances in 1969-70, 26), then expenditures by state and local government enterprises for personal services were approximately 28 million (14.406 million for water systems and 13.622 million for other systems).

Line 9: Wages received for personal services and private-household employment were reported at 294 million. Wage and salary disbursements by private households were assumed to be in proportion to receipts by the household industry in the 1963 national input-output table relative to value added in the personal services and household industries (OBE industries 72.02, 72.03, and 86.00); on this basis, wage payments by local households in Georgia were 99.692 million.

Line 11: The payroll of local governments is estimated at 799.240 million as that proportion of the calendar-year state and local government payroll (1,160 million) which was paid over the fiscal year by local governments (.669, Government Finances in 1969-70, 51). This payroll less that for local government enterprise (line 8) is 771 million.

Line 12: Total state and local retirement payments (47 million) less state retirement payments (32.23 million, State Government Finances in 1969-70, 37 (fiscal-year estimate)).

Line 13: Total direct relief payments by state and local governments (164 million) less cash assistance payments by state government (149.106 million, State Government Finance in 1969-70, 31 (fiscal-year estimate)).

Line 14: Other state and local transfer payments (31 million) less other state transfer payments as estimated on line 20.

Notes on Personal or Household Account (continued):

Line 15: Government interest paid to individuals in Georgia is estimated as follows:

a) Interest on general debt of the U.S. Government is assumed to be paid in the state in proportion to personal income (in 1970, personal income in Georgia was 1.921 percent of U.S. personal income) and to be paid to individuals in proportion to their holdings (in 1970, individuals held 37.8 percent of privately held U.S. government securities (Federal Reserve Bulletin (August 1971), A44)). This interest amounts to $102 million (0.378 x 0.019 x $14,037 million, Government Finances in 1969-70, 17).

b) Interest on general debt of state and local governments in Georgia is reported as $31.6 million for state government and $51.6 million for local governments (Government Finances in 1969-70, 35). We assume that local holdings of debt of other governments are balanced by holdings of Georgia public debt by outsiders. If individuals hold these securities in proportion to their national holdings, individuals in Georgia received $11.9 million from state government and $19.5 million from local governments.

c) These calculations and others are summarized as:

Payments in Georgia to:	--- Payments (in millions) by --- State government	Local governments	Federal government	Total
Individuals (.378)	11.9	19.5	101.9	133.3
Banks (.259)	8.2	13.4	69.9	91.5
Insurance companies (.031)	1.0	1.6	8.4	11.0
Others (.332)	10.5	17.1	89.6	117.2
Total	31.6	51.6	269.8	353.0

Line 17: Total state and local government payroll ($1,160 million) less local government payrolls ($799 million).

Line 18: See line 12.

Line 19: See line 13.

Line 20: State expenditures for assistance and subsidies ($158.507 million) less cash assistance payments for fiscal year ($149.106 million) (State Government Finances in 1969-70, 27, 31).

Line 21: See line 15.

Line 27: Total Federal civilian pay ($737 million) less wage and salary disbursements by Federal government enterprises ($150 million, line 7).

Line 28: See line 15.

Line 29: Total Federal transfer payments less veterans' benefits.

Notes on Personal or Household Account (continued):

Line 31: Computed from average personal consumption expenditures (PCE) for the Unites States and personal income estimates (PI) as follows:

$$\text{Ga. PCE} = \frac{\text{U.S. PCE + U.S. interest paid}}{\text{U.S. PI}} \times \text{Ga. PI} - \text{Household payments}$$

$$= ((615.8 + 16.9)/803.9) \times 15{,}345 - 100 = 11{,}977.089$$

(See Survey of Current Business (August, 1971), 11, and line 9 above.)

Lines 32, 33: Based on Georgia Interindustry Study.

Line 34: See line 9 above.

Line 35: Computed as a residual.

Line 37: See local government account, line 2.

Line 38: See state government account, line 6.

Line 39: Computed from average personal tax and nontax payments (PTx) for the U.S. as follows:

$$\text{Ga. PTX} = \frac{\text{U.S. PTx}}{\text{U.S. PI}} \times \frac{\text{(Ga. social insurance/Ga. PI)}}{\text{(U.S. social insurance/U.S. PI)}} + \text{Ga. S.S. contributions}$$

$$= 15{,}345 \times (92.2/803.6) \times (.03395/.03484) + 482.267 = 2{,}197.838$$

The social-insurance factor above is used to reflect the lower incomes in Georgia relative to the nation. The personal social-insurance contribution includes a residual to insure consistency with published total personal income for Georgia and is equal to personal contributions for social insurance (521 million) less employee contributions to state and local retirement systems (38.733 million, from state government account, line 9).

Notes on Saving and Investment Account:

Line 1: Based on Georgia Interindustry Study.

Line 2: See household account, line 35.

Line 4: See rest-of-world account, line 9, or local government account, line 5.

Line 5: See rest-of-world account, line 10, or state government account, line 17.

Line 6: See rest-of-world account, line 11, or federal government account, line 4.

Line 7: See rest-of-world account, line 13.

Line 9: Computed from data assembled for the Georgia Interindustry Study and from "Interindustry Transactions in New Structures and Equipment, 1963," (multilithed, U.S. Department of Commerce, Office of Business Economics, September 1971), called here the "capital-formation matrix." The capital-formation matrix (CF) shows purchases by the 80 two-digit OBE industries (columns) from the 102 producing industries and four categories of construction (rows). The producing industries correspond to those in the 367-industry OBE classification. This matrix is adjusted for price changes to 1970 (p_i) and multiplied by the ratio of industry gross outputs in Georgia in 1970 (GQ_j) to those in the U.S. in 1963 price-adjusted to 1970 (NQ_j) to yield estimates of purchases by Georgia industries of capital equipment and structures (GC_i). Their sum is gross private domestic investment in Georgia in 1970 (GC):

$$GC = \sum_{i}^{367} \sum_{j}^{80} P_i \cdot CF_{ij} \cdot GQ_j / NQ_j \ .$$

Line 10,11: Based on Georgia Interindustry Study.

Notes on Local Government Account:

Line 1: Tax receipts and charges and miscellaneous general revenue (as reported in Governmental Finances in 1969-70, 31) are divided into industry and personal payments using the allocations of state and local property taxes in 1967 estimated in Advisory Commission on Intergovernmental Relations, State-Local Finances and Suggested Legislation, 1971 Edition (Government Printing Office, 1970), 149. For governments in Georgia in 1970, these divisions are as follows:

Item	Amount (in millions)
Local industries, total	480.3
Property taxes	237.5
Public utilities	46.0
Business motor vehicle	24.1
All other business	143.6
Agricultural	23.8
Other taxes	32.0
Charges and miscellaneous general revenue	210.8
Local households, total	377.9
Property taxes	196.3
Residential	152.3
Vacant lots	7.4
Motor vehicles	36.6
Other taxes	23.9
Charges and miscellaneous general revenue	157.7

Other taxes and charges and miscellaneous general revenue are assumed to be paid by business in proportion to property taxes (less motor-vehicle taxes) paid by business (57.2 percent).

Line 2: See line 1.

Line 3, 4: Governmental Finances in 1969-70, 31.

Line 5: Total general revenue less direct general expenditures and less transfer to state (Governmental Finances in 1969-70, 31, 34).

Line 7: Calculated as a residual.

Lines 8, 9: Based on Georgia Interindustry Study.

Lines 10, 11: Personal income worksheets (see household account, line (10).

Line 12: Payments to state government include (in $ millions): transfers from local governments of 11.241, retirement contributions by local governments of 10.869 (see State Government Finances in 1970, 22, 25), and motor-vehicle registration fees of .007 (estimated by Motor Vehicle Unit, Georgia Department of Revenue).

Notes on State Government Account:

The major source of data for this account is U.S. Bureau of the Census, State Government Finances in 1970, Series GF70, No. 3 (Washington: U.S. Government Printing Office, 1971). Two problems should be noted. First, these estimates are on a fiscal-year basis. We have not adjusted them to a calendar-year base. And second, the estimates vary slightly from values reported in the Report of the State Auditor of Georgia, 1970. For consistency, we follow the Census publications in estimating all government accounts. The State Audit is used in estimating detail, but totals are based on State Government Finances.

Line 2: Estimates of taxes collected were derived from totals in State Government Finances. When the allocation to industry or household categories was in question, other sources were used: 1) property taxes were allocated as described in local government account, line 1; and 2) motor vehicle and title registration fees were allocated using figures obtained from the Georgia Department of Revenue. Since the totals reported in State Government Finances ($941,334,000) and State Audit ($947,945,000) differ, the allocations based on State Audit were adjusted to match the State Government Finances figure. In summary, taxes paid by industry in Georgia are classified in the Georgia Interindustry Study as follows:

Item		Total (in thousands)
Retail trade		336,167
General sales and gross receipts taxes	335,807	
Retail liquor licenses	360	
Wholesale trade		253,068
Selective sales taxes	253,002	
Wholesale liquor licenses	66	
Insurance taxes		21,905
Motor transportation		4,812
Distillers' taxes		23
Real estate transfer taxes		12
Taxes distributed among all industries		108,685
Corporate net income taxes	84,735	
Motor vehicle license tax	12,706	
Occupation and business licenses	6,350	
Other taxes	4,844	
Total		724,672

Line 3: Estimates of charges and miscellaneous general revenue were taken from State Government Finances. Current charges to agriculture, water terminals, and miscellaneous commercial activities were assigned to industry and charges for education and hospitals to households. Miscellaneous general revenue from sale of property, from interest earnings, and from royalties were assigned to industry. The remaining charges and miscellaneous general revenues were split in proportion to the totals assigned to industry and to households. In summary, current charges and miscellaneous general revenues collected from industries in Georgia are classified in the Georgia

Notes on State Government Account (continued):

Interindustry Study as follows:

Item	Total (in thousands)
Water transport	7,653
Banking (interest earnings)	37,296
Distributed	10,795
Total	55,744

Line 4: State Government Finances, 25.

Line 5: State Government Finances, 26.

Line 7: Taxes paid by households were estimated from State Government Finances in a manner similar to that described for line 2 above. In summary, these payments include:

Item	Total (in thousands)
Personal income taxes	184,943
Motor vehicle registration	19,767
Death and gift taxes	5,642
Other taxes and licenses	6,279
Total	216,631

Line 8: Current charges and miscellaneous general revenue collected from households were estimated from State Government Finances as noted in line 3 above. In summary, they include:

Item	Total (in thousands)
Education charges	70,786
Hospital charges	9,275
Fines	477
Miscellaneous charges and revenue	6,000
Total	86,538

Line 9: State Government Finances, 25.

Line 11: State Government Finances, 22.

Line 12: State Government Finances, 25.

Line 13: Motor vehicle registration fees paid by local governments were estimated at $7,000 from records of the Georgia Department of Revenue.

Line 15: State Government Finances, 21.

Notes on State Government Account (continued):

Line 16: Motor vehicle registration fees paid by the federal government were estimated at $24,000 from records of the Georgia Department of Revenue.

Line 17: Gross saving or surplus ($55,180,000) is computed as total revenue ($1,631,621,000) less total expenditures ($1,576,441,000). See State Government Finances, 19, 28.

Line 19: Computed as a residual.

Lines 20, 21: Based on the Georgia Interindustry Study.

Line 22: See household account, lines 17, 21.

Line 23: See household account, lines 18-21.

Line 24: Government Finances in 1969-70, 31.

Line 25: Total intergovernmental expenditures ($464,971,000) less transfers to local governments ($445,900,000). See line 24 and State Government Finances, 27.

Notes on Federal Government Account:

Line 1: Computed from estimates provided by the Georgia Department of Revenue.

Line 2: See household account, line 39.

Line 3: See state government account, line 25.

Line 4: Computed as the difference between total expenditures (4,284,305,000, from Federal Outlays in Georgia, 1970, 4) and total receipts in Georgia (3,750,800,000).

Line 6: Defense expenditures with Georgia industries are computed as the sum of prime contracts as reported in Office of Economic Opportunity, Federal Outlays in Georgia, 1970 (compiled for the Executive Office of the President, 1971), 1. Other expenditures with Georgia industries are computed as a residual.

Line 7: See household account, lines 22 and 26.

Line 8: See household account, lines 22 and 26.

Line 9: See local governments account, line 4.

Line 10: See state government account, line 14.

Notes on Rest-of-World Account:

Lines 1-6: Based on Georgia Interindustry Study. These receipts by the rest of the world summarize the imports row of the Georgia interindustry flows table.

Line 7: Based on Georgia Interindustry Study. This item is the value of gross exports by Georgia industries.

Line 9: See local governments account, line 5.

Line 10: See state government account, line 17.

Line 11: See federal government account, line 4.

Line 13: Computed as the difference between imports and exports by Georgia industries, this item is the "import surplus" of Georgia industries (a negative value) and the "export surplus" of industries in the rest of the world.

Line 14: A balancing entry computed as the negative sum of lines 9-11.

E

INDUSTRY DEFINITIONS AND LIST OF AVAILABLE MARKET ANALYSES

Appendix Table E.1a defines industries in the 50-industry Georgia Economic Model. "OBE No." refers to the industry codes presented in section A.4, while "SIC No." refers to the Standard Industrial Classification.

Market analyses are available for these 50 industries as well as for the manufacturing industries listed in Appendix Table E.2a.

Table E.1a Industries in the 50-Industry Georgia Economic Model, 1970

Industry title	Industry number (OBE)
LIVESTOCK & LIVESTOCK PROD. (SIC 013)	101 102 103
FIELD CROPS (SIC 011)	201 202 203 206
OTHER CROPS (SIC 012, 019)	204 205 207
FORESTRY, FISHING, AG. SERV. (SIC 07-9)	300 400
STONE & CLAY MINING (SIC 14 EXC 147)	900
OTHER MINING (SIC 10-3, 147)	500 601 602 700 800 1000
CONTRACT CONSTRUCTION (SIC 15-7)	1101 1102 1103 1104 1105 1201 1202
MEAT PRODUCTS (SIC 201)	1401
DAIRY PRODUCTS (SIC 202)	1402 1403 1404 1405 1406
CANNED & PRESERVED FOODS (SIC 203)	1407 1408 1409 1410 1411 1412 1413
GRAIN MILL PRODUCTS (SIC 204)	1414 1415 1416 1417
BEVERAGES (SIC 208)	1421 1422 1423
FOOD PRODUCTS, NEC (SIC 205-7, 209)	1418 1419 1420 1424 1425 1426 1427 1428 1429 1430 1431 1432
FABRIC MILLS (SIC 221-4, 2261-2)	1601 1602
YARN & THREAD MILLS (SIC 2269, 228)	1603 1604
FLOOR COVERINGS (SIC 227)	1701
MISC. TEXTILE GOODS (SIC 229)	1702 1703 1704 1705 1706 1707 1708 1709 1710
FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	1801 1802 1803 1804 1901 1902 1903
LUMBER & WOOD PRODUCTS (SIC 24)	2001 2002 2003 2004 2005 2006 2007 2008 2009 2100
FURNITURE & FIXTURES (SIC 25)	2201 2202 2203 2204 2301 2302 2303 2304 2305 2306 2307

Table E.1a Industries in the 50-Industry Georgia Economic Model, 1970 (continued)

Industry title	Industry number (OBE)
PULP & PAPER MILLS (SIC 261-3)	2401 2402 2403
PAPER PRODUCTS EXC CONTAINERS (SIC 264)	2404 2405 2406 2407
PAPERBOARD CONTAINERS & BOXES (SIC 265)	2500
PRINTING & PUBLISHING (SIC 27)	2601 2602 2603 2604 2605 2606 2607 2608
CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	2701 2702 2703 2704
PLASTICS, DRUGS & PAINTS (SIC 282-5)	2801 2802 2803 2804 2901 2902 2903 3000
PETROLEUM PRODUCTS (SIC 29)	3101 3102 3103
RUBBER & PLASTICS PRODUCTS (SIC 30)	3201 3202 3203 3204
LEATHER & LEATHER PRODUCTS (SIC 31)	3300 3401 3402 3403
STONE, CLAY & GLASS PRODUCTS (SIC 32)	3501 3502 3601 3602 3603 3604 3605 3606 3607 3608 3609 3610 3611 3612 3613 3614 3615 3616 3617 3618
PRIMARY IRON & STEEL (SIC 331-2; 3391,9)	3701 3702 3703 3704
NONFERROUS METAL MFG. (SIC 333-6, 3392)	3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814
FABRICATED METAL PRODUCTS (SIC 34)	3901 3902 4001 4002 4003 4004 4005 4006 4007 4008 4009 4101 4102 4201 4202 4203 4204 4205 4206 4207
MACHINERY, EXCEPT ELECTRICAL (SIC 35)	4301 4302 4400 4501 4502 4503 4601 4602 4603 4604 4701 4702 4703 4704 4801 4802 4803 4804 4805 4806

Table E.1a Industries in the 50-Industry Georgia Economic Model, 1970 (continued)

Industry title	Industry number (OBE)
ELEC. TRANSMISSION EQUIP. (SIC 361-2)	5301 5302 5303 5304 5305 5306 5307 5308
MISC. ELECTRICAL EQUIP. (SIC 363-9)	5401 5402 5403 5404 5405 5406 5407 5501 5502 5503 5601 5602 5603 5604 5701 5702 5703 5801 5802 5803
MOTOR VEHICLES & EQUIP. (SIC 371)	5901 5902 5903
AIRCRAFT & PARTS (SIC 372)	6001 6002 6003 6004
TRAILER COACHES (SIC 3791)	6106
OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	6101 6102 6103 6104 6105 6107
INSTRUMENTS (SIC 38)	6201 6202 6203 6204 6205 6206 6207 6301 6302 6303
MISC. MANUFACTURING (SIC 39, 19, 21)	6401 6402 6403 6404 6405 6406 6407 6408 6409 6410 6411 6412 1301 1302 1303 1304 1305 1306 1307 1501
TRANSPORTATION SERVICES (SIC 40-7)	6501 6502 6503 6504 6505 6506 6507
COMMUNICATIONS & UTILITIES (SIC 48-9)	6600 6700 6801 6802 6803
WHOLESALE & RETAIL TRADE SIC 50-9)	6901 6902
FINANCE, INS., REAL ESTATE (SIC 60-6)	7001 7002 7003 7004 7005 7101 7102
BUSINESS SERVICES (SIC 73, 81, 89)	7301 7302 7303
OTHER SERVICES (SIC 70-2, 75-80, 82-6)	7201 7202 7203 7500 7601 7602 7701 7702 7703 7704 7705
GOVERNMENT ENTERPRISES	7801 7802 7803 7804 7901 7902 7903
DUMMY INDUSTRIES (--)	8100 8200 8300

a Detailed Manufacturing Industries for which Market Analyses Are Available

stry title	Industry number (SIC)	Industry number (OBE)
CTS	2010	1401
UCTS	2020	1402 1403 1404 1405 1406
ITS AND VEGETABLES	2033	1409
ROZEN PACKAGED FISH	2036	1412
CEREAL PREPARATIONS	2041 2043 2045	1414
EEDS FOR ANIMALS, FOWLS	2042	1415
DUCTS	2050	1418
ARY & RELATED PRODUCTS	2060 2070	1419 1420
FLAVORING EXTRACTS & SYRUPS	2080	1421 1422 1423
	2091 2092 2093	1424 1425 1426
MARINE FATS AND OILS	2094	1427
RATIONS, NEC	2031 2032 2034 2035 2037 2094 2095 2096 2097 2098 2099	1407 1408 1410 1411 1413 1428 1429 1430 1431 1432 1427
ABRIC MILLS, FAB FIN PLANTS	2211 2221 2231 2261 2262	1601
RIC MILLS	2241	1602
, FINISHING TEXTILES, NEC	2269 2281 2282 2283	1603
LS	2284	1604

Table E.2a Detailed Manufacturing Industries for which Market Analyses are Available (continued)

Industry title	Industry number (SIC)	Industry number (OBE)
FLOOR COVERINGS	2270	1701
TIRE CORD AND FABRIC	2296	1707
CORDAGE AND TWINE	2298	1709
TEXTILE GOODS, NEC	2291 2292 2293 2294 2297 2299	1702 1703 1704 1705 1706 1710
HOSIERY, KNIT APPAREL & FABRIC MILLS	2251 2252 2253 2254 2256 2259	1801 1802 1803
APPAREL MADE FROM PURCHASED MATERIALS	2310 2320 2330 2340 2350 2360 2370 2380 3992	1804
CURTAINS, DRAPERIES & HOUSEFURNISHINGS	2391 2392	1901 1902
FABRICATED TEXTILE PRODUCTS, NEC	2393 2394 2395 2396 2397 2398 2399	1903
LOGGING CAMPS, LOGGING CONTRACTORS	2410	2001
SAWMILLS AND PLANING MILLS, GENERAL	2421	2002
SPECIAL PRODUCT SAWMILLS, NEC	2429	2004
VENEER, PLYWOOD & PREF. WOOD STRUCTURES	2432 2433	2006 2007
WOOD PRESERVING	2491	2008
WOOD PRODUCTS, NEC	2426 2431 2499	2003 2005 2009
WOODEN CONTAINERS	2440	2100
WOOD HOUSEHOLD FURNITURE	2511 2519	2201

a Detailed Manufacturing Industries for which Market Analyses are Available (continued)

stry title	Industry number (SIC)	Industry number (OBE)
ED HOUSEHOLD FURNITURE	2512	2202
SEHOLD FURNITURE	2514	2203
S AND BEDSPRINGS	2515	2204
ITIONS AND FIXTURES	2541	2304
BLINDS AND SHADES	2591	2306
AND FIXTURES, NEC	2521 2522 2542 2599	2301 2302 2305 2307
ER & PAPERBOARD MILLS	2611 2621 2631	2401 2402 2403
	2642	2404
PAPER PRODUCTS, NEC	2647 2644 2661 2641 2643 2645 2646 2649	2405 2406 2407
D CONTAINERS AND BOXES	2650	2500
S	2711	2601
LS	2721	2602
TING AND PUBLISHING	2730	2603
L PRINTING	2751 2752	2605
TTING & PUBLISHING	2741 2761 2782 2771 2753 2789 2790	2604 2606 2607 2608
GANIC, ORGANIC CHEMICALS	2810	2701

Table E.2a Detailed Manufacturing Industries for which Market Analyses are Available (continued)

Industry title	Industry number (SIC)	Industry number (OBE)
FERTILIZER & AGRICULTURAL CHEMICALS	2871 2872 2879 2861 2890	2702 2703 2704
PLASTICS AND SYNTHETIC MATERIALS	2820	2801 2802 2803 2804
DRUGS, CLEANING & TOILET PREPARATIONS	2830 2840	2901 2902 2903
PAINTS AND ALLIED PRODUCTS	2851	3000
PETROLEUM REFINING & RELATED PRODUCTS	2900	3101 3102 3103
RUBBER FOOTWEAR	3020	3202
OTHER RUBBER PRODUCTS	3010 3030 3069	3201 3203
MISC PLASTICS PRODUCTS	3079	3204
LEATHER TANNING, INDUS LEATHER PRODUCTS	3110 3120	3300
FOOTWEAR EXCEPT RUBBER	3130 3140	3401 3402
OTHER LEATHER PRODUCTS	3150 3160 3170 3199	3403
GLASS PRODUCTS	3210 3220 3230	3501 3502
BRICK AND STRUCTURAL CLAY TILE	3251	3602
CLAY REFRACTORIES	3255	3604
CONCRETE BLOCK, BRICK & OTHER PRODUCTS	3271	3610 3611
READY-MIXED CONCRETE	3273	3612
CUT STONE AND STONE PRODUCTS	3281	3615

. Detailed Manufacturing Industries for which Market Analyses are Available (continued)

try title	Industry number (SIC)	Industry number (OBE)
GROUND OR TREATED	3295	3619
AY PRODUCTS, NEC	3240 3253 3259 3260 3272 3274 3275 3291 3292 3293 3296 3297 3299	3601 3603 3605 3606 3608 3609 3614 3616 3617 3618 3620 3621 3622
ON & STEEL MANUFACTURING	3310 3320 3390	3701 3702 3703 3704
NFERROUS METALS MANUFACTURING	3330 3340 3350 3360	3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814
AINERS	3410 3490	3901 3902
TARY WARE & PLUMBING FITTINGS	3431 3432	4001 4002
STRUCTURAL STEEL	3441	4004
S, SASH AND TRIM	3442	4005
L WORK	3444	4007
OUS METAL WORK	3433 3443 3446 3449	4003 4006 4008 4009
INE PRODUCTS	3450 3461	4101 4102
ES AND PIPE FITTINGS	3494 3498	4208
METAL PRODUCTS, NEC	3420 3470 3480 3490 3510	4201 4202 4203 4204 4205 4207 4209 4210 4211 4301 4302
STRUCTION MACHINERY & EQUIPMENT	3520 3531 3532 3533	4400 4501 4502 4503

Table E.2a Detailed Manufacturing Industries for which Market Analyses are Available (continued)

Industry title	Industry number (SIC)	Industry number (OBE)
MATERIALS HANDLING MACHINERY & EQUIPMENT	3534 3535 3536 3537	4601 4602 4603 4604
METALWORKING MACHINERY & EQUIPMENT	3540	4701 4702 4703 4704
SPECIAL INDUSTRY MACHINERY & EQUIPMENT	3550	4801 4802 4803 4804 4805 4806
GENERAL INDUSTRIAL MACHINERY & EQUIPMENT	3560	4901 4902 4903 4904 4905 4906 4907
MACHINE SHOP PRODUCTS	3590	5000
OFFICE & COMPUTING MACHINES	3570	5101 5102 5103 5104
SERVICE INDUSTRY MACHINES	3580	5201 5202 5203 5204 5205
INDUSTRIAL ELECTRIC EQUIPMENT	3610 3620	5301 5302 5303 5304 5305 5306 5307 5308
HOUSEHOLD APPLIANCES	3630	5401 5402 5403 5404 5405 5406 5407
ELECTRIC LIGHTING & WIRING EQUIPMENT	3640	5501 5502 5503
OTHER COMMUNICATION EQUIPMENT	3662	5604
OTHER COMMUNICATION EQUIPMENT	3650 3661	5601 5602 5603
ELECTRONIC COMPONENTS & ACCESSORIES	3670	5701 5702 5703
MISCELLANEOUS ELECTRICAL MACHINERY	3690	5801 5802 5803 5804 5805
TRUCK AND BUS BODIES	3713	5901
OTHER MOTOR VEHICLES & EQUIPMENT	3715 3717	5902 5903

a Detailed Manufacturing Industries for which Market Analyses are Available (continued)

stry title	Industry number (SIC)	Industry number (OBE)
& PARTS	3720	6001 6002 6003 6004
ING, BOATBUILDING & REPAIR	3730	6101 6102
OACHES	3791	6106
ATION EQUIPMENT, NEC	3740 3750 3799	6103 6104 6105 6107
NSTRUMENTS, APPLIANCES & SUPPLIES	3840	6204 6205 6206
C & CONTROLLING INSTRUMENTS	3810 3820 3870	6201 6202 6203 6207
C & PHOTOGRAPHIC EQUIPMENT	3830 3851 3860	6301 6302 6303
YS, ETC	3941 3942 3943	6403
AND ATHLETIC GOODS, NEC	3949	6404
CILS, ETC	3950	6405
S GOODS	3988	6410
FACTURES, NEC	3910 3930 3950 3960 3980 3990 1900 2100	6401 6402 6406 6407 6408 6409 6411 6412 1301 1302 1303 1304 1305 1306 1307 1501 1502

F

PROJECTIONS OF EMPLOYMENT GROWTH IN GEORGIA: A SHIFT-SHARE ANALYSIS

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F.1 Introduction

The shift-share method of regional analysis is a useful technique for comparing an area's economic growth performance to that experienced by the entire Nation. This national basis of comparison eliminates the narrow view that often results from comparing the performance of a state or regional economy to some past period or to that of some closely linked geographical area. This appendix will discuss the methodology of the shift-share method as a technique for both analyzing past growth and for projecting future growth, and will demonstrate its application by briefly analyzing the recent and projected growth of the Georgia economy.

F.2 Shift-Share Technique

Although the technique of shift-share analysis had its earliest roots in the work of David Creamer in the 1940's, its

refinement resulted from the more recent work of Edgar S. Dunn, Jr. and Lowell D. Ashby.[1] Under Ashby's direction of the Regional Economics Division of the Bureau of Economic Analysis utilized the method and data from the census of population to analyze employment changes during the periods of 1940 to 1950 and 1950 to 1960 for each county in the United States.[2] The technique has also been used by many other researchers to analyze growth in various regions.[3]

The shift-share method's greatest virtue is its ability to place regional growth in a national perspective, eliminating the narrow view that often results from comparing the performance of a state or a regional economy to its own performance in some past period or to that of some closely linked geographical area. The technique divides growth into three components: National Growth, Industrial Mix, and Regional Share. Reference to Table F.2a will aid in understanding the significance of these components.[4]

F.2.1 National Growth Component

The National Growth component represents the growth that would have occurred in a particular industry if its employment had grown at the same rate as the average for all industries combined. For the 1959 to 1967 period it can be computed by multiplying the individual industry employment totals for 1959 by the national all-industry growth rate, 17.2 percent. For example, in Table F.2a the National Growth component for apparel manufacturing is 214,000. This figure represents the increase that would have occurred in the number of persons employed in

Table F.2a
EMPLOYMENT AND COMPONENTS OF EMPLOYMENT CHANGE
UNITED STATES
1950-1959 and 1959-1967

	EMPLOYMENT IN			COMPONENTS OF EMPLOYMENT CHANGE									
				1950 to 1959					1959 to 1967				
	1950	1959	1967	Tot Ch	Natl Growth	Ind Mix	Reg Share	% Ch	Tot Ch	Natl Growth	Ind Mix	Reg Share	% Ch
e	6796	4866	3685	-1930	790	-2720	0	-3.6%	-1181	836	-2017	0	-2.5%
	965	756	652	-209	112	-321	0	-2.7%	-104	130	-234	0	-1.3%
	3399	3634	4042	235	395	-160	0	.7%	408	624	-216	0	1.0%
FG.	7674	7359	7877	-315	891	-1206	0	-.5%	518	1265	-747	0	.6%
MFG.	7988	9647	11971	1659	930	729	0	2.1%	2324	1656	668	0	2.0%
	1928	1890	1909	-38	224	-262	0	-.2%	19	325	-306	0	.1%
	1260	952	967	-308	146	-454	0	-3.1%	15	164	-149	0	.1%
	1236	1243	1413	7	144	-137	0	.1%	170	214	-44	0	1.2%
d	898	741	684	-157	104	-261	0	-2.1%	-57	127	-184	0	-.7%
	393	404	475	11	46	-35	0	.3%	71	69	2	0	1.5%
	486	583	681	97	56	41	0	2.0%	98	100	-2	0	1.4%
p	825	955	1121	130	96	34	0	1.6%	166	164	2	0	1.5%
	641	817	1003	176	75	101	0	2.7%	186	140	46	0	1.9%
.	220	217	183	-3	26	-29	0	-.2%	-34	37	-71	0	-1.5%
.	309	378	518	69	36	33	0	2.3%	140	65	75	0	2.9%
	399	373	355	-26	46	-72	0	-.7%	-18	64	-82	0	-.4%
y	568	615	649	47	66	-19	0	.9%	34	106	-72	0	.5%
	1244	1193	1317	-51	145	-196	0	-.5%	124	205	-81	0	.9%
	1062	1325	1684	263	123	140	0	2.5%	359	228	131	0	2.2%
	1262	1503	2027	241	147	94	0	2.0%	524	258	266	0	2.8%
.	987	1388	1978	401	115	286	0	3.9%	590	238	352	0	3.3%
p	1261	1666	1977	405	147	258	0	3.1%	311	286	25	0	1.6%
c	683	763	907	80	79	1	0	1.2%	144	131	13	0	1.6%
	2844	2547	2599	-297	331	-628	0	-1.2%	52	437	-385	0	.2%
.	1285	1453	1618	168	149	19	0	1.4%	165	250	-85	0	1.0%
	10783	12059	13933	1276	1253	23	0	1.3%	1874	2071	-197	0	1.3%
	2019	2695	3275	676	235	441	0	3.3%	580	463	117	0	1.8%
	6978	9815	12762	2837	811	2026	0	3.9%	2947	1686	1261	0	2.4%
	2003	2308	2859	305	233	72	0	1.6%	551	396	155	0	2.0%
l	3722	5291	7803	1569	433	1136	0	4.0%	2512	909	1603	0	3.6%
	1026	1733	2108	707	119	588	0	6.0%	375	298	77	0	1.8%
	57482	64163	75184	6681	6682	0	0	1.2%	11021	11021	0	0	1.5%
				Net Relative Change =		0			Net Relative Change =		0		

apparel manufacturing in the United States between 1959 and 1967 if employment in this particular industry had increased at the national rate for all industries combined. It was computed by multiplying apparel manufacturing employment in 1959, 1,243,000, by the national all-industry growth rate, 17.2 percent.

F.2.2 Industrial Mix Component

Because structural changes such as demand patterns and technological innovation vary, employment in certain industries grows more rapidly than it does in others. These relative employment changes are indicated by the Industrial Mix component.[5] A negative value in this column indicates that employment in the industry grew at a slower rate than did employment for all industries combined. A positive value indicates that national employment in the industry grew at a faster rate than did employment for all industries combined. Using the apparel manufacturing industry once again as an example, the Industrial Mix component for the 1959 to 1967 period is computed as follows: First, an Industrial Mix percentage is derived by subtracting the national employment growth rate for all industry, 17.2 percent, from the 13.7 percent growth rate experienced by the apparel industry (computed by dividing the national change in apparel employment from 1959 to 1967, 170,000, by 1959 industry employment, 1,243,000). This Industrial Mix percentage, -3.5 percent, is then multiplied by the apparel manufacturing total in 1959 to determine the Industrial Mix component, -44,000. If employment in the apparel industry had grown at the national

average for all industries, 44,000 additional apparel jobs would have been available in 1967. The sum of the National Growth and Industrial Mix components for a region indicates the growth on decline in employment that would have taken place in the area if its industries had grown at the same rate as the national counterparts.

F.2.3 Regional Share Component

Just as the rate of employment growth in some industries is greater than or less than the national average rate for all industries combined, the rate of regional employment growth in a particular industry may be greater than or less than that experienced by the industry throughout the nation. For example, the data of Table F.2b show that if apparel manufacturing employment in Georgia had grown at the same rate during the 1959 to 1967 period as it did throughout the nation, then the State would have recorded an industry employment increase of only 6,311 during this period (the sum of a 7,926 National Growth component and a -1,615 Industrial Mix component). Since the data show that Georgia apparel manufacturing actually increased by 21,690, the State must have gained a larger Regional Share of a nationally slow growth industry. This fact is indicated by the positive Regional Share component, 15,379. On the other hand, a negative Regional Share means that industry employment in the region did not grow as rapidly as, or declined more rapidly than, employment in the nation as a whole. The sum of the three components of employment change--National Growth, Industrial Mix, and Regional Share--comprises the total Georgia employment change, 21,690, in

Table F.2b
EMPLOYMENT AND COMPONENTS OF EMPLOYMENT CHANGE
GEORGIA
1950-1959 and 1959-1967

	EMPLOYMENT IN			COMPONENTS OF EMPLOYMENT CHANGE									
				1950 to 1959					1959 to 1967				
	1950	1959	1967	Tot Ch	Natl Growth	Ind Mix	Reg Share	% Ch	Tot Ch	Natl Growth	Ind Mix	Reg Share	% Ch
Agriculture	237488	138932	86708	-98556	23114	-90559	-31111	-5.8%	-52224	23864	-57583	-18505	-5.7%
Mining	4152	6106	6516	1954	404	-1303	2853	4.4%	410	1049	-1889	1250	.8%
Con. Cons.	58607	73550	93288	14943	5704	-1652	10891	2.6%	19738	12633	-4376	11481	3.0%
Food Prod.	33845	44122	50894	10277	3294	-3961	10944	3.0%	6772	7579	-7135	6328	1.8%
Textiles	108469	100879	112571	-7590	10557	-37072	18925	-.8%	11692	17328	-15738	10102	1.4%
Apparel	30445	46144	67834	15699	2963	-2791	15527	4.7%	21690	7926	-1615	15379	4.9%
Lumb & Wood	50538	34268	29834	-16270	4919	-13755	-7434	-4.2%	-4434	5886	-8522	-1798	-1.7%
Furniture	7298	8373	9534	1075	710	-506	871	1.5%	1161	1438	33	-310	1.6%
Paper	11166	17327	23379	6161	1087	1142	3932	5.0%	6052	2976	-64	3140	3.8%
Print., Pub	8052	10907	14394	2855	784	599	1472	3.4%	3487	1873	22	1592	3.5%
Chemicals	8104	9455	12708	1351	789	1436	-874	1.7%	3253	1624	529	1100	3.8%
Pet. Refin.	556	882	825	326	54	-62	334	5.3%	-57	151	-290	82	-.8%
Rub.,Plas.	227	1096	4173	869	22	29	818	19.1%	3077	188	218	2671	18.2%
Leather	2444	3772	4652	1328	238	-397	1487	4.9%	880	648	-830	1062	2.7%
Stone,Clay	7568	10152	14203	2584	737	-110	1957	3.3%	4051	1744	-1183	3490	4.3%
Prim. Met	3192	4436	7067	1244	311	-442	1375	3.7%	2631	762	-301	2170	6.0%
Fab. Met.	3932	6363	17180	2431	383	591	1457	5.5%	10817	1093	631	9093	13.2%
Machinery	6703	8752	13938	2049	652	628	769	3.0%	5186	1503	1548	2135	6.0%
Elec. Mach	978	4243	8991	3265	95	302	2868	17.7%	4748	729	1075	2944	9.8%
Trans Equip	7407	27965	45331	20558	721	1658	18179	15.9%	17366	4803	417	12146	6.2%
Instr.,Misc	3324	5434	8258	2110	324	66	1720	5.6%	2824	933	92	1799	5.4%
Trans Serv.	44224	45887	56315	1663	4304	-8923	6282	.4%	10428	7882	-6945	9491	2.6%
Comm., P.U.	21673	25169	35115	3496	2109	724	663	1.7%	9946	4323	-1465	7088	4.3%
Trade	192310	238674	294496	46364	18717	4040	23607	2.4%	55822	40996	-3905	18731	2.7%
Fin,Ins,RE	26597	45286	64425	18689	2589	6317	9783	6.1%	19139	7779	1968	9392	4.5%
Services	183429	208612	255446	25183	17853	24383	-17053	1.4%	46834	35832	26804	-15802	2.6%
Fed Civ	45050	58251	79976	13201	4385	2475	6341	2.9%	21725	10006	3901	7818	4.0%
State&Loc	68151	105384	172950	37233	6633	22096	8504	5.0%	67566	18101	31932	17533	6.4%
Military	37670	65885	105139	28215	3666	22291	2258	6.4%	39254	11317	2940	24997	6.0%
TOTAL	1213599	1356306	1696140	142707	118118	-72756	97345	1.2%	339834	232966	-39731	146599	2.8%
				Net Relative Change =		24589			Net Relative Change =		106868		

the apparel manufacturing industry.

F.2.4 Net Relative Change

The sum of the Industrial Mix and Regional Share components for all industries represents the Net Relative Change in employment for a region compared to the entire nation. A positive Net Relative Change indicates the margin by which a region's employment growth exceeded the national growth rate for all industry. A negative figure indicates the number of additional jobs that would have been available if total employment in the region had grown at the national all-industry growth rate. Georgia enjoyed a positive net relative change of 106,868 during the 1959 to 1967 period, that is, the State's employment growth exceeded the national rate of growth by 106,868.

Table F.2c explains the significance of the various elements of change in the shift and share analysis.

F.3 Projection Methodology

The shift-share technique can also be used to project future employment growth.[6] The additional requirements are an internal or external projection of national employment growth and some assumption regarding the stability of the Regional Share component over time.

The Georgia 1980 industry employment projections in Table F.3a provide an illustration of the projection method. Rates of national employment change by industry were computed from national figures supplied by the Bureau of Labor Statistics of the United States Department of Labor. These rates of change

Table F.2c Significance of Elements of Change in Shift-Share Analysis

Element of Change	Significance
For Individual Industry:	
Industrial Mix Positive	Nationally, the industry grew more rapidly than did the average rate for all industries combined.
Industrial Mix Negative	Nationally, the industry grew less rapidly than did the average rate of all industries combined.
Regional Share Negative	The region's relative share of employment in the industry declined, i.e., the industry grew less rapidly (or declined more rapidly) in the region than in the nation as a whole.
Regional Share Positive	The region gained a larger relative share of employment in the industry, i.e., the industry grew more rapidly (or declined less rapidly) in the region than in the nation as a whole.
Industrial Mix Positive-- Regional Share Negative	The region's relative share of employment declined in an industry that grew more rapidly nationally than did the average rate for all-industry.
Industrial Mix Negative Regional Share Positive	The region gained a larger relative share of employment in an industry that is growing less rapidly than the average rate for all industry (or is even declining).
Industrial Mix Negative Regional Share Negative	The region's relative share of employment is declining in an industry that nationally is growing less rapidly than the average rate for all industry.
For Industrial Total:	
Relative Change Positive	Employment in the region grew more rapidly than it did in the nation as a whole.
Relative Change Negative	Employment in the region grew less rapidly than it did in the nation as a whole.

Table F.2c Significance of Elements of Change in Shift-Share Analysis (Continued)

Element of Change	Significance
Relative Change Positive-- Industrial Mix Positive Regional Share Positive	The region's rate of employment growth was greater than that of the nation because (1) the region had concentrated in industries that nationally were growing at a more rapid rate than that for all-industry combined, i.e., its industrial mix was favorable, and (2) the region also gained a larger relative share of employment in these industries.
Relative Change Positive-- Industrial Mix Positive Regional Share Negative	The region's rate of employment growth was greater than that of the nation because its favorable industrial mix was able to offset a declining relative share of total employment in its industries.
Relative Change Positive-- Industrial Mix Negative Regional Share Positive	The region's employment growth was greater than that of the nation because its unfavorable industrial mix was more than offset by an increasing relative share of total employment in its industries.
For Industry Total:	
Relative Change Negative-- Industrial Mix Negative Regional Share Positive	The region's rate of employment growth was less than that of the nation because its industrial mix was too unfavorable to be offset by an increasing relative share of total employment in its industries.
Relative Change Negative-- Industrial Mix Positive Regional Share Negative	The region's rate of employment growth was less than that of the nation because its industrial mix was favorable but was more than offset by a declining relative share of total employment in its industries.
Relative Share Negative-- Industrial Mix Negative Regional Share Negative	The region's rate of employment was less than that of the nation because its industrial mix was unfavorable and its share of total employment in its industries was declining.

Table F.3a
A SHIFT-SHARE PROJECTION OF EMPLOYMENT
GEORGIA
1980

		Projection 1967 to 1980 "A" Projection					"B" Projection			
	1967	Natl Growth	Ind Mix	Reg Share	Tot Change	1980	Annual % Ch	Reg Share	Tot Change	1980	Annual % Ch
Agriculture	86708	20982	-42464	-35236	-56718	29990	-7.9%	-26427	-47909	38799	-6.0%
Mining	6516	1577	-2266	2380	1691	8207	1.7%	1785	1096	7612	1.2%
Con. Cons.	93288	22574	10476	21861	54911	148199	3.6%	16396	49446	142734	3.3%
Food Prod.	50894	12315	-14102	12049	10262	61156	1.4%	9037	7250	58144	1.0%
Textiles	112571	27240	-37135	19235	9340	121911	.6%	14427	4532	117103	.3%
Apparel	67834	16414	-3933	29283	41764	109598	3.7%	21963	34444	102278	3.2%
Lumb & Wood	29834	7219	-7743	-3424	-3948	25886	-1.1%	-2568	-3092	26742	-.9%
Furniture	9534	2307	804	-590	2521	12055	1.8%	-443	2668	12202	1.9%
Paper	23379	5657	-1847	5979	9789	33168	2.7%	4484	8294	31673	2.3%
Print., Pub	14394	3483	-1069	3031	5445	19839	2.4%	2274	4688	19082	2.1%
Chemicals	12708	3075	-832	2095	4338	17046	2.2%	1571	3814	16522	2.0%
Pet. Refin.	825	200	-335	156	21	846	.1%	117	-18	807	-.2%
Rub.,Plas.	4173	1010	891	5086	6987	11160	7.8%	3814	5715	9888	6.8%
Leather	4652	1126	-1375	2022	1773	6425	2.5%	1517	1268	5920	1.8%
Stone,Clay	14203	3437	-23	6645	10059	24262	4.2%	4984	8398	22601	3.6%
Prim. Met	7067	1710	-1694	4132	4148	11215	3.6%	3099	3115	10182	2.8%
Fab. Met.	17180	4157	-2402	17314	19069	36249	5.9%	12986	14741	31921	4.8%
Machinery	13938	3373	-210	4065	7228	21166	3.2%	3049	6212	20150	2.8%
Elec. Mach	8991	2176	-548	5606	7234	16225	4.6%	4204	5832	14823	3.9%
Trans Equip	45331	10969	-10006	23127	24090	69421	3.3%	17346	18309	63640	2.6%
Instr.,Misc	8258	1998	-605	3426	4819	13077	3.5%	2569	3962	12220	3.0%
Trans Serv.	56315	13627	-17896	18072	13803	70118	1.7%	13554	9285	65600	1.1%
Comm., P.U.	35115	8497	-4091	13496	17902	53017	3.2%	10122	14528	49643	2.6%
Trade	294496	71262	3752	35666	110680	405176	2.4%	26750	101764	396260	2.3%
Fin,Ins,RE	64425	15590	2764	17883	36237	100662	3.4%	13413	31767	96192	3.1%
Services	255446	61813	60666	-30089	92390	347836	2.4%	-22567	99912	355358	2.5%
Fed Civ&Mil	185115	44794	-18743	62484	88535	273650	3.0%	46863	72914	258029	2.5%
State&Loc	172950	41850	50775	33385	126010	298960	4.2%	25039	117664	290614	4.0%
TOTAL	1696140	410432	-39191	279142	650380	2346520	2.5%	209356	580599	2276739	2.2%
				Relative Change=	239951			Relative Change=	170165		

were then applied to the 1967 employment estimates to arrive at the national projections of 1980 employment by industry. From these estimates it was then possible to compute the National Growth and Industrial Mix components of Georgia employment growth to 1980.

The final growth component, Regional Share, is the critical element in a regional projection, and is the one most subject to error. For example, it has been previously noted that Georgia's relatively rapid rate of employment growth in the Apparel Manufacturing industry between 1950 and 1967 occurred because the State was able to attract a greater proportionate share of a nationally slow growth industry. An important factor in this favorable competitive growth was the availability in Georgia of a large supply of labor willing to work for relatively low wages. Since most of this surplus labor pool has now been absorbed, it appears doubtful that the State can continue to attract Apparel employment at the same relative rate in the future. Conversely, the development of a more highly skilled labor force or changes in other factors could possibly increase Georgia's competitive position in other industries.

Two projections for the Georgia economy are presented in F.3a, each utilizing a different assumption regarding the Regional Share component. In making projection "A" it was assumed that the Regional Share during the 1967 to 1980 period would be the same as during the 1959 to 1967 period when adjusted for a different national employment base and longer time period. The "B" projection assumes that the Regional Share will not be

quite so important in the future, that is, that Georgia will be less competitive in attracting new employment, and that this growth component will fall to seventy-five percent of the 1959 to 1967 level when adjusted for the differing national base and time period.[7]

Two observations are appropriate regarding regional employment projections. First, the probability of error is inversely related to the size of the region. To make national projections one must analyze a few growth factors including changes in demand and technology. It is much more difficult to accurately project employment change at the state and the sub-state level because the spatial distribution of the employment change among many competitive areas must be estimated.

When either making or using projections one should remember that they are not predictions -- they are extensions of existing or assumed trends. In other words, the projections of 1980 Georgia industry employment presented in Table F.3a are not predictions of what definitely will occur in the future. Rather, they are an attempt to show what will happen to the State's employment structure during the period if certain regional trends continue, and assuming certain levels of national employment growth. Changes in either the assumptions in government economic policies or in other factors would result, of course, in different levels of projected employment growth. The purpose of such projections is to give reasonable estimates of future employment change to provide a solid basis for rational economic policy decisions.

F.4 An Application of Shift-Share Analysis: Georgia Employment Growth 1950-1980

The shift-share analysis highlights several characteristics of recent Georgia growth. First, like most of the states of the Southeast, Georgia's employment expansion has exceeded the national growth rate. Further reference to the data of Table F.2b shows that if the number of jobs in the State had increased at the national average annual compound rate between 1959 and 1967 (2.0 percent) instead of the actual 2.8 percent annual rate, Georgia employment would have been 106,868 smaller in 1967 (indicated by the 106,868 Net Relative Change). For the previous nine-year period, the State's Net Relative Change was only 24,589.

This relatively rapid employment growth since 1950 has been a product of Georgia's strong competitive position in attracting a greater proportionate share of new employment (indicated by the 146,599 Regional Share component for 1959-1967 and 97,345 for 1950-1959). The State's industry mix was quite unfavorable in regards to employment growth (indicated by the -72,756 Industrial Mix component for 1950-1959 and -39,731 for 1959-1967). If employment in each Georgia industry had grown at the same rate as its national counterpart, the total employment growth rate would have fallen well below the national rate in both periods. This can be attributed to relatively large concentrations in industries such as Agriculture, Forestry, and Fisheries, and Kindred Food Products, Textile Mill Products, and Lumber and Wood Products in which national employment was declining or growing very slowly.

The employment projections contained in Table F.3a indicate a continuing favorable employment growth trend for the Georgia economy to 1980. Georgia's projected employment growth rate is 2.0 percent annually ("B" projection), compared to the 1.6 percent national rate, resulting in a Net Relative Change of 170, 165. This will partially be a result of the diminished relative importance of the agricultural sector, one in which employment will continue to decline.

This very brief analysis of Georgia employment growth has raised many more questions than it has answered. For example, why was Georgia able to capture a greater proportionate share of national employment growth between 1950 and 1967? Will this favorable trend carry forward to 1980? Will its effect be stronger or weaker in this future period? Was the rapid Apparel Manufacturing industry growth in Georgia only a temporary phenomenom resulting from the excess labor supply released from Agriculture?

Use of shift-share analysis alone is not sufficient to answer questions such as these, for their complete analysis requires much deeper probing into the factors determining industrial location and regional growth. Shift-share is no more capable of furnishing simple answers to complex problems than any other technique, but it is a valuable aid in evaluating regional data to identify basic relationships and to direct further analysis in fruitful directions.

References

[1]David Creamer, "Shifts of Manufacturing Industries," Chapter 4 of Industrial Location and National Resources (Washington, D. C.: U. S. Government Printing Office, 1943), pp. 85-104; Edgar S. Dunn, Jr., "A Statistical and Analytical Technique for Regional Analysis," Papers and Proceedings of the Regional Science Association Vol. VI, 1960, pp. 97-112; Edgar S. Dunn, Jr., Recent Southern Economic Development, University of Florida Monograph No. 14, Spring, 1962; and Lowell D. Ashby, "The Geographical Redistribution of Employment: An Examination of the Elements of Change," Survey of Current Business, Vol. 44, No. 10, October, 1964, pp. 13-20.

[2]Lowell D. Ashby, Growth Patterns in Employment by County, 1940-1950 and 1950-1960, U. S. Department of Commerce, Office of Business Economics (Washington, D. C.: U. S. Government Printing Office, 1965).

[3]For example, see: Federal Reserve Bank of Boston, "Manufacturing Employment Changes in New England--1947-1967," Business Review, (October 1967), pp. 8-11; Charles F. Floyd, The Changing Structure of Employment and Income in the Title V Regions, Economic Development Administration, 1971; M. A. Garrett, Jr., "Growth of Manufacturing in the South, 1947-1958: A Study in Regional Industry Development," Southern Economic Journal, 33 (1968), pp. 352-364; and H. S. Perloff, E. S. Dunn, Jr., E. E. Lampard, and R. F. Muth, Regions, Resources, and Economice Growth, (Baltimore: Johns Hopkins Press, 1960). Several recent British examples are: A. J. Brown, "Regional Problems and Regional Policy," National Institute Economics Review, (November, 1968), pp. 42-51; F. J. B. Stilwell, "Regional Growth and Structural Adaptation," Urban Studies, (June 1969), pp. 162-178; and A. P. Thirlwall, "A Measure of the Proper Distribution of Industry," Oxford Economic Papers, (March 1967), pp. 46-58.

[4]Mathematically, the analysis can be represented as follows:

Let: E_i^1 = Regional employment in industry i in base period 1

E_i^2 = Regional employment in industry i in period 2

r_{oo} = United States all-industry employment growth rate between period 1 and period 2

r_{io} = United States individual industry growth rate between period 1 and period 2

r_{ij} = Regional individual industry growth rate between period 1 and period 2

NG = National Growth component of regional growth

IM = Industrial Mix component of regional growth

RS = Regional Share component of regional growth

TC = Total Change in regional employment between period 1 and period 2

Then:

$$NG = \sum_{i=1}^{n} [\, r_{oo} \, (E_i^1) \,]$$

$$IM = \sum_{i=1}^{n} [\, E_i^1 \, (r_{io} - r_{oo})]$$

$$RS = \sum_{i=1}^{n} [\, (r_{ij} - r_{io}) \, E_i^1 \,] = TC - (NG - IM)$$

$$TC = \sum_{i-1}^{n} (E_i^2 - E_i^1) = NG + IM + RS$$

[5]It is often said that economists would rather use each other's toothbrushes than their terminology. Shift-share analysis provides an excellent example of this maxim. In the literature the Industrial Mix component is variously known as the Structural Component, Proportionality Shift and Composition Effect. The Regional Share component is also known as Differiential Growth, Growth Component, and Competitive Effect.

[6]An exposition of the technique appears in L. D. Ashby, "Regional Projections in a National Setting," Regional Economics Division, U. S. Department of Commerce, No. 66143. (Unpublished.)

[7]Mathematically the projection technique can be represented as follows:

Let: E_i^2 = Regional employment in industry i at the end of the historical period.

E_i^3 = Projected employment in industry i at the end of the projection period.

p_{oo} = National projected growth rate for all industries combined during the projection period.

p_{io} = National projected growth rate for industry i during the projection period.

NG' = Projected National Growth component.

IM' = Projected Industrial Mix component.

RS' = Projected Regional Share component.

TC' = Projected Total Change in employment.

RS_i = Regional Share component for industry i in previous period.

Then:

$$NG' = \sum_{i=1}^{n} (p_{oo} E_i^2)$$

$$IM' = \sum_{i=1}^{n} [(p_{io} - p_{oo}) E_i^2]$$

$$RS' = \sum_{i=1}^{n} (RS_i \text{ X } k) \text{ where:}$$

RS_i is the Regional Share component in the previous period and k is a scalar equal to:

$$\left(\frac{\text{U. S. employment base in period 2}}{\text{U. S. employment base in period 1}}\right)\left(\frac{t_3 - t_2}{t_2 - t_3}\right).$$

In the present example:

$$k = \left(\frac{75,184,000}{64,163,000}\right) \text{ X } \left(\frac{13}{8}\right) = 1.904.$$

The resulting RS_i' must be considered a first approximation because a continuation of the past Regional Share trend can lead to very low or even negative industry employment projections. Since negative employment values are implausible, some adjustment must be made, either through the use of an algorithm as suggested by Ashby, or judgmentally as was done in the accompanying example.

When the projected Regional Share component has been determined, then:

$$TC_i' = NG_i' + IM_i' + RS_i' \text{ , and}$$

$$E_i^3 = E_i^2 + NG_i' + IM_i' + RS_i' .$$

[8]The employment series utilized in this paper was developed by the author in cooperation with the Regional Economics Division of the Office of Business Economics, U. S. Department of Commerce. The data are consistent in methodology and definition with the state county personal income estimates made by OBE, and the series makes use of the same basic data sources. For a description of the employment estimation methodology see Charles F. Floyd, The Changing Structure of Employment and Income in the Ozarks Region, prepared for the Office of Economic Research, Economic Development Administration, U. S. Department of Commerce, 1971, pp. 67-81.

G

MATRIX TABLES: THE GEORGIA ECONOMIC MODEL

The following tables are presented without explanation. They represent a 50-industry aggregation of the Georgia Economic Model and should be interpreted as outlined in chapters one and four with reference to a five-industry aggregation. This detailed model is the empirical base for the analysis presented in the text.

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN GEORGIA , 1970
(MILLIONS OF DOLLARS)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)									
		1	2	3	4	5	6	7	8	9	10
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	37.3	17.3	4.1	19.3	0.0	0.0	0.0	372.9	73.2	0.0
2	FIELD CROPS (SIC 011)	40.3	6.1	0.0	9.5	0.0	0.0	0.1	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.2	0.0	3.4	8.2	0.0	0.0	5.3	0.0	0.0	8.3
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	26.8	14.2	5.1	6.5	0.0	0.0	0.1	0.0	0.0	16.4
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.1	1.2	0.3	0.0	2.1	0.1	25.5	0.0	0.0	0.0
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	5.3	5.2	1.8	0.0	1.5	0.1	0.9	0.5	0.4	0.5
8	MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.1	0.6	3.4
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.6	0.4
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.1	1.8
11	GRAIN MILL PRODUCTS (SIC 204)	97.2	0.0	0.0	2.1	0.0	0.0	0.0	0.8	0.0	0.3
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	4.4
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	3.8	0.0	0.0	2.6	0.0	0.0	0.1	4.0	0.7	6.7
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
17	MISC. TEXTILE GOODS (SIC 229)	0.1	0.0	0.0	2.1	0.0	0.0	0.2	0.0	0.0	0.0
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.2	0.1	0.2	0.0	0.0	0.0	0.5	0.2	0.2	0.0
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0	0.0	0.9	0.5	0.0	0.0	80.1	0.2	0.1	0.1
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0
21	PULP & PAPER MILLS (SIC 261-3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.1	0.0	0.0	0.0	0.0	0.0	6.7	0.1	0.1	0.3
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0	0.0	0.1	2.7	0.0	0.0	0.1	1.4	2.7	2.3
24	PRINTING & PUBLISHING (SIC 27)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.5
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.3	9.4	2.9	0.1	0.7	0.2	2.3	0.1	0.0	0.1
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.1	0.0	0.0	0.1	0.0	0.0	10.2	0.0	0.0	0.1
27	PETROLEUM PRODUCTS (SIC 29)	0.0	0.0	0.0	0.0	0.3	0.0	16.4	0.0	0.0	0.0
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.1	0.2	0.3	0.0	2.3	0.0	10.2	1.9	0.1	0.3
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.1	0.2	0.1	0.0	3.7	0.0	145.7	0.0	0.5	5.6
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.0	0.0	0.4	0.0	6.0	0.0	0.0	0.0
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0	0.0	0.0	0.0	0.1	0.0	3.7	0.0	0.0	0.0
33	FABRICATED METAL PRODUCTS (SIC 34)	0.4	0.1	0.0	2.5	0.1	0.0	99.5	3.3	0.2	11.2
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.1	1.1	0.2	0.0	1.6	0.2	8.1	0.1	0.1	0.1
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0	0.1	0.0	0.0	0.1	0.0	12.0	0.0	0.0	0.0
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
41	INSTRUMENTS (SIC 38)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
43	TRANSPORTATION SERVICES (SIC 40-7)	6.9	1.3	0.8	1.2	1.2	0.1	41.5	7.1	0.3	5.0
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	3.3	2.4	1.5	0.1	6.7	0.4	14.7	1.8	1.7	1.5
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	24.5	8.9	5.7	6.3	6.8	0.2	224.2	8.4	3.4	13.4
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	7.2	23.3	2.5	2.6	7.1	0.5	25.6	1.5	2.3	1.5
47	BUSINESS SERVICES (SIC 73, 81, 89)	2.6	9.1	2.9	0.0	2.8	0.1	110.1	2.2	2.2	5.6
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	4.0	2.1	1.2	0.5	2.5	0.0	13.9	1.4	2.0	0.5
49	GOVERNMENT ENTERPRISES	0.1	0.1	0.0	0.1	0.4	0.0	2.1	0.3	0.3	0.2
50	UNALLOCATED INDUSTRIES	0.3	0.2	0.2	1.9	1.4	0.1	13.0	0.8	0.6	0.6
51	TOTAL LOCAL PURCHASES	261.4	103.0	34.5	68.9	42.0	2.7	890.8	426.9	108.9	91.1
52	HOUSEHOLDS	227.0	195.0	66.0	51.0	52.7	3.3	665.0	107.4	36.1	28.0
53	GROSS SAVINGS	81.6	52.8	7.7	26.4	33.5	2.1	103.7	17.4	5.1	5.1
54	CITY & COUNTY GOVERNMENT	10.9	26.2	7.9	0.4	1.7	0.1	25.8	1.9	0.7	0.8
55	STATE GOVERNMENT	0.0	0.0	0.0	0.0	0.6	0.0	9.3	1.8	0.5	0.4
56	FEDERAL GOVERNMENT	0.0	0.0	0.0	0.0	8.4	0.5	101.8	17.3	2.5	2.3
57	IMPORTS	177.9	49.9	18.1	30.3	45.9	3.1	723.2	126.5	23.7	64.9
58	TOTAL PURCHASES AND PAYMENTS	758.8	426.9	134.2	177.2	184.8	11.8	2519.6	699.3	177.4	192.5

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN GEORGIA , 1970
(MILLIONS OF DOLLARS)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)									
		11	12	13	14	15	16	17	18	19	20
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	1.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0
2	FIELD CROPS (SIC 011)	14.0	0.0	7.7	0.0	0.0	0.0	8.2	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.2	1.7	2.7	0.0	0.0	0.0	0.1	0.0	7.3	0.0
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3.2	22.2	0.0
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.7	1.2	1.5	1.3	3.1	5.2	1.1	1.1	1.8	0.3
8	MEAT PRODUCTS (SIC 201)	1.2	0.0	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	DAIRY PRODUCTS (SIC 202)	0.3	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.9	3.6	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	37.7	0.1	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	BEVERAGES (SIC 208)	0.3	23.9	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	10.2	7.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.9	0.0	0.0	59.6	18.3	32.0	2.1	91.1	0.0	4.4
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	30.1	58.4	256.5	7.2	40.2	0.0	0.2
16	FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0	33.2	10.9	2.6	5.4	0.1	0.0
17	MISC. TEXTILE GOODS (SIC 229)	0.0	0.0	0.7	16.9	14.4	38.3	2.5	4.5	0.0	2.7
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	1.6	0.0	0.0	3.9	0.4	0.1	0.8	60.5	0.2	0.2
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.5	74.5	15.2
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.6	2.6
21	PULP & PAPER MILLS (SIC 261-3)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.6	0.1
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.4	0.2	0.4	2.6	0.1	3.8	0.2	0.8	0.4	0.1
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.7	2.1	30.9	1.8	6.1	10.7	1.1	3.4	0.3	1.8
24	PRINTING & PUBLISHING (SIC 27)	0.3	0.7	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	2.0	3.7	2.3	7.5	10.0	0.0	0.2	0.3	0.4	0.1
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.5	0.6	1.5	1.1	8.1	10.4	7.9	1.0	0.8	1.0
27	PETROLEUM PRODUCTS (SIC 29)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0	0.0	5.0	0.4	0.0	15.7	0.1	3.9	0.2	7.4
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0	20.4	4.7	0.2	0.0	0.0	0.0	0.0	0.2	0.3
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0	7.1	1.2	0.0	0.1	0.1	0.0	0.1	1.4	4.3
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.1	0.1	0.3	0.5	1.4	0.6	0.4	0.1	0.3	0.4
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	INSTRUMENTS (SIC 38)	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.0	0.1
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	5.4	0.1	0.1
43	TRANSPORTATION SERVICES (SIC 40-7)	6.7	6.1	6.1	4.1	10.4	9.1	1.9	3.1	5.8	2.0
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	2.2	3.2	6.7	5.4	13.2	10.2	3.5	6.0	4.8	2.1
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	17.8	14.6	21.2	14.6	38.9	90.5	22.1	34.3	10.8	10.4
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	1.6	7.2	5.2	3.6	8.6	10.8	1.9	11.4	5.5	4.6
47	BUSINESS SERVICES (SIC 73, 81, 89)	4.6	10.0	12.4	4.0	11.4	15.8	2.3	9.1	5.5	3.6
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.5	3.8	4.8	0.5	1.5	1.8	0.5	1.3	1.6	0.6
49	GOVERNMENT ENTERPRISES	0.2	0.6	0.7	0.5	1.0	2.0	0.3	2.0	0.4	0.3
50	UNALLOCATED INDUSTRIES	1.0	1.4	2.0	1.5	3.7	4.7	1.9	4.1	1.5	1.4
51	TOTAL LOCAL PURCHASES	107.2	120.3	189.0	160.3	242.8	529.6	69.5	293.9	147.9	68.1
52	HOUSEHOLDS	21.5	74.2	137.9	339.1	160.0	213.6	57.4	438.6	135.6	63.3
53	GROSS SAVINGS	2.8	37.6	30.5	75.3	35.2	28.5	6.4	34.6	28.5	12.4
54	CITY & COUNTY GOVERNMENT	0.7	2.3	3.8	3.8	3.3	4.1	1.3	2.2	7.0	1.3
55	STATE GOVERNMENT	0.3	1.9	2.8	5.1	3.8	1.1	0.5	3.6	11.0	0.7
56	FEDERAL GOVERNMENT	4.4	23.8	22.4	51.6	25.6	14.1	5.2	40.0	17.8	8.7
57	IMPORTS	128.5	118.5	211.6	375.1	413.5	599.6	183.8	285.2	140.1	78.5
58	TOTAL PURCHASES AND PAYMENTS	265.3	378.6	598.0	1010.4	884.3	1390.6	324.1	1098.2	488.0	232.9

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN GEORGIA , 1970
(MILLIONS OF DOLLARS)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)									
		21	22	23	24	25	26	27	28	29	30
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
2	FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
5	STONE & CLAY MINING (SIC 14 EXC 147)	3.3	0.8	2.9	0.0	0.6	0.3	2.8	0.2	0.0	44.4
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.2
7	CONTRACT CONSTRUCTION (SIC 15-7)	5.5	1.6	1.1	0.5	2.1	0.8	0.4	0.8	0.1	2.8
8	MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	1.3	0.1	0.0	0.0	1.2	0.0
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.0	1.3	0.0	0.0	0.3	0.4	0.0	0.0	0.0	0.0
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.2	3.3	0.0	0.0	0.0	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.2	0.0	0.0	0.3	3.2	4.2	0.0	0.0	0.0	0.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	1.3	0.3	0.0	0.0	0.0	0.0	0.0	2.1	0.4	0.0
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.5	0.0
16	FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
17	MISC. TEXTILE GOODS (SIC 229)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	10.1	0.0	0.0
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.1	0.8	0.1	0.0	0.7	0.1	0.0	0.9	1.3	3.0
19	LUMBER & WOOD PRODUCTS (SIC 24)	32.5	12.8	0.3	0.4	1.2	0.4	0.0	0.9	0.4	1.7
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.1	0.0	0.5
21	PULP & PAPER MILLS (SIC 261-3)	61.1	40.2	69.4	33.8	5.5	5.1	0.0	0.0	0.1	0.0
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	7.1	0.0	0.9	3.0	0.6	0.2	2.1	1.1	0.0	0.5
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.1	8.1	4.5	2.0	0.9	3.2	0.3	2.1	0.4	2.9
24	PRINTING & PUBLISHING (SIC 27)	0.0	2.5	1.0	7.6	0.0	0.3	0.0	0.0	0.0	0.0
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	23.6	4.4	0.7	4.9	36.3	32.1	0.9	4.9	0.0	2.4
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	1.3	0.5	0.2	0.3	9.7	7.8	0.9	3.3	0.3	0.7
27	PETROLEUM PRODUCTS (SIC 29)	0.0	0.1	0.0	0.0	0.9	0.2	0.1	0.0	0.0	0.2
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.4	3.8	0.4	0.7	0.5	6.9	0.0	2.3	2.2	1.4
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0	0.0	0.2	0.0	1.8	2.7	0.7	0.9	0.0	11.2
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.1	0.0	0.8
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0	0.5	1.1	0.0	0.1	0.0	0.0	0.3	0.0	0.0
33	FABRICATED METAL PRODUCTS (SIC 34)	2.2	0.3	1.6	0.1	2.5	8.8	0.4	0.9	0.1	1.1
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.8	0.0	0.1	0.3	0.6	0.0	0.0	0.3	0.0	0.7
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.9
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.3
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	INSTRUMENTS (SIC 38)	0.0	0.2	0.0	0.1	0.0	1.9	0.0	0.3	0.8	0.1
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0	0.1	0.0	0.2	0.6	0.1	0.0	1.3	0.2	0.1
43	TRANSPORTATION SERVICES (SIC 40-7)	15.9	2.0	4.4	1.5	5.5	3.1	1.0	2.0	0.3	11.2
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	23.8	8.0	3.2	3.9	9.1	3.2	2.1	3.3	0.5	15.8
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	31.7	5.6	7.8	7.3	13.7	12.9	3.1	8.4	2.2	10.9
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	6.8	2.1	3.7	9.8	4.1	4.2	0.9	2.8	0.8	5.8
47	BUSINESS SERVICES (SIC 73, 81, 89)	11.8	2.3	5.3	6.8	7.0	16.3	1.0	4.8	1.3	8.3
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	1.4	0.7	1.3	1.6	0.8	1.2	0.1	0.7	0.1	2.1
49	GOVERNMENT ENTERPRISES	1.3	0.2	0.3	2.6	0.4	0.5	0.0	0.3	0.2	0.9
50	UNALLOCATED INDUSTRIES	21.3	1.7	1.2	4.1	2.9	3.1	0.3	1.9	0.4	3.2
51	TOTAL LOCAL PURCHASES	253.5	101.1	111.9	93.2	116.7	123.6	17.3	57.4	14.4	134.0
52	HOUSEHOLDS	153.4	45.9	66.0	145.5	72.0	67.6	8.9	73.9	26.6	119.6
53	GROSS SAVINGS	61.3	11.3	9.9	24.9	45.5	17.1	2.1	17.8	5.7	19.9
54	CITY & COUNTY GOVERNMENT	11.0	1.3	1.1	2.0	5.4	2.1	0.3	2.4	0.3	2.8
55	STATE GOVERNMENT	5.2	1.2	0.8	1.8	3.4	1.3	0.1	1.7	0.5	1.0
56	FEDERAL GOVERNMENT	42.3	10.7	7.6	13.8	34.4	12.2	0.8	13.4	4.7	10.7
57	IMPORTS	190.6	53.4	92.9	59.8	141.9	95.0	20.1	79.0	25.5	101.1
58	TOTAL PURCHASES AND PAYMENTS	717.3	224.9	290.2	341.0	419.3	318.8	49.5	245.6	77.8	389.0

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN GEORGIA , 1970
(MILLIONS OF DOLLARS)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)									
		31	32	33	34	35	36	37	38	39	40
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.5	0.5	0.8	0.6	0.3	0.2	1.1	3.3	0.2	0.1
8	MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.4	0.2	0.0
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
16	FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.8	0.0
17	MISC. TEXTILE GOODS (SIC 229)	0.0	0.0	0.2	0.0	0.0	0.2	0.3	0.0	0.0	0.0
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0	0.0	0.2	0.1	0.0	0.0	2.5	0.3	0.1	0.2
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.3	0.3	1.7	5.9	0.3	0.2	0.4	0.3	21.5	0.4
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0	1.3	0.2	0.0	0.3	0.0	2.1	5.1	0.1
21	PULP & PAPER MILLS (SIC 261-3)	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0	0.0	0.5	0.2	0.1	0.3	0.0	0.2	3.2	0.0
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0	0.1	3.3	1.0	0.2	0.8	0.1	0.0	0.0	0.0
24	PRINTING & PUBLISHING (SIC 27)	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.2	0.0	0.0
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.2	0.2	1.3	0.6	0.2	0.8	0.2	1.4	0.0	0.0
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0	0.3	2.5	3.1	0.3	0.2	0.9	1.1	0.7	0.1
27	PETROLEUM PRODUCTS (SIC 29)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0	0.1	1.5	3.0	1.9	2.8	4.1	2.6	2.2	0.3
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.1	0.0	3.1	0.6	0.2	0.7	0.7	0.4	0.7	0.0
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.7	0.7	10.2	5.0	0.8	0.6	5.1	1.3	0.4	0.7
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.4	5.1	24.0	2.4	1.6	3.6	1.7	17.3	12.0	0.3
33	FABRICATED METAL PRODUCTS (SIC 34)	2.5	0.4	7.4	11.5	2.0	3.7	8.7	6.5	7.0	0.7
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	2.3	0.8	6.7	13.2	2.2	2.1	7.8	19.9	0.1	1.0
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.9	2.7	0.5	4.3	0.1	0.0	0.0	0.0
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.1	0.9	0.3	1.9	1.2	1.5	3.1	12.0	1.2	0.1
37	MOTOR VEHICLES & EQUIP. (SIC 371)	1.8	1.8	3.4	8.7	0.6	2.5	12.3	0.4	1.0	0.4
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.1	0.6	0.0	12.2	0.0	13.2	0.0	1.4
39	TRAILER COACHES (SIC 3791)	0.0	0.0	1.2	0.3	0.0	0.0	0.8	0.0	0.9	2.6
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.7	0.9	0.0	0.3	0.1	0.0	0.0	0.3
41	INSTRUMENTS (SIC 38)	0.0	0.2	0.4	1.1	0.5	1.7	0.2	2.2	0.0	0.0
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.3	0.0	3.1	0.6	0.1	1.2	0.5	2.5	0.0	0.1
43	TRANSPORTATION SERVICES (SIC 40-7)	2.9	1.1	3.6	2.0	1.0	0.8	3.8	5.6	2.0	0.4
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	4.3	2.1	4.9	3.3	1.7	1.4	2.9	18.0	0.9	0.4
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	5.1	4.0	14.4	12.3	5.3	6.3	14.9	36.6	5.3	1.9
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	1.7	1.3	7.1	5.7	3.5	1.4	2.8	9.0	2.1	0.4
47	BUSINESS SERVICES (SIC 73, 81, 89)	2.1	1.7	6.4	5.5	2.5	2.7	5.4	33.3	2.4	0.7
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.3	0.2	1.4	1.0	0.5	0.4	5.4	10.5	0.4	0.1
49	GOVERNMENT ENTERPRISES	0.2	0.1	0.4	0.5	0.2	0.2	0.6	2.4	0.2	0.1
50	UNALLOCATED INDUSTRIES	5.0	2.8	3.2	3.0	1.6	1.2	2.2	15.0	2.3	0.4
51	TOTAL LOCAL PURCHASES	31.3	25.0	117.4	98.4	29.4	54.6	89.4	218.3	72.7	13.2
52	HOUSEHOLDS	35.0	37.9	141.9	126.8	61.9	47.0	161.3	346.2	55.3	15.0
53	GROSS SAVINGS	4.9	7.9	27.7	29.2	16.2	8.7	122.5	65.8	9.7	1.5
54	CITY & COUNTY GOVERNMENT	2.2	0.7	3.8	2.2	1.9	0.5	2.6	3.4	0.8	0.1
55	STATE GOVERNMENT	0.2	1.1	2.6	2.0	0.7	0.7	7.6	12.0	1.0	0.1
56	FEDERAL GOVERNMENT	1.8	6.4	21.9	18.9	12.3	5.6	113.8	21.0	7.8	1.3
57	IMPORTS	40.4	93.7	180.1	147.9	68.7	56.7	290.9	735.3	111.0	18.2
58	TOTAL PURCHASES AND PAYMENTS	115.8	172.7	495.4	425.5	191.1	173.7	788.0	1402.1	258.3	49.5

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN GEORGIA , 1970
(MILLIONS OF DOLLARS)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)									
		41	42	43	44	45	46	47	48	49	50
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.1	0.0	0.0	26.1	0.0	0.6	0.0	1.1
2	FIELD CROPS (SIC 011)	0.2	0.0	0.8	0.0	0.0	34.4	0.0	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.0	0.1	0.2	0.0	0.0	6.1	0.0	0.5	0.0	0.8
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.1	0.0	0.0	5.7	0.6	0.0	0.0	0.0	0.1
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0	0.0	0.0	0.0	0.4	1.4	0.1	0.1	0.0	0.0
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.2	0.4	30.0	40.6	13.8	108.6	1.2	61.3	51.3	0.0
8	MEAT PRODUCTS (SIC 201)	0.0	0.2	1.7	0.0	3.2	0.3	0.0	2.5	0.0	8.3
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.9	0.0	2.5	0.2	0.0	1.3	0.0	3.1
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.5	0.0	1.4	0.3	0.0	0.8	0.0	1.1
11	GRAIN MILL PRODUCTS (SIC 204)	0.0	0.0	0.1	0.0	3.1	0.3	0.0	0.7	0.0	0.1
12	BEVERAGES (SIC 208)	0.0	0.0	0.5	0.0	3.3	1.7	0.0	0.0	0.0	3.6
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0	0.0	2.1	0.0	8.7	0.9	0.0	1.8	0.0	2.8
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.2	0.5	0.0	0.2	0.7	1.4	0.0	0.6	0.0	0.8
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.1	0.0	0.1	1.3	1.6	0.0	0.0	0.0	0.3
16	FLOOR COVERINGS (SIC 227)	0.0	0.0	0.1	0.1	3.1	2.1	0.0	0.0	0.0	0.0
17	MISC. TEXTILE GOODS (SIC 229)	0.0	0.3	0.0	0.0	0.4	0.4	0.0	0.1	0.1	0.0
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.2	0.5	0.1	0.1	7.1	1.8	0.0	3.9	0.2	0.2
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.1	2.6	0.0	0.1	4.3	1.3	0.0	0.0	0.0	0.1
20	FURNITURE & FIXTURES (SIC 25)	0.5	0.3	0.0	0.0	1.4	0.3	0.0	0.0	0.0	0.0
21	PULP & PAPER MILLS (SIC 261-3)	0.2	3.0	0.0	0.6	3.4	5.3	0.1	0.0	0.5	0.1
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.3	0.2	0.1	0.3	3.0	1.5	0.5	0.8	0.2	1.0
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.4	1.1	0.1	0.1	8.3	0.4	0.2	0.5	0.0	0.5
24	PRINTING & PUBLISHING (SIC 27)	0.0	0.8	0.5	0.0	3.2	5.8	147.8	6.4	0.4	26.3
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.4	0.8	0.4	0.7	5.2	6.2	2.0	4.3	1.6	0.0
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.3	0.9	0.1	0.0	6.8	1.7	2.8	10.2	0.1	0.4
27	PETROLEUM PRODUCTS (SIC 29)	0.0	0.0	0.1	0.0	0.6	0.4	0.0	0.0	0.0	0.0
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	1.3	3.2	1.3	0.1	4.2	1.4	0.1	2.9	0.1	0.2
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0	0.3	0.0	0.0	0.3	0.1	0.0	0.1	0.0	0.2
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.2	0.2	0.0	0.0	4.6	1.2	0.0	3.2	0.0	0.0
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.1	0.4	1.0	0.2	0.2	0.1	0.0	0.0	0.0	0.3
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.3	2.5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	2.2
33	FABRICATED MFTAL PRODUCTS (SIC 34)	1.7	2.8	0.4	0.0	4.6	1.1	0.0	2.3	0.0	1.1
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.7	0.6	0.3	0.1	4.1	2.6	3.3	2.6	0.0	1.2
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.1	0.2	0.1	0.0	1.1	1.6	0.2	0.1	0.0	0.1
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.8	0.3	1.4	0.1	1.8	0.3	0.1	4.4	0.0	0.2
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.8	0.1	0.3	0.0	1.1	0.7	0.0	2.0	0.0	0.4
38	AIRCRAFT & PARTS (SIC 372)	0.7	0.0	16.1	0.0	11.2	0.6	0.0	0.0	0.0	0.5
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.1	0.8	0.3	0.0	0.2	0.1	0.0	0.0	0.0	0.1
41	INSTRUMENTS (SIC 38)	0.9	0.3	0.0	0.2	1.5	0.2	0.1	0.5	0.0	0.1
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.7	8.4	0.0	0.0	2.7	0.3	6.8	3.3	0.0	1.7
43	TRANSPORTATION SERVICES (SIC 40-7)	0.3	0.9	45.5	8.0	17.9	9.4	1.5	7.2	12.6	30.9
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.9	1.7	16.8	104.2	84.2	59.9	125.4	84.9	10.8	0.0
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	4.5	5.9	43.5	8.9	71.9	60.2	28.1	101.2	2.7	12.3
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	1.1	2.5	41.2	17.6	192.1	683.3	44.2	188.4	7.8	0.0
47	BUSINESS SERVICES (SIC 73, 81, 89)	3.5	3.3	24.1	21.3	130.4	133.3	59.1	74.9	10.5	0.0
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.3	0.7	22.2	21.9	47.4	56.9	20.0	114.6	1.7	27.3
49	GOVERNMENT ENTERPRISES	0.2	0.4	17.5	81.3	50.8	62.3	21.4	23.1	0.3	0.0
50	UNALLOCATED INDUSTRIES	1.1	1.5	9.3	6.7	35.4	37.5	27.0	47.8	2.5	0.0
51	TOTAL LOCAL PURCHASES	23.1	48.8	279.8	313.4	760.0	1324.6	492.1	759.8	103.7	129.6
52	HOUSEHOLDS	20.8	54.3	651.0	344.0	2385.0	1934.7	412.2	1069.8	191.4	0.0
53	GROSS SAVINGS	9.3	11.5	89.1	264.7	378.3	505.1	56.7	483.8	83.8	0.0
54	CITY & COUNTY GOVERNMENT	0.4	1.8	8.1	43.6	63.0	106.6	3.6	100.1	0.0	0.0
55	STATE GOVERNMENT	0.4	1.2	14.2	8.6	624.3	73.9	3.8	44.1	0.0	0.0
56	FEDERAL GOVERNMENT	3.2	11.0	43.1	117.8	299.2	80.2	29.5	241.7	0.0	0.0
57	IMPORTS	27.2	49.2	241.9	188.4	310.5	222.3	94.0	402.7	46.1	176.9
58	TOTAL PURCHASES AND PAYMENTS	84.4	177.8	1327.3	1280.5	4820.3	4247.4	1091.9	3102.0	425.0	306.5

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN GEORGIA , 1970
(MILLIONS OF DOLLARS)

		FINAL DEMAND					
	TOTAL LOCAL SALES	PERSONAL CONSUMPTION EXPENDITURES	GROSS PRIVATE INVESTMENT	LOCAL GOVERNMENT	STATE GOVERNMENT	---FEDERAL (DEFENSE)	GOVERNMENT--- (OTHER)
1 LIVESTOCK & LIVESTOCK PROD. (SIC 013)	553.6	59.7	0.0	0.3	0.2	0.0	0.1
2 FIELD CROPS (SIC 011)	121.2	0.3	0.0	0.1	0.1	0.0	81.5
3 OTHER CROPS (SIC 012, 019)	45.0	28.5	0.0	0.4	0.4	0.0	0.1
4 FORESTRY, FISHING, AG. SERV. (SIC 07-9)	102.0	9.6	0.0	0.1	0.0	0.3	0.0
5 STONE & CLAY MINING (SIC 14 EXC 147)	87.3	0.4	0.0	0.0	0.0	0.1	0.0
6 OTHER MINING (SIC 10-3, 147)	2.4	0.0	0.0	0.0	0.0	4.0	0.1
7 CONTRACT CONSTRUCTION (SIC 15-7)	364.2	0.0	1079.3	305.8	312.6	47.6	57.3
8 MEAT PRODUCTS (SIC 201)	59.1	209.8	0.0	2.0	1.9	1.1	0.4
9 DAIRY PRODUCTS (SIC 202)	26.2	137.8	0.0	3.1	2.0	0.8	0.9
10 CANNED & PRESERVED FOODS (SIC 203)	16.7	62.1	0.0	0.5	0.5	0.2	0.1
11 GRAIN MILL PRODUCTS (SIC 204)	149.5	18.3	0.0	0.2	0.1	0.1	0.6
12 BEVERAGES (SIC 208)	50.9	152.3	0.0	0.2	0.1	0.1	0.0
13 FOOD PRODUCTS, NEC (SIC 205-7, 209)	89.4	209.1	0.0	1.1	1.0	0.4	0.6
14 FABRIC MILLS (SIC 221-4, 2261-2)	218.3	5.6	0.0	0.1	0.1	0.5	0.0
15 YARN & THREAD MILLS (SIC 2269, 228)	397.2	1.1	0.0	0.0	0.0	0.0	0.0
16 FLOOR COVERINGS (SIC 227)	59.9	12.7	0.9	0.0	0.0	0.0	0.0
17 MISC. TEXTILE GOODS (SIC 229)	94.8	1.4	0.0	0.0	0.0	0.0	0.0
18 FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	93.8	127.8	0.0	0.5	0.5	1.5	0.5
19 LUMBER & WOOD PRODUCTS (SIC 24)	262.6	3.5	0.1	0.1	0.1	0.1	0.0
20 FURNITURE & FIXTURES (SIC 25)	22.7	46.3	25.3	2.5	1.5	0.4	0.5
21 PULP & PAPER MILLS (SIC 261-3)	229.5	0.6	0.0	0.3	0.2	0.1	0.3
22 PAPER PRODUCTS EXC CONTAINERS (SIC 264)	44.7	1.8	0.0	0.1	0.1	0.2	0.2
23 PAPERBOARD CONTAINERS & BOXES (SIC 265)	109.8	0.9	0.0	0.7	0.6	0.1	0.0
24 PRINTING & PUBLISHING (SIC 27)	207.9	42.7	0.0	3.8	2.2	2.9	0.0
25 CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	179.3	3.8	0.0	2.2	2.1	12.2	1.1
26 PLASTICS DRUGS & PAINTS (SIC 282-5)	100.8	50.3	0.0	2.5	1.5	0.9	0.6
27 PETROLEUM PRODUCTS (SIC 29)	19.9	0.4	0.0	0.0	0.0	8.6	0.8
28 RUBBER & PLASTICS PRODUCTS (SIC 30)	100.0	13.3	0.2	0.9	0.9	2.3	0.2
29 LEATHER & LEATHER PRODUCTS (SIC 31)	2.6	17.9	0.0	0.0	0.0	0.1	0.0
30 STONE, CLAY & GLASS PRODUCTS (SIC 32)	215.1	2.1	0.0	0.1	0.1	0.5	0.1
31 PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	36.8	0.0	0.0	0.0	0.0	0.7	0.0
32 NONFERROUS METAL MFG. (SIC 333-6, 3392)	80.4	0.0	0.1	0.0	0.0	1.8	0.1
33 FABRICATED METAL PRODUCTS (SIC 34)	214.2	4.9	10.7	0.2	0.1	1.7	0.4
34 MACHINERY, EXCEPT ELECTRICAL (SIC 35)	90.4	2.7	63.7	2.4	1.4	9.6	2.0
35 ELEC. TRANSMISSION EQUIP. (SIC 361-2)	16.1	0.1	6.1	0.1	0.1	3.3	0.4
36 MISC. ELECTRICAL EQUIP. (SIC 363-9)	44.5	5.6	4.7	0.3	0.3	7.0	1.2
37 MOTOR VEHICLES & EQUIP. (SIC 371)	39.1	33.5	16.6	0.9	0.6	8.7	0.8
38 AIRCRAFT & PARTS (SIC 372)	57.3	1.5	14.7	0.0	0.0	842.4	3.6
39 TRAILER COACHES (SIC 3791)	7.7	92.0	1.7	0.0	0.0	0.0	0.0
40 OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	4.1	1.1	4.7	0.0	0.0	0.3	0.2
41 INSTRUMENTS (SIC 38)	14.2	5.5	0.9	0.1	0.1	0.9	0.5
42 MISC. MANUFACTURING (SIC 39, 19, 21)	42.3	6.8	5.1	0.3	0.1	5.1	0.1
43 TRANSPORTATION SERVICES (SIC 40-7)	324.8	116.7	8.1	8.5	5.7	17.7	2.5
44 COMMUNICATIONS & UTILITIES (SIC 48-9)	692.8	384.4	14.8	27.3	17.9	8.6	0.9
45 WHOLESALE & RETAIL TRADE (SIC 50-9)	1125.7	2563.4	128.7	11.6	8.8	9.4	2.3
46 FINANCE, INS., REAL ESTATE (SIC 60-6)	1388.7	1842.5	14.0	30.9	20.7	1.4	162.1
47 BUSINESS SERVICES (SIC 73, 81, 89)	804.0	92.7	0.0	16.6	12.7	27.2	7.8
48 OTHER SERVICES (SIC 70-2, 75-80, 82-6)	388.3	1782.5	0.0	23.0	25.2	23.4	15.7
49 GOVERNMENT ENTERPRISES	280.4	43.5	0.0	3.4	3.0	1.4	4.0
50 UNALLOCATED INDUSTRIES	288.3	0.0	0.0	7.6	6.3	1.2	3.2
51 TOTAL LOCAL PURCHASES	9966.6	8199.3	1400.4	460.9	432.3	1057.0	353.9
52 HOUSEHOLDS	11943.6	99.7	0.0	842.0	563.4	880.0	1537.3
53 GROSS SAVINGS	3019.1	871.6	0.0	0.0	0.0	0.0	0.0
54 CITY & COUNTY GOVERNMENT	480.3	377.9	0.0	0.0	445.9	0.0	47.3
55 STATE GOVERNMENT	858.8	341.9	0.0	22.1	0.0	0.0	408.8
56 FEDERAL GOVERNMENT	1533.9	2197.8	0.0	0.0	19.1	0.0	0.0
57 IMPORTS	8159.2	3777.8	802.1	138.8	115.8	0.0	0.0
58 TOTAL PURCHASES AND PAYMENTS	35961.6	15866.0	2202.5	1463.8	1576.4	1937.0	2347.3

TABLE 1. INTERINDUSTRY FLOW OF GOODS AND SERVICES IN GEORGIA , 1970
(MILLIONS OF DOLLARS)

		FINAL DEMAND		
		NET EXPORTS	TOTAL FINAL DEMAND	TOTAL SALES
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	144.8	205.2	758.8
2	FIELD CROPS (SIC 011)	223.8	305.8	426.9
3	OTHER CROPS (SIC 012, 019)	59.7	89.2	134.2
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	65.2	75.2	177.2
5	STONE & CLAY MINING (SIC 14 EXC 147)	97.0	97.5	184.8
6	OTHER MINING (SIC 10-3, 147)	5.2	9.4	11.8
7	CONTRACT CONSTRUCTION (SIC 15-7)	352.7	2155.4	2519.6
8	MEAT PRODUCTS (SIC 201)	425.0	640.2	699.3
9	DAIRY PRODUCTS (SIC 202)	6.6	151.2	177.4
10	CANNED & PRESERVED FOODS (SIC 203)	112.3	175.8	192.5
11	GRAIN MILL PRODUCTS (SIC 204)	96.6	115.9	265.3
12	BEVERAGES (SIC 208)	174.9	327.7	378.6
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	296.5	508.7	598.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	785.8	792.1	1010.4
15	YARN & THREAD MILLS (SIC 2269, 228)	486.1	487.1	884.3
16	FLOOR COVERINGS (SIC 227)	1317.0	1330.7	1390.6
17	MISC. TEXTILE GOODS (SIC 229)	227.9	229.4	324.1
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	873.4	1004.4	1098.1
19	LUMBER & WOOD PRODUCTS (SIC 24)	221.5	225.4	488.0
20	FURNITURE & FIXTURES (SIC 25)	133.7	210.3	232.9
21	PULP & PAPER MILLS (SIC 261-3)	486.2	487.8	717.3
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	177.7	180.2	224.9
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	178.0	180.4	290.2
24	PRINTING & PUBLISHING (SIC 27)	81.3	133.1	341.0
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	218.6	239.9	419.3
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	162.2	218.0	318.8
27	PETROLEUM PRODUCTS (SIC 29)	19.8	29.6	49.5
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	128.0	145.6	245.6
29	LEATHER & LEATHER PRODUCTS (SIC 31)	57.3	75.2	77.8
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	171.0	173.9	389.0
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	78.3	79.0	115.8
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	90.3	92.2	172.7
33	FABRICATED METAL PRODUCTS (SIC 34)	263.2	281.2	495.4
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	253.4	335.1	425.5
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	165.0	175.0	191.1
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	110.2	129.2	173.7
37	MOTOR VEHICLES & EQUIP. (SIC 371)	687.8	748.9	788.0
38	AIRCRAFT & PARTS (SIC 372)	482.5	1344.7	1402.1
39	TRAILER COACHES (SIC 3791)	156.9	250.6	258.3
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	39.0	45.3	49.5
41	INSTRUMENTS (SIC 38)	62.1	70.2	84.4
42	MISC. MANUFACTURING (SIC 39, 19, 21)	118.0	135.5	177.8
43	TRANSPORTATION SERVICES (SIC 40-7)	843.3	1002.5	1327.3
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	133.7	587.7	1280.5
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	970.4	3694.6	4820.3
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	787.3	2858.8	4247.4
47	BUSINESS SERVICES (SIC 73, 81, 89)	130.8	287.8	1091.9
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	844.0	2713.7	3102.0
49	GOVERNMENT ENTERPRISES	89.3	144.6	425.0
50	UNALLOCATED INDUSTRIES	0.0	18.2	306.5
51	TOTAL LOCAL PURCHASES	14091.3	25995.1	35961.6
52	HOUSEHOLDS	0.0	3922.3	15866.0
53	GROSS SAVINGS	0.0	871.6	3890.7
54	CITY & COUNTY GOVERNMENT	0.0	871.1	1351.4
55	STATE GOVERNMENT	0.0	772.8	1631.6
56	FEDERAL GOVERNMENT	0.0	2216.9	3750.8
57	IMPORTS	0.0	4834.5	12993.8
58	TOTAL PURCHASES AND PAYMENTS	14091.3	39484.3	75445.9

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
		1	2	3	4	5	6	7
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	4.9091	4.0600	3.0646	10.9009	0.0	0.0	0.0
2	FIELD CROPS (SIC 011)	5.3053	1.4210	0.0	5.3408	0.0	0.0	0.0026
3	OTHER CROPS (SIC 012, 019)	0.0278	0.0	2.5106	4.6177	0.0	0.0	0.2120
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	3.5368	3.3357	3.7715	3.6818	0.0	0.0	0.0027
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0075	0.2871	0.2531	0.0001	1.1259	0.9166	1.0109
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0024	0.0024	0.0	0.0137	3.4149	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.6942	1.2221	1.3615	0.0	0.8246	0.8406	0.0353
8	MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	12.8036	0.0	0.0	1.1732	0.0	0.0	0.0
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.5035	0.0	0.0055	1.4427	0.0	0.0	0.0030
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0	0.0327	0.0	0.0	0.0	0.0067	0.0116
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	FLOOR COVERINGS (SIC 227)	0.0	0.0	0.0	0.0000	0.0002	0.0	0.0292
17	MISC. TEXTILE GOODS (SIC 229)	0.0067	0.0116	0.0312	1.1734	0.0020	0.0007	0.0072
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	0.0233	0.0211	0.1766	0.0225	0.0	0.0002	0.0208
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0042	0.0038	0.6891	0.3095	0.0027	0.3937	3.1782
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.0	0.0	0.0	0.2426
21	PULP & PAPER MILLS (SIC 261-3)	0.0012	0.0011	0.0018	0.0084	0.0009	0.0009	0.0015
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0070	0.0006	0.0009	0.0014	0.0262	0.0123	0.2672
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0017	0.0	0.0651	1.5244	0.0	0.0	0.0040
24	PRINTING & PUBLISHING (SIC 27)	0.0043	0.0064	0.0191	0.0044	0.0015	0.0017	0.0013
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0355	2.1970	2.1468	0.0306	0.3841	1.6749	0.0921
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0146	0.0	0.0	0.0474	0.0019	0.0089	0.4045
27	PETROLEUM PRODUCTS (SIC 29)	0.0009	0.0043	0.0038	0.0021	0.1557	0.0012	0.6497
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0124	0.0537	0.2001	0.0072	1.2628	0.0983	0.4044
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0026	0.0	0.0	0.0194	0.0002	0.0002	0.0003
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0131	0.0365	0.1018	0.0001	1.9958	0.0469	5.7808
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0	0.0	0.0	0.2322	0.1187	0.2398
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0001	0.0001	0.0002	0.0	0.0324	0.0291	0.1483
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0590	0.0293	0.0295	1.3936	0.0765	0.0682	3.9476
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0110	0.2582	0.1822	0.0071	0.8574	1.9306	0.3209
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0235	0.0246	0.1247
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0052	0.0246	0.0280	0.0229	0.0492	0.0195	0.4776
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0012	0.0029	0.0048	0.0012	0.0735	0.0126	0.0048
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0001	0.0046	0.0032	0.0282	0.0	0.0	0.0016
41	INSTRUMENTS (SIC 38)	0.0	0.0	0.0	0.0006	0.0	0.0003	0.0013
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0005	0.0005	0.0009	0.0009	0.0008	0.0007	0.0598
43	TRANSPORTATION SERVICES (SIC 40-7)	0.9134	0.2975	0.6189	0.6664	0.6427	1.0548	1.6462
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.4312	0.5552	1.1356	0.0345	3.6282	3.5038	0.5835
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	3.2309	2.0755	4.2288	3.5545	3.6595	1.6728	8.8970
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.9540	5.4637	1.8702	1.4757	3.8395	4.3936	1.0160
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.3481	2.1403	2.1363	0.0242	1.4919	1.1069	4.3698
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.5310	0.4977	0.8731	0.2937	1.3414	0.3331	0.5523
49	GOVERNMENT ENTERPRISES	0.0124	0.0123	0.0234	0.0350	0.2302	0.2474	0.0842
50	UNALLOCATED INDUSTRIES	0.0388	0.0571	0.1696	1.0727	0.7592	0.5935	0.5160
51	TOTAL LOCAL PURCHASES	34.4523	24.1164	25.7102	38.9193	22.7361	22.5290	35.3536
52	HOUSEHOLDS	29.9147	45.6807	49.1558	28.7891	28.4917	28.0937	26.3933
53	GROSS SAVINGS	10.7543	12.3627	5.7596	14.9127	18.1335	17.8802	4.1150
54	CITY & COUNTY GOVERNMENT	1.4347	6.1417	5.9004	0.2470	0.9295	0.9165	1.0242
55	STATE GOVERNMENT	0.0	0.0	0.0	0.0	0.3390	0.3343	0.3683
56	FEDERAL GOVERNMENT	0.0	0.0	0.0	0.0	4.5455	4.4820	4.0413
57	IMPORTS	23.4440	11.6985	13.4740	17.1319	24.8248	25.7644	28.7042
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
		8	9	10	11	12	13	14
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	53.3290	41.2649	0.0	0.0	0.0	0.1603	0.0
2	FIELD CROPS (SIC 011)	0.0	0.0	0.0	5.2881	0.0	1.2909	0.0
3	OTHER CROPS (SIC 012, 019)	0.0	0.0238	4.2908	0.0582	0.4439	0.4563	0.0
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	8.5061	0.0411	0.0	0.0	0.0
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0	0.0	0.0	0.1661	0.0	0.0001	0.0020
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0014	0.0	0.0000	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0771	0.2263	0.2751	0.2819	0.3090	0.2453	0.1292
8	MEAT PRODUCTS (SIC 201)	2.3065	0.3377	1.7665	0.4568	0.0053	3.1611	0.0
9	DAIRY PRODUCTS (SIC 202)	0.0030	9.3470	0.1821	0.1028	0.1897	0.0491	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.1942	0.0711	0.9377	0.3205	0.9506	0.7644	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.1148	0.0030	0.1464	14.2001	0.0386	0.7967	0.0
12	BEVERAGES (SIC 208)	0.0001	0.1747	2.2969	0.1050	6.3044	1.5800	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.5715	0.3770	3.4840	3.8349	1.8372	5.0153	0.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0	0.0000	0.0	0.3535	0.0002	0.0001	5.8977
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0	0.0	0.0	0.0	2.9838
16	FLOOR COVERINGS (SIC 227)	0.0000	0.0001	0.0	0.0000	0.0000	0.0000	0.0000
17	MISC. TEXTILE GOODS (SIC 229)	0.0	0.0033	0.0	0.0	0.0	0.1205	1.6763
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0349	0.1255	0.0245	0.5932	0.0089	0.0041	0.3818
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0222	0.0612	0.0493	0.0	0.0474	0.0134	0.0003
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0	0.0	0.0007	0.0	0.0009	0.0027
21	PULP & PAPER MILLS (SIC 261-3)	0.0000	0.0000	0.0001	0.0000	0.0001	0.0000	0.0001
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0180	0.0736	0.1784	0.1649	0.0659	0.0685	0.2613
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.1946	1.5056	1.2186	0.2506	0.5469	5.1655	0.1789
24	PRINTING & PUBLISHING (SIC 27)	0.0494	0.1291	0.2623	0.1186	0.1868	0.2986	0.0012
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0081	0.0207	0.0353	0.7574	0.9881	0.3802	0.7374
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0050	0.0076	0.0770	0.1771	0.1712	0.2441	0.1072
27	PETROLEUM PRODUCTS (SIC 29)	0.0001	0.0009	0.0003	0.0003	0.0009	0.0006	0.0001
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.2766	0.0526	0.1369	0.0064	0.0101	0.8388	0.0400
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0005	0.0004	0.0007	0.0010	0.0004	0.0007	0.0008
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0000	0.2612	2.8860	0.0013	5.3996	0.7821	0.0224
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0	0.0000	0.0000	0.0000	0.0000	0.0001	0.0
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0	0.0	0.0000	0.0	0.0	0.0	0.0000
33	FABRICATED METAL PRODUCTS (SIC 34)	0.4692	0.0968	5.7921	0.0155	1.8813	0.1960	0.0027
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0100	0.0373	0.0438	0.0543	0.0326	0.0489	0.0523
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0007	0.0106	0.0011	0.0017	0.0089	0.0052	0.0003
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0003	0.0042	0.0005	0.0007	0.0036	0.0021	0.0001
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	INSTRUMENTS (SIC 38)	0.0013	0.0014	0.0059	0.0016	0.0021	0.0011	0.0035
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0005	0.0011	0.0019	0.0007	0.0015	0.0153	0.0011
43	TRANSPORTATION SERVICES (SIC 40-7)	1.0170	0.1521	2.5967	2.5110	1.6087	1.0197	0.4011
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.2618	0.9424	0.7764	0.8195	0.8324	1.1240	0.5359
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	1.2023	1.9109	6.9357	6.6898	3.8520	3.5408	1.4450
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.2152	1.3162	0.7966	0.6181	1.9083	0.8638	0.3545
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.3158	1.2410	2.9273	1.7200	2.6355	2.0739	0.3995
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.1935	1.1008	0.2807	0.2049	0.9908	0.8051	0.0454
49	GOVERNMENT ENTERPRISES	0.0382	0.1488	0.0929	0.0924	0.1512	0.1249	0.0486
50	UNALLOCATED INDUSTRIES	0.1200	0.3336	0.3215	0.3810	0.3667	0.3408	0.1510
51	TOTAL LOCAL PURCHASES	61.0512	61.3648	47.3280	40.3935	31.7806	31.5997	15.8644
52	HOUSEHOLDS	15.3631	20.3625	14.5284	8.1113	19.5890	23.0598	33.5656
53	GROSS SAVINGS	2.4884	2.8648	2.6341	1.0541	9.9267	5.1084	7.4560
54	CITY & COUNTY GOVERNMENT	0.2727	0.4148	0.3934	0.2501	0.6157	0.6282	0.3810
55	STATE GOVERNMENT	0.2607	0.2555	0.1955	0.1091	0.4921	0.4688	0.5040
56	FEDERAL GOVERNMENT	2.4780	1.4033	1.1865	1.6525	6.2819	3.7466	5.1064
57	IMPORTS	18.0857	13.3342	33.7341	48.4294	31.3140	35.3885	37.1227
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
		15	16	17	18	19	20	21
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0459	0.0	0.0421	0.0	0.0	0.0	0.0
2	FIELD CROPS (SIC 011)	0.0	0.0	2.5168	0.0	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0447	0.0	1.4947	0.0	0.0
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.2931	4.5548	0.0	0.0
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0018	0.0	0.0	0.0	0.0029	0.0	0.4540
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0	0.0065
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.3534	0.3759	0.3260	0.0993	0.3784	0.1319	0.7600
8	MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0003	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0005	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.0	0.0	0.0	0.0	0.0017	0.0	0.0
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0	0.0	0.0107	0.0001	0.0	0.0000	0.0215
14	FABRIC MILLS (SIC 221-4, 2261-2)	2.0668	2.2990	0.6395	8.2939	0.0	1.8927	0.1791
15	YARN & THREAD MILLS (SIC 2269, 228)	6.6081	18.4472	2.2084	3.6647	0.0	0.0981	0.0
16	FLOOR COVERINGS (SIC 227)	3.7521	0.7851	0.8126	0.4899	0.0269	0.0176	0.0000
17	MISC. TEXTILE GOODS (SIC 229)	1.6236	2.7546	0.7740	0.4139	0.0012	1.1609	0.0
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0399	0.0088	0.2380	5.5082	0.0426	0.0955	0.0201
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0002	0.0	0.0	0.0418	15.2584	6.5087	4.5285
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0018	0.0957	0.0161	0.1147	1.1356	0.0
21	PULP & PAPER MILLS (SIC 261-3)	0.0002	0.0002	0.0260	0.0011	0.1252	0.0352	8.5193
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0068	0.2765	0.0510	0.0748	0.0832	0.0289	0.9913
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.6915	0.7683	0.3319	0.3058	0.0583	0.7741	0.0093
24	PRINTING & PUBLISHING (SIC 27)	0.0015	0.0021	0.0016	0.0022	0.0052	0.0049	0.0043
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	1.1309	0.0022	0.0516	0.0252	0.0809	0.0328	3.2860
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.9199	0.7465	2.4376	0.0872	0.1679	0.4431	0.1746
27	PETROLEUM PRODUCTS (SIC 29)	0.0003	0.0003	0.0002	0.0001	0.0031	0.0002	0.0020
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0012	1.1276	0.0165	0.3549	0.0413	3.1923	0.0525
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0018	0.0005	0.0013	0.0494	0.0055	0.0135	0.0059
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0000	0.0	0.0060	0.0006	0.0338	0.1354	0.0059
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0000	0.0000	0.0	0.0006	0.0263	0.3401	0.0005
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0	0.0	0.0006	0.0102	0.0373	0.1119	0.0
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0125	0.0079	0.0115	0.0136	0.2959	1.8476	0.3051
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.1631	0.0461	0.1158	0.0117	0.0645	0.1597	0.1164
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.0	0.0	0.0	0.0	0.0019	0.0000
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0009	0.0005	0.0008	0.0008	0.0059	0.0127	0.0016
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0002	0.0002	0.0003	0.0003	0.0093	0.0074	0.0033
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0	0.0	0.0000	0.0002	0.0004	0.0
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.2028	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0001	0.0015	0.0014	0.0
41	INSTRUMENTS (SIC 38)	0.0095	0.0051	0.0643	0.0310	0.0092	0.0487	0.0049
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0031	0.0020	0.0359	0.4893	0.0193	0.0630	0.0016
43	TRANSPORTATION SERVICES (SIC 40-7)	1.1727	0.6531	0.5877	0.2843	1.1893	0.8798	2.2189
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	1.4952	0.7369	1.0721	0.5430	0.9758	0.8881	3.3143
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	4.4010	6.5080	6.8193	3.1208	2.2092	4.4501	4.4167
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.9696	0.7800	0.5729	1.0350	1.1294	1.9819	0.9433
47	BUSINESS SERVICES (SIC 73, 81, 89)	1.2838	1.1364	0.7110	0.8306	1.1257	1.5315	1.6496
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.1718	0.1289	0.1402	0.1227	0.3336	0.2636	0.1932
49	GOVERNMENT ENTERPRISES	0.1130	0.1458	0.0984	0.1786	0.0771	0.1312	0.1748
50	UNALLOCATED INDUSTRIES	0.4169	0.3356	0.5901	0.3726	0.3107	0.6020	2.9700
51	TOTAL LOCAL PURCHASES	27.4593	38.0832	21.4527	26.7674	30.3016	29.2273	35.3351
52	HOUSEHOLDS	18.0969	15.3582	17.6978	39.9443	27.7987	27.1860	21.3841
53	GROSS SAVINGS	3.9824	2.0512	1.9736	3.1473	5.8437	5.3331	8.5489
54	CITY & COUNTY GOVERNMENT	0.3729	0.2940	0.3985	0.2048	1.4346	0.5537	1.5355
55	STATE GOVERNMENT	0.4314	0.0787	0.1693	0.3238	2.2547	0.2800	0.7292
56	FEDERAL GOVERNMENT	2.8960	1.0174	1.6116	3.6441	3.6494	3.7355	5.9020
57	IMPORTS	46.7611	43.1172	56.6964	25.9683	28.7173	33.6843	26.5652
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
		22	23	24	25	26	27	28
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0207	0.0	0.0
2	FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0011	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0000	0.0073	0.0	0.0
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.1897	0.0023	0.0	0.0
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.3537	0.9872	0.0	0.1500	0.1068	5.5759	0.0913
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.4017	0.0013	0.0000	0.0001
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.7071	0.3762	0.1524	0.5103	0.2425	0.7844	0.3289
8	MEAT PRODUCTS (SIC 201)	0.0014	0.0	0.0	0.3024	0.0326	0.0003	0.0025
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0010	0.0000	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0558	0.0094	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.5715	0.0	0.0	0.0797	0.1150	0.0	0.0
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0480	1.0286	0.0	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0020	0.0026	0.0766	0.7628	1.3159	0.0305	0.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.1443	0.0	0.0065	0.0023	0.0133	0.0000	0.8549
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0	0.0381	0.0	0.0095	0.0	0.0289
16	FLOOR COVERINGS (SIC 227)	0.0000	0.0000	0.0001	0.0	0.0000	0.0000	0.0000
17	MISC. TEXTILE GOODS (SIC 229)	0.0346	0.0	0.0006	0.0	0.0047	0.0	4.1121
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.3620	0.0439	0.0	0.1753	0.0194	0.0278	0.3478
19	LUMBER & WOOD PRODUCTS (SIC 24)	5.6728	0.1059	0.1112	0.2846	0.1244	0.0736	0.3532
20	FURNITURE & FIXTURES (SIC 25)	0.0010	0.0044	0.1670	0.0004	0.0	0.0	0.0512
21	PULP & PAPER MILLS (SIC 261-3)	17.8939	23.9090	9.9089	1.3023	1.6032	0.0285	0.0058
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0149	0.2995	0.8826	0.1494	0.0767	4.2453	0.4291
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	3.6204	1.5580	0.6003	0.2261	0.9914	0.5953	0.8690
24	PRINTING & PUBLISHING (SIC 27)	1.1021	0.3577	2.2144	0.0057	0.0867	0.0017	0.0075
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	1.9722	0.2512	1.4481	8.6573	10.0781	1.7983	2.0036
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.2043	0.0623	0.0770	2.3218	2.4329	1.7667	1.3273
27	PETROLEUM PRODUCTS (SIC 29)	0.0521	0.0	0.0004	0.2218	0.0647	0.1792	0.0090
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	1.6952	0.1387	0.2034	0.1144	2.1528	0.0278	0.9336
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0032	0.0016	0.0020	0.0029	0.0008	0.0016	0.0582
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0053	0.0765	0.0001	0.4235	0.8476	1.5126	0.3611
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0023	0.0	0.0002	0.1323	0.0160	0.0058	0.0398
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.2047	0.3927	0.0018	0.0192	0.0036	0.0030	0.1133
33	FABRICATED METAL PRODUCTS (SIC 34)	0.1201	0.5482	0.0367	0.5934	2.7681	0.8924	0.3699
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0118	0.0261	0.0811	0.1343	0.0118	0.0249	0.1255
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0	0.0	0.0049	0.0000	0.0	0.0214
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0102	0.0023	0.0068	0.0030	0.0016	0.0061	0.0189
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0111	0.0008	0.0408	0.0122	0.0038	0.0030	0.0188
38	AIRCRAFT & PARTS (SIC 372)	0.0001	0.0	0.2135	0.0000	0.0000	0.0	0.0120
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0	0.0001	0.0002	0.0	0.0013
41	INSTRUMENTS (SIC 38)	0.0845	0.0074	0.0215	0.0043	0.5941	0.0028	0.1067
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0666	0.0085	0.0549	0.1497	0.0177	0.0017	0.5262
43	TRANSPORTATION SERVICES (SIC 40-7)	0.8916	1.5134	0.4370	1.3040	0.9866	1.9827	0.7970
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	3.5401	1.1048	1.1335	2.1626	0.9975	4.2564	1.3447
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	2.4955	2.6916	2.1281	3.2722	4.0367	6.3476	3.4191
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.9122	1.2635	2.8794	0.9876	1.3127	1.8735	1.1335
47	BUSINESS SERVICES (SIC 73, 81, 89)	1.0041	1.8320	1.9860	1.6584	5.1279	2.0618	1.9476
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.3298	0.4622	0.4723	0.2012	0.3655	0.1462	0.2829
49	GOVERNMENT ENTERPRISES	0.0749	0.1056	0.7612	0.1018	0.1657	0.0988	0.1245
50	UNALLOCATED INDUSTRIES	0.7754	0.4307	1.1919	0.7016	0.9624	0.5553	0.7906
51	TOTAL LOCAL PURCHASES	44.9491	38.5644	27.3363	27.8335	38.7606	34.9115	23.3691
52	HOUSEHOLDS	20.4146	22.7364	42.6772	17.1685	21.1944	17.9714	30.0990
53	GROSS SAVINGS	5.0330	3.3991	7.3101	10.8559	5.3479	4.2826	7.2443
54	CITY & COUNTY GOVERNMENT	0.5756	0.3755	0.5793	1.2945	0.6605	0.5840	0.9808
55	STATE GOVERNMENT	0.5235	0.2848	0.5170	0.8143	0.4092	0.1666	0.6799
56	FEDERAL GOVERNMENT	4.7794	2.6147	4.0528	8.1960	3.8287	1.5608	5.4553
57	IMPORTS	23.7249	32.0251	17.5273	33.8374	29.7986	40.5230	32.1716
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
		29	30	31	32	33	34	35
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0	11.4007	0.2851	0.0105	0.0027	0.0016	0.0
6	OTHER MINING (SIC 10-3, 147)	0.0001	0.0447	0.0086	0.0000	0.0002	0.0	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.1211	0.7258	0.4459	0.3148	0.1647	0.1526	0.1609
8	MEAT PRODUCTS (SIC 201)	1.4899	0.0	0.0	0.0	0.0	0.0	0.0
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0000	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0016	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.0	0.0017	0.0	0.0	0.0	0.0693	0.0
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0009	0.0033	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0044	0.0035	0.0	0.0	0.0004	0.0231	0.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.4813	0.0103	0.0	0.0	0.0016	0.0135	0.0103
15	YARN & THREAD MILLS (SIC 2269, 228)	0.6502	0.0	0.0	0.0887	0.0	0.0281	0.0
16	FLOOR COVERINGS (SIC 227)	0.1669	0.0000	0.0000	0.0	0.0000	0.0000	0.0000
17	MISC. TEXTILE GOODS (SIC 229)	0.0274	0.0037	0.0	0.0	0.0471	0.0092	0.0069
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	1.6322	0.7584	0.0334	0.0117	0.0431	0.0328	0.0216
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.4787	0.4360	0.2629	0.1983	0.3422	1.3769	0.1504
20	FURNITURE & FIXTURES (SIC 25)	0.0098	0.1317	0.0	0.0110	0.2625	0.0423	0.0022
21	PULP & PAPER MILLS (SIC 261-3)	0.1352	0.0012	0.0008	0.0513	0.0182	0.0235	0.0013
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0140	0.1289	0.0074	0.0161	0.1102	0.0549	0.0564
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.5662	0.7379	0.0333	0.0538	0.6644	0.2260	0.1127
24	PRINTING & PUBLISHING (SIC 27)	0.0303	0.0051	0.0034	0.0034	0.1808	0.0111	0.0098
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0323	0.6267	0.2024	0.1098	0.2605	0.1416	0.1124
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.4251	0.1690	0.0079	0.1490	0.5130	0.7357	0.1524
27	PETROLEUM PRODUCTS (SIC 29)	0.0002	0.0495	0.0003	0.0002	0.0068	0.0005	0.0008
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	2.8682	0.3530	0.0364	0.0433	0.3006	0.6944	1.0096
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.6673	0.0048	0.0053	0.0018	0.0031	0.0228	0.0009
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0026	2.8836	0.0832	0.0132	0.6178	0.1485	0.1095
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0000	0.2014	0.5812	0.4165	2.0534	1.1796	0.4356
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0017	0.0076	0.3753	2.9481	4.8535	0.5581	0.8602
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0841	0.2929	2.1182	0.2341	1.4960	2.7127	1.0389
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0085	0.1891	1.9920	0.4522	1.3532	3.1081	1.1420
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0	0.2213	0.0031	0.0154	0.1735	0.6351	0.2745
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0028	0.0201	0.0685	0.5369	0.0677	0.4468	0.6338
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0025	0.0869	1.5433	1.0333	0.6799	2.0452	0.2889
38	AIRCRAFT & PARTS (SIC 372)	0.0	0.0001	0.0001	0.0	0.0173	0.1370	0.0009
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0	0.0	0.2484	0.0745	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0	0.0	0.0042	0.0026	0.1462	0.2209	0.0029
41	INSTRUMENTS (SIC 38)	0.9737	0.0131	0.0103	0.0940	0.0715	0.2551	0.2514
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.2749	0.0144	0.2309	0.0072	0.6327	0.1491	0.0301
43	TRANSPORTATION SERVICES (SIC 40-7)	0.4270	2.8719	2.4646	0.6201	0.7328	0.4643	0.5015
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.6087	4.0564	3.7456	1.1995	0.9872	0.7659	0.8945
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	2.8220	2.7987	4.4437	2.3097	2.9127	2.8914	2.7990
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	1.0247	1.4782	1.4795	0.7433	1.4306	1.3342	1.8389
47	BUSINESS SERVICES (SIC 73, 81, 89)	1.6244	2.1322	1.8052	1.0050	1.2849	1.2857	1.3071
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.1387	0.5413	0.2600	0.0987	0.2833	0.2344	0.2658
49	GOVERNMENT ENTERPRISES	0.2538	0.2262	0.1418	0.0599	0.0865	0.1182	0.1031
50	UNALLOCATED INDUSTRIES	0.4836	0.8308	4.3475	1.6205	0.6498	0.7109	0.8162
51	TOTAL LOCAL PURCHASES	18.5345	34.4585	27.0313	14.4739	23.7033	23.1389	15.4030
52	HOUSEHOLDS	34.2335	30.7323	30.2041	21.9473	28.6446	29.8100	32.3702
53	GROSS SAVINGS	7.3254	5.1195	4.2033	4.6037	5.5858	6.8618	8.4567
54	CITY & COUNTY GOVERNMENT	0.4212	0.7087	1.9077	0.4035	0.7765	0.5054	1.0064
55	STATE GOVERNMENT	0.6985	0.2544	0.1695	0.6227	0.5317	0.4694	0.3800
56	FEDERAL GOVERNMENT	6.0394	2.7473	1.5622	3.6979	4.4124	4.4480	6.4476
57	IMPORTS	32.7475	25.9793	34.9218	54.2509	36.3457	34.7665	35.9360
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
		36	37	38	39	40	41	42
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	FIELD CROPS (SIC 011)	0.0	0.0	0.0	0.0	0.0	0.1874	0.0000
3	OTHER CROPS (SIC 012, 019)	0.0	0.0	0.0	0.0	0.0	0.0	0.0405
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0281
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0015	0.0031	0.0	0.0	0.0	0.0	0.0171
6	OTHER MINING (SIC 10-3, 147)	0.0	0.0	0.0	0.0	0.0	0.0004	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0879	0.1352	0.2347	0.0655	0.2061	0.1965	0.2289
8	MEAT PRODUCTS (SIC 201)	0.0	0.0	0.0	0.0	0.0	0.0	0.1327
9	DAIRY PRODUCTS (SIC 202)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.0	0.0	0.0	0.0	0.0	0.0	0.0005
12	BEVERAGES (SIC 208)	0.0	0.0	0.0	0.0	0.0	0.0	0.0001
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0	0.0	0.0	0.0	0.0	0.0045	0.0222
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0081	0.0137	0.0263	0.0669	0.0	0.2616	0.3022
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0002	0.0	0.0	0.0	0.0	0.0623
16	FLOOR COVERINGS (SIC 227)	0.0000	0.0304	0.0216	0.2956	0.0004	0.0000	0.0
17	MISC. TEXTILE GOODS (SIC 229)	0.1159	0.0368	0.0	0.0	0.0623	0.0206	0.1472
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0256	0.3143	0.0233	0.0217	0.3287	0.2288	0.2728
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.1204	0.0545	0.0187	8.3111	0.8071	0.1371	1.4507
20	FURNITURE & FIXTURES (SIC 25)	0.1572	0.0048	0.1507	1.9802	0.2195	0.5482	0.1565
21	PULP & PAPER MILLS (SIC 261-3)	0.0215	0.0046	0.0001	0.0001	0.0001	0.2288	1.6983
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.1601	0.0025	0.0119	1.2253	0.0068	0.3601	0.0909
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.4864	0.0086	0.0003	0.0	0.0221	0.4735	0.6209
24	PRINTING & PUBLISHING (SIC 27)	0.0089	0.0010	0.0110	0.0019	0.0038	0.0314	0.4517
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.4488	0.0228	0.0994	0.0117	0.0290	0.4929	0.4359
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.1362	0.1149	0.0812	0.2664	0.1436	0.3371	0.5053
27	PETROLEUM PRODUCTS (SIC 29)	0.0012	0.0337	0.0005	0.0002	0.0004	0.0003	0.0067
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	1.6194	0.5147	0.1883	0.8699	0.6127	1.5960	1.7910
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0040	0.0004	0.0007	0.0002	0.0014	0.0480	0.1551
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.4007	0.0845	0.0261	0.2685	0.0605	0.2321	0.0971
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.3403	0.6474	0.0929	0.1696	1.4248	0.1637	0.2359
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	2.0910	0.2218	1.2327	4.6367	0.5959	0.3032	1.3899
33	FABRICATED METAL PRODUCTS (SIC 34)	2.1108	1.1033	0.4640	2.7124	1.3591	1.9990	1.5837
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	1.2209	0.9914	1.4186	0.0279	2.1109	0.7972	0.3364
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	2.4622	0.0140	0.0009	0.0	0.0479	0.0980	0.1220
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.8860	0.3951	0.8534	0.4777	0.1971	0.9380	0.1620
37	MOTOR VEHICLES & EQUIP. (SIC 371)	1.4200	1.5603	0.0271	0.3792	0.7377	0.9033	0.0553
38	AIRCRAFT & PARTS (SIC 372)	7.0004	0.0015	0.9401	0.0	2.8612	0.8601	0.0112
39	TRAILER COACHES (SIC 3791)	0.0	0.1044	0.0	0.3393	5.2723	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.1680	0.0078	0.0029	0.0045	0.6206	0.0875	0.4559
41	INSTRUMENTS (SIC 38)	0.9543	0.0223	0.1589	0.0053	0.0136	1.0144	0.1848
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.6879	0.0628	0.1797	0.0017	0.1332	0.7877	4.7131
43	TRANSPORTATION SERVICES (SIC 40-7)	0.4855	0.4791	0.4000	0.7600	0.8174	0.3705	0.5177
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.8043	0.3715	1.2825	0.3434	0.8546	1.1217	0.9726
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	3.6316	1.8957	2.6107	2.0456	3.9014	5.3068	3.3074
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.7861	0.3555	0.6443	0.7969	0.8016	1.2582	1.3823
47	BUSINESS SERVICES (SIC 73, 81, 89)	1.5472	0.6792	2.3762	0.9471	1.3914	4.1081	1.8491
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.2018	0.6909	0.7488	0.1396	0.1973	0.3586	0.3699
49	GOVERNMENT ENTERPRISES	0.1123	0.0728	0.1723	0.0728	0.1166	0.2086	0.2344
50	UNALLOCATED INDUSTRIES	0.7120	0.2841	1.0725	0.9093	0.7837	1.2593	0.8623
51	TOTAL LOCAL PURCHASES	31.4263	11.3415	15.5734	28.1542	26.7430	27.3295	27.4605
52	HOUSEHOLDS	27.0555	20.4645	24.6939	21.3952	30.2395	24.6894	30.5200
53	GROSS SAVINGS	4.9829	15.5387	4.6928	3.7712	3.0049	11.0108	6.4694
54	CITY & COUNTY GOVERNMENT	0.2986	0.3259	0.2395	0.3139	0.2682	0.4748	1.0189
55	STATE GOVERNMENT	0.3823	0.9624	0.8574	0.3722	0.1803	0.5012	0.6961
56	FEDERAL GOVERNMENT	3.2292	14.4461	1.4978	3.0153	2.6773	3.8141	6.1743
57	IMPORTS	32.6252	36.9209	52.4452	42.9780	36.8868	32.1803	27.6608
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE)						
		43	44	45	46	47	48	49
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0095	0.0	0.0	0.6151	0.0	0.0199	0.0
2	FIELD CROPS (SIC 011)	0.0592	0.0	0.0	0.8111	0.0	0.0	0.0009
3	OTHER CROPS (SIC 012, 019)	0.0128	0.0	0.0	0.1431	0.0	0.0150	0.0080
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0	0.0	0.1176	0.0147	0.0	0.0001	0.0051
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0	0.0008	0.0081	0.0324	0.0058	0.0020	0.0
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0004	0.0003	0.0012	0.0001	0.0	0.0004
7	CONTRACT CONSTRUCTION (SIC 15-7)	2.2571	3.1701	0.2855	2.5580	0.1055	1.9754	12.0754
8	MEAT PRODUCTS (SIC 201)	0.1285	0.0004	0.0670	0.0062	0.0	0.0818	0.0
9	DAIRY PRODUCTS (SIC 202)	0.0659	0.0000	0.0524	0.0050	0.0	0.0412	0.0
10	CANNED & PRESERVED FOODS (SIC 203)	0.0409	0.0000	0.0288	0.0063	0.0	0.0261	0.0
11	GRAIN MILL PRODUCTS (SIC 204)	0.0049	0.0000	0.0639	0.0073	0.0033	0.0210	0.0
12	BEVERAGES (SIC 208)	0.0358	0.0001	0.0684	0.0389	0.0	0.0004	0.0
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.1584	0.0008	0.1814	0.0207	0.0	0.0583	0.0
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0	0.0118	0.0155	0.0338	0.0034	0.0196	0.0098
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0	0.0044	0.0268	0.0376	0.0	0.0	0.0021
16	FLOOR COVERINGS (SIC 227)	0.0106	0.0085	0.0635	0.0493	0.0003	0.0004	0.0003
17	MISC. TEXTILE GOODS (SIC 229)	0.0016	0.0000	0.0089	0.0091	0.0	0.0027	0.0144
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0079	0.0058	0.1479	0.0414	0.0	0.1273	0.0364
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0025	0.0074	0.0889	0.0311	0.0	0.0	0.0000
20	FURNITURE & FIXTURES (SIC 25)	0.0	0.0001	0.0288	0.0065	0.0	0.0	0.0002
21	PULP & PAPER MILLS (SIC 261-3)	0.0006	0.0476	0.0701	0.1238	0.0067	0.0000	0.1063
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0086	0.0241	0.0631	0.0363	0.0442	0.0247	0.0571
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0094	0.0050	0.1729	0.0101	0.0169	0.0153	0.0008
24	PRINTING & PUBLISHING (SIC 27)	0.0342	0.0028	0.0654	0.1361	13.5400	0.2078	0.0843
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0291	0.0543	0.1074	0.1462	0.1789	0.1402	0.3790
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0075	0.0027	0.1421	0.0394	0.2557	0.3287	0.0309
27	PETROLEUM PRODUCTS (SIC 29)	0.0090	0.0012	0.0133	0.0103	0.0006	0.0010	0.0007
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0954	0.0084	0.0866	0.0318	0.0083	0.0934	0.0260
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0000	0.0001	0.0064	0.0022	0.0000	0.0038	0.0010
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0026	0.0030	0.0955	0.0284	0.0011	0.1021	0.0006
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0736	0.0135	0.0041	0.0026	0.0	0.0	0.0000
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0018	0.0021	0.0084	0.0036	0.0	0.0005	0.0001
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0294	0.0000	0.0946	0.0249	0.0	0.0757	0.0042
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0260	0.0041	0.0849	0.0610	0.3027	0.0823	0.0067
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0055	0.0013	0.0231	0.0371	0.0210	0.0032	0.0000
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.1062	0.0052	0.0367	0.0067	0.0061	0.1425	0.0073
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0190	0.0027	0.0225	0.0171	0.0010	0.0630	0.0098
38	AIRCRAFT & PARTS (SIC 372)	1.2130	0.0	0.2322	0.0139	0.0	0.0	0.0
39	TRAILER COACHES (SIC 3791)	0.0	0.0	0.0180	0.0117	0.0	0.0	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0252	0.0	0.0035	0.0023	0.0037	0.0009	0.0000
41	INSTRUMENTS (SIC 38)	0.0003	0.0190	0.0308	0.0041	0.0101	0.0149	0.0002
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0003	0.0000	0.0556	0.0069	0.6184	0.1076	0.0014
43	TRANSPORTATION SERVICES (SIC 40-7)	3.4308	0.6216	0.3719	0.2205	0.1337	0.2314	2.9765
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	1.2647	8.1351	1.7477	1.4102	11.4856	2.7384	2.5484
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	3.2803	0.6926	1.4918	1.4167	2.5771	3.2614	0.6351
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	3.1018	1.3762	3.9853	16.0877	4.0511	6.0730	1.8422
47	BUSINESS SERVICES (SIC 73, 81, 89)	1.8133	1.6600	2.7052	3.1372	5.4145	2.4148	2.4594
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	1.6761	1.7102	0.9843	1.3408	1.8285	3.6944	0.4087
49	GOVERNMENT ENTERPRISES	1.3185	6.3497	1.0544	1.4657	1.9639	0.7431	0.0708
50	UNALLOCATED INDUSTRIES	0.7023	0.5225	0.7344	0.8829	2.4764	1.5396	0.5791
51	TOTAL LOCAL PURCHASES	21.0803	24.4759	15.7659	31.1867	45.0646	24.4948	24.3897
52	HOUSEHOLDS	49.0481	26.8643	49.4785	45.5497	37.7508	34.4869	45.0462
53	GROSS SAVINGS	6.7160	20.6698	7.8486	11.8907	5.1955	15.5957	19.7210
54	CITY & COUNTY GOVERNMENT	0.6109	3.4037	1.3059	2.5094	0.3272	3.2258	0.0
55	STATE GOVERNMENT	1.0673	0.6731	12.9517	1.7401	0.3445	1.4228	0.0
56	FEDERAL GOVERNMENT	3.2501	9.1998	6.2075	1.8893	2.7056	7.7925	0.0
57	IMPORTS	18.2273	14.7133	6.4419	5.2340	8.6118	12.9815	10.8411
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

	SELLING INDUSTRY	PURCHASING INDUSTRY NUMBER (SEE LEFT FOR TITLE) 50
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.3536
2	FIELD CROPS (SIC 011)	0.0
3	OTHER CROPS (SIC 012, 019)	0.2574
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0446
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0
6	OTHER MINING (SIC 10-3, 147)	0.0
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0
8	MEAT PRODUCTS (SIC 201)	2.7142
9	DAIRY PRODUCTS (SIC 202)	1.0063
10	CANNED & PRESERVED FOODS (SIC 203)	0.3577
11	GRAIN MILL PRODUCTS (SIC 204)	0.0380
12	BEVERAGES (SIC 208)	1.1885
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.9263
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.2595
15	YARN & THREAD MILLS (SIC 2269, 228)	0.1138
16	FLOOR COVERINGS (SIC 227)	0.0
17	MISC. TEXTILE GOODS (SIC 229)	0.0
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0613
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0169
20	FURNITURE & FIXTURES (SIC 25)	0.0
21	PULP & PAPER MILLS (SIC 261-3)	0.0209
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.3398
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.1589
24	PRINTING & PUBLISHING (SIC 27)	8.5732
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0128
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.1163
27	PETROLEUM PRODUCTS (SIC 29)	0.0002
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0756
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0550
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0049
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0918
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.7045
33	FABRICATED METAL PRODUCTS (SIC 34)	0.3702
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.3910
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0171
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0721
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.1434
38	AIRCRAFT & PARTS (SIC 372)	0.1666
39	TRAILER COACHES (SIC 3791)	0.0
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0218
41	INSTRUMENTS (SIC 38)	0.0424
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.5703
43	TRANSPORTATION SERVICES (SIC 40-7)	10.0775
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	4.0175
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	8.8903
49	GOVERNMENT ENTERPRISES	0.0
50	UNALLOCATED INDUSTRIES	0.0
51	TOTAL LOCAL PURCHASES	42.2720
52	HOUSEHOLDS	0.0
53	GROSS SAVINGS	0.0
54	CITY & COUNTY GOVERNMENT	0.0
55	STATE GOVERNMENT	0.0
56	FEDERAL GOVERNMENT	0.0
57	IMPORTS	57.7280
58	TOTAL PURCHASES AND PAYMENTS	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

		FINAL DEMAND					
	TOTAL LOCAL SALES	PERSONAL CONSUMPTION EXPENDITURES	GROSS PRIVATE INVESTMENT	LOCAL GOVERNMENT	STATE GOVERNMENT	---FEDERAL GOVERNMENT--- (DEFENSE)	(OTHER)
1 LIVESTOCK & LIVESTOCK PROD. (SIC 013)	1.5395	0.3764	0.0	0.0193	0.0158	0.0015	0.0026
2 FIELD CROPS (SIC 011)	0.3369	0.0018	0.0	0.0083	0.0056	0.0	3.4700
3 OTHER CROPS (SIC 012, 019)	0.1252	0.1796	0.0	0.0295	0.0245	0.0021	0.0060
4 FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.2835	0.0604	0.0	0.0059	0.0030	0.0131	0.0000
5 STONE & CLAY MINING (SIC 14 EXC 147)	0.2428	0.0026	0.0	0.0	0.0	0.0050	0.0
6 OTHER MINING (SIC 10-3, 147)	0.0068	0.0000	0.0	0.0004	0.0004	0.2076	0.0049
7 CONTRACT CONSTRUCTION (SIC 15-7)	1.0128	0.0	49.0048	20.8899	19.8271	2.4588	2.4422
8 MEAT PRODUCTS (SIC 201)	0.1643	1.3224	0.0	0.1370	0.1234	0.0554	0.0154
9 DAIRY PRODUCTS (SIC 202)	0.0729	0.8683	0.0	0.2118	0.1288	0.0415	0.0377
10 CANNED & PRESERVED FOODS (SIC 203)	0.0464	0.3916	0.0	0.0369	0.0336	0.0087	0.0043
11 GRAIN MILL PRODUCTS (SIC 204)	0.4156	0.1151	0.0	0.0129	0.0089	0.0041	0.0265
12 BEVERAGES (SIC 208)	0.1416	0.9597	0.0	0.0136	0.0091	0.0071	0.0016
13 FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.2485	1.3177	0.0	0.0718	0.0661	0.0192	0.0257
14 FABRIC MILLS (SIC 221-4, 2261-2)	0.6070	0.0353	0.0	0.0082	0.0074	0.0233	0.0002
15 YARN & THREAD MILLS (SIC 2269, 228)	1.1044	0.0066	0.0	0.0000	0.0000	0.0	0.0000
16 FLOOR COVERINGS (SIC 227)	0.1665	0.0803	0.0429	0.0002	0.0001	0.0021	0.0006
17 MISC. TEXTILE GOODS (SIC 229)	0.2636	0.0088	0.0	0.0000	0.0000	0.0023	0.0015
18 FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.2607	0.8058	0.0	0.0353	0.0343	0.0792	0.0217
19 LUMBER & WOOD PRODUCTS (SIC 24)	0.7301	0.0222	0.0042	0.0042	0.0032	0.0069	0.0018
20 FURNITURE & FIXTURES (SIC 25)	0.0630	0.2919	1.1473	0.1725	0.0981	0.0195	0.0233
21 PULP & PAPER MILLS (SIC 261-3)	0.6382	0.0041	0.0	0.0225	0.0138	0.0056	0.0116
22 PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.1242	0.0113	0.0	0.0096	0.0090	0.0107	0.0081
23 PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.3053	0.0057	0.0	0.0470	0.0388	0.0064	0.0012
24 PRINTING & PUBLISHING (SIC 27)	0.5782	0.2694	0.0	0.2625	0.1421	0.1506	0.0003
25 CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.4986	0.0240	0.0	0.1477	0.1324	0.6287	0.0479
26 PLASTICS DRUGS & PAINTS (SIC 282-5)	0.2804	0.3169	0.0	0.1685	0.0971	0.0490	0.0255
27 PETRCLEUM PRODUCTS (SIC 29)	0.0553	0.0023	0.0	0.0008	0.0005	0.4452	0.0348
28 RUBBER & PLASTICS PRODUCTS (SIC 30)	0.2782	0.0838	0.0072	0.0607	0.0543	0.1186	0.0066
29 LEATHER & LEATHER PRODUCTS (SIC 31)	0.0073	0.1126	0.0	0.0000	0.0000	0.0030	0.0006
30 STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.5982	0.0134	0.0	0.0081	0.0059	0.0254	0.0038
31 PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.1022	0.0001	0.0	0.0003	0.0002	0.0339	0.0014
32 NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.2236	0.0002	0.0027	0.0000	0.0000	0.0931	0.0028
33 FABRICATED METAL PRODUCTS (SIC 34)	0.5957	0.0308	0.4861	0.0143	0.0070	0.0886	0.0191
34 MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.2513	0.0169	2.8910	0.1612	0.0868	0.4948	0.0849
35 ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0448	0.0003	0.2775	0.0048	0.0033	0.1684	0.0181
36 MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.1237	0.0352	0.2146	0.0201	0.0160	0.3635	0.0503
37 MOTOR VEHICLES & EQUIP. (SIC 371)	0.1088	0.2109	0.7532	0.0613	0.0383	0.4507	0.0350
38 AIRCRAFT & PARTS (SIC 372)	0.1594	0.0095	0.6686	0.0001	0.0001	43.4905	0.1529
39 TRAILER COACHES (SIC 3791)	0.0214	0.5796	0.0773	0.0	0.0	0.0	0.0001
40 OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0115	0.0066	0.2140	0.0026	0.0013	0.0148	0.0103
41 INSTRUMENTS (SIC 38)	0.0396	0.0349	0.0392	0.0097	0.0088	0.0465	0.0207
42 MISC. MANUFACTURING (SIC 39, 19, 21)	0.1176	0.0428	0.2321	0.0175	0.0095	0.2625	0.0050
43 TRANSPORTATION SERVICES (SIC 40-7)	0.9031	0.7355	0.3682	0.5778	0.3641	0.9153	0.1063
44 COMMUNICATIONS & UTILITIES (SIC 48-9)	1.9265	2.4231	0.6735	1.8674	1.1346	0.4438	0.0371
45 WHOLESALE & RETAIL TRADE (SIC 50-9)	3.1303	16.1564	5.8420	0.7954	0.5577	0.4840	0.0973
46 FINANCE, INS., REAL ESTATE (SIC 60-6)	3.8615	11.6128	0.6354	2.1088	1.3123	0.0712	6.9057
47 BUSINESS SERVICES (SIC 73, 81, 89)	2.2359	0.5840	0.0	1.1368	0.8060	1.4067	0.3320
48 CTHER SERVICES (SIC 70-2, 75-80, 82-6)	1.0798	11.2346	0.0	1.5695	1.6016	1.2073	0.6677
49 GOVERNMENT ENTERPRISES	0.7797	0.2744	0.0	0.2325	0.1923	0.0714	0.1699
50 UNALLOCATED INDUSTRIES	0.8016	0.0	0.0	0.5192	0.3973	0.0615	0.1354
51 TOTAL LOCAL PURCHASES	27.7145	51.6785	63.5819	31.4845	27.4204	54.5695	15.0782
52 HOUSEHOLDS	33.2122	0.6283	0.0	57.5198	35.7385	45.4305	65.4921
53 GROSS SAVINGS	8.3954	5.4933	0.0	0.0	0.0	0.0	0.0
54 CITY & COUNTY GOVERNMENT	1.3356	2.3818	0.0	0.0	28.2852	0.0	2.0151
55 STATE GOVERNMENT	2.3882	2.1549	0.0	1.5109	0.0	0.0	17.4146
56 FEDERAL GOVERNMENT	4.2654	13.8525	0.0	0.0	1.2098	0.0	0.0
57 IMPORTS	22.6887	23.8106	36.4181	9.4848	7.3460	0.0	0.0
58 TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

TABLE 2. DIRECT REQUIREMENTS PER DOLLAR OF GROSS OUTPUT, GEORGIA, 1970
(IN PERCENT)

		FINAL DEMAND		
		NET EXPORTS	TOTAL FINAL DEMAND	TOTAL SALES
1	LIVESTOCK & LIVESTOCK PRCD. (SIC 013)	1.0277	0.5196	1.0057
2	FIELD CROPS (SIC 011)	1.5884	0.7744	0.5659
3	OTHER CROPS (SIC 012, 019)	0.4237	0.2259	0.1779
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.4628	0.1904	0.2348
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.6882	0.2469	0.2450
6	OTHER MINING (SIC 10-3, 147)	0.0373	0.0238	0.0157
7	CONTRACT CONSTRUCTION (SIC 15-7)	2.5031	5.4588	3.3396
8	MEAT PRODUCTS (SIC 201)	3.0158	1.6213	0.9268
9	DAIRY PRODUCTS (SIC 202)	0.0467	0.3829	0.2351
10	CANNED & PRESERVED FOODS (SIC 203)	0.7973	0.4453	0.2552
11	GRAIN MILL PRODUCTS (SIC 204)	0.6855	0.2935	0.3517
12	BEVERAGES (SIC 208)	1.2412	0.8299	0.5018
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	2.1043	1.2882	0.7927
14	FABRIC MILLS (SIC 221-4, 2261-2)	5.5765	2.0061	1.3392
15	YARN & THREAD MILLS (SIC 2269, 228)	3.4496	1.2338	1.1721
16	FLOOR COVERINGS (SIC 227)	9.3462	3.3703	1.8432
17	MISC. TEXTILE GOODS (SIC 229)	1.6171	0.5809	0.4296
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	6.1985	2.5438	1.4555
19	LUMBER & WOOD PRODUCTS (SIC 24)	1.5718	0.5708	0.6468
20	FURNITURE & FIXTURES (SIC 25)	0.9487	0.5325	0.3087
21	PULP & PAPER MILLS (SIC 261-3)	3.4506	1.2354	0.9508
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	1.2614	0.4564	0.2981
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	1.2633	0.4568	0.3846
24	PRINTING & PUBLISHING (SIC 27)	0.5771	0.3370	0.4520
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	1.5512	0.6077	0.5557
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	1.1508	0.5521	0.4226
27	PETROLEUM PRODUCTS (SIC 29)	0.1404	0.0750	0.0656
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.9080	0.3688	0.3256
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.4066	0.1905	0.1032
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	1.2132	0.4404	0.5156
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.5558	0.2002	0.1535
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.6407	0.2336	0.2288
33	FABRICATED METAL PRODUCTS (SIC 34)	1.8676	0.7123	0.6567
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	1.7984	0.8486	0.5639
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	1.1711	0.4432	0.2533
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.7818	0.3273	0.2303
37	MOTOR VEHICLES & EQUIP. (SIC 371)	4.8811	1.8967	1.0445
38	AIRCRAFT & PARTS (SIC 372)	3.4239	3.4057	1.8584
39	TRAILER COACHES (SIC 3791)	1.1137	0.6347	0.3424
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.2765	0.1148	0.0656
41	INSTRUMENTS (SIC 38)	0.4410	0.1778	0.1119
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.8372	0.3431	0.2356
43	TRANSPORTATION SERVICES (SIC 40-7)	5.9844	2.5390	1.7592
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.9491	1.4884	1.6973
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	6.8868	9.3571	6.3891
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	5.5870	7.2403	5.6298
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.9283	0.7290	1.4473
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	5.9894	6.8730	4.1116
49	GOVERNMENT ENTERPRISES	0.6334	0.3662	0.5633
50	UNALLOCATED INDUSTRIES	0.0	0.0462	0.4063
51	TOTAL LOCAL PURCHASES	100.0000	65.8364	47.6654
52	HOUSEHOLDS	0.0	9.9339	21.0296
53	GROSS SAVINGS	0.0	2.2074	5.1569
54	CITY & COUNTY GOVERNMENT	0.0	2.2062	1.7912
55	STATE GOVERNMENT	0.0	1.9572	2.1626
56	FEDERAL GOVERNMENT	0.0	5.6147	4.9715
57	IMPORTS	0.0	12.2442	17.2226
58	TOTAL PURCHASES AND PAYMENTS	100.0000	100.0000	100.0000

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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 & LIVESTOCK PROD. (SIC 013)	1.0605	0.0486	0.0387	0.1256	0.0007	0.0008	0.0009
2	FIELD CROPS (SIC 011)	0.0682	1.0201	0.0050	0.0661	0.0005	0.0006	0.0005
3	OTHER CROPS (SIC 012, 019)	0.0025	0.0020	1.0280	0.0499	0.0002	0.0003	0.0030
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0417	0.0374	0.0424	1.0474	0.0002	0.0004	0.0022
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0008	0.0034	0.0032	0.0008	1.0142	0.0100	0.0178
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0001	0.0001	0.0000	0.0002	1.0354	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0108	0.0162	0.0171	0.0047	0.0132	0.0134	1.0045
8	MEAT PRODUCTS (SIC 201)	0.0013	0.0003	0.0004	0.0012	0.0004	0.0004	0.0004
9	DAIRY PRODUCTS (SIC 202)	0.0003	0.0001	0.0001	0.0002	0.0002	0.0001	0.0002
10	CANNED & PRESERVED FOODS (SIC 203)	0.0007	0.0001	0.0001	0.0003	0.0001	0.0001	0.0001
11	GRAIN MILL PRODUCTS (SIC 204)	0.1590	0.0078	0.0064	0.0333	0.0002	0.0002	0.0003
12	BEVERAGES (SIC 208)	0.0005	0.0002	0.0002	0.0006	0.0002	0.0002	0.0003
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0129	0.0015	0.0016	0.0183	0.0003	0.0004	0.0005
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0008	0.0005	0.0003	0.0004	0.0002	0.0002	0.0004
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0001	0.0001	0.0002	0.0004	0.0001	0.0001	0.0002
16	FLOOR COVERINGS (SIC 227)	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0004
17	MISC. TEXTILE GOODS (SIC 229)	0.0006	0.0006	0.0010	0.0125	0.0006	0.0001	0.0004
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0014	0.0005	0.0022	0.0008	0.0004	0.0002	0.0010
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0008	0.0011	0.0095	0.0050	0.0011	0.0059	0.0391
20	FURNITURE & FIXTURES (SIC 25)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0028
21	PULP & PAPER MILLS (SIC 261-3)	0.0011	0.0013	0.0016	0.0053	0.0010	0.0010	0.0024
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0005	0.0003	0.0003	0.0004	0.0006	0.0004	0.0034
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0020	0.0009	0.0017	0.0177	0.0005	0.0003	0.0015
24	PRINTING & PUBLISHING (SIC 27)	0.0024	0.0046	0.0048	0.0028	0.0043	0.0034	0.0088
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0039	0.0253	0.0250	0.0042	0.0053	0.0196	0.0033
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0008	0.0010	0.0011	0.0014	0.0008	0.0010	0.0053
27	PETROLEUM PRODUCTS (SIC 29)	0.0001	0.0002	0.0002	0.0001	0.0017	0.0002	0.0066
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0005	0.0009	0.0024	0.0007	0.0133	0.0015	0.0053
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0011	0.0017	0.0024	0.0008	0.0219	0.0017	0.0608
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0001	0.0002	0.0002	0.0004	0.0027	0.0017	0.0036
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0002	0.0002	0.0002	0.0010	0.0007	0.0007	0.0040
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0020	0.0019	0.0021	0.0156	0.0020	0.0022	0.0415
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0006	0.0031	0.0023	0.0009	0.0094	0.0211	0.0048
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0001	0.0001	0.0001	0.0004	0.0005	0.0017
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0002	0.0004	0.0005	0.0004	0.0007	0.0004	0.0051
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0001	0.0002	0.0002	0.0002	0.0011	0.0007	0.0007
38	AIRCRAFT & PARTS (SIC 372)	0.0003	0.0002	0.0003	0.0004	0.0003	0.0003	0.0009
39	TRAILER COACHES (SIC 3791)	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0001
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0000	0.0001	0.0001	0.0003	0.0000	0.0001	0.0001
41	INSTRUMENTS (SIC 38)	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0002
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0002	0.0003	0.0004	0.0003	0.0004	0.0003	0.0015
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0160	0.0058	0.0095	0.0128	0.0101	0.0140	0.0225
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0110	0.0135	0.0201	0.0067	0.0473	0.0453	0.0220
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0525	0.0307	0.0533	0.0535	0.0443	0.0240	0.1014
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0237	0.0728	0.0313	0.0310	0.0536	0.0598	0.0262
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0127	0.0291	0.0290	0.0089	0.0227	0.0181	0.0555
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0088	0.0085	0.0125	0.0079	0.0181	0.0073	0.0110
49	GOVERNMENT ENTERPRISES	0.0025	0.0032	0.0035	0.0024	0.0075	0.0073	0.0056
50	UNALLOCATED INDUSTRIES	0.0030	0.0034	0.0046	0.0134	0.0104	0.0085	0.0098
51	TOTAL LOCAL PURCHASES	1.5098	1.3506	1.3665	1.5577	1.3146	1.3101	1.4908

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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 & LIVESTOCK PROD. (SIC 013)	0.5792	0.4853	0.0250	0.0083	0.0024	0.0229	0.0002
2	FIELD CROPS (SIC 011)	0.0375	0.0315	0.0075	0.0641	0.0009	0.0161	0.0006
3	OTHER CROPS (SIC 012, 019)	0.0016	0.0016	0.0493	0.0014	0.0056	0.0056	0.0000
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0230	0.0193	0.0926	0.0037	0.0015	0.0025	0.0001
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0006	0.0011	0.0043	0.0025	0.0073	0.0020	0.0002
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0075	0.0096	0.0078	0.0075	0.0074	0.0063	0.0026
8	MEAT PRODUCTS (SIC 201)	1.0247	0.0048	0.0200	0.0074	0.0013	0.0346	0.0001
9	DAIRY PRODUCTS (SIC 202)	0.0002	1.1033	0.0023	0.0015	0.0024	0.0008	0.0000
10	CANNED & PRESERVED FOODS (SIC 203)	0.0024	0.0012	1.0102	0.0043	0.0105	0.0085	0.0000
11	GRAIN MILL PRODUCTS (SIC 204)	0.0883	0.0729	0.0072	1.1674	0.0012	0.0134	0.0001
12	BEVERAGES (SIC 208)	0.0005	0.0025	0.0257	0.0024	1.0681	0.0182	0.0001
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0134	0.0105	0.0399	0.0479	0.0215	1.0547	0.0002
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0005	0.0006	0.0002	0.0052	0.0002	0.0003	1.0640
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0001	0.0002	0.0002	0.0005	0.0001	0.0001	0.0349
16	FLOOR COVERINGS (SIC 227)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0015
17	MISC. TEXTILE GOODS (SIC 229)	0.0005	0.0004	0.0013	0.0003	0.0001	0.0017	0.0186
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0012	0.0023	0.0010	0.0076	0.0008	0.0005	0.0044
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0009	0.0018	0.0028	0.0009	0.0018	0.0018	0.0005
20	FURNITURE & FIXTURES (SIC 25)	0.0001	0.0001	0.0003	0.0001	0.0002	0.0001	0.0001
21	PULP & PAPER MILLS (SIC 261-3)	0.0015	0.0058	0.0063	0.0031	0.0036	0.0161	0.0016
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0005	0.0013	0.0024	0.0023	0.0011	0.0014	0.0029
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0036	0.0182	0.0174	0.0061	0.0082	0.0562	0.0025
24	PRINTING & PUBLISHING (SIC 27)	0.0028	0.0057	0.0099	0.0066	0.0082	0.0085	0.0013
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0025	0.0027	0.0038	0.0125	0.0132	0.0070	0.0095
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0007	0.0008	0.0020	0.0029	0.0028	0.0034	0.0023
27	PETROLEUM PRODUCTS (SIC 29)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0033	0.0011	0.0026	0.0010	0.0010	0.0095	0.0006
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0009	0.0040	0.0330	0.0014	0.0608	0.0104	0.0005
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0002	0.0001	0.0015	0.0001	0.0007	0.0002	0.0000
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0004	0.0003	0.0033	0.0002	0.0013	0.0005	0.0001
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0062	0.0025	0.0623	0.0014	0.0220	0.0041	0.0004
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0006	0.0009	0.0020	0.0012	0.0012	0.0010	0.0008
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0001	0.0003	0.0001	0.0002	0.0001	0.0000
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0002	0.0003	0.0003	0.0002	0.0003	0.0002	0.0000
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0001	0.0002	0.0006	0.0001	0.0004	0.0001	0.0000
38	AIRCRAFT & PARTS (SIC 372)	0.0004	0.0003	0.0007	0.0007	0.0005	0.0004	0.0001
39	TRAILER COACHES (SIC 3791)	0.0000	0.0000	0.0002	0.0000	0.0001	0.0000	0.0000
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0000	0.0000	0.0001	0.0000	0.0001	0.0000	0.0000
41	INSTRUMENTS (SIC 38)	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0002	0.0003	0.0009	0.0004	0.0006	0.0006	0.0001
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0202	0.0109	0.0336	0.0336	0.0226	0.0160	0.0058
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0105	0.0209	0.0219	0.0192	0.0214	0.0220	0.0091
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0432	0.0493	0.0897	0.0887	0.0518	0.0491	0.0205
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0176	0.0327	0.0259	0.0224	0.0342	0.0209	0.0074
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0119	0.0238	0.0424	0.0299	0.0378	0.0309	0.0070
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0078	0.0187	0.0091	0.0070	0.0152	0.0127	0.0017
49	GOVERNMENT ENTERPRISES	0.0026	0.0050	0.0054	0.0049	0.0055	0.0047	0.0018
50	UNALLOCATED INDUSTRIES	0.0035	0.0067	0.0085	0.0073	0.0074	0.0068	0.0026
51	TOTAL LOCAL PURCHASES	1.9240	1.9617	1.6841	1.5865	1.4558	1.4733	1.2074

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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	15	16	17	18	19	20	21
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0010	0.0006	0.0021	0.0008	0.0078	0.0011	0.0016
2	FIELD CROPS (SIC 011)	0.0007	0.0011	0.0261	0.0006	0.0039	0.0009	0.0005
3	OTHER CROPS (SIC 012, 019)	0.0001	0.0001	0.0006	0.0002	0.0209	0.0015	0.0013
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0002	0.0002	0.0012	0.0034	0.0572	0.0039	0.0032
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0003	0.0003	0.0003	0.0002	0.0004	0.0005	0.0055
6	OTHER MINING (SIC 10-3, 147)	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0067	0.0072	0.0058	0.0031	0.0071	0.0046	0.0130
8	MEAT PRODUCTS (SIC 201)	0.0003	0.0003	0.0003	0.0002	0.0003	0.0003	0.0013
9	DAIRY PRODUCTS (SIC 202)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005
10	CANNED & PRESERVED FOODS (SIC 203)	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0002
11	GRAIN MILL PRODUCTS (SIC 204)	0.0002	0.0002	0.0005	0.0002	0.0020	0.0003	0.0005
12	BEVERAGES (SIC 208)	0.0003	0.0003	0.0005	0.0001	0.0002	0.0003	0.0006
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0005	0.0005	0.0008	0.0003	0.0012	0.0004	0.0013
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0250	0.0297	0.0080	0.0947	0.0002	0.0210	0.0023
15	YARN & THREAD MILLS (SIC 2269, 228)	1.0802	0.2025	0.0261	0.0462	0.0002	0.0023	0.0002
16	FLOOR COVERINGS (SIC 227)	0.0411	1.0159	0.0093	0.0071	0.0004	0.0005	0.0001
17	MISC. TEXTILE GOODS (SIC 229)	0.0193	0.0325	1.0087	0.0072	0.0008	0.0137	0.0002
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0008	0.0006	0.0028	1.0589	0.0007	0.0015	0.0006
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0007	0.0009	0.0007	0.0011	1.1812	0.0788	0.0602
20	FURNITURE & FIXTURES (SIC 25)	0.0001	0.0001	0.0010	0.0002	0.0014	1.0118	0.0002
21	PULP & PAPER MILLS (SIC 261-3)	0.0032	0.0041	0.0025	0.0019	0.0029	0.0037	1.0973
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0005	0.0032	0.0008	0.0012	0.0012	0.0008	0.0113
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0084	0.0101	0.0043	0.0042	0.0019	0.0089	0.0011
24	PRINTING & PUBLISHING (SIC 27)	0.0036	0.0037	0.0028	0.0025	0.0032	0.0043	0.0071
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0153	0.0049	0.0049	0.0023	0.0023	0.0027	0.0407
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0116	0.0111	0.0259	0.0020	0.0024	0.0060	0.0035
27	PETRCLEUM PRODUCTS (SIC 29)	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0002
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0010	0.0121	0.0011	0.0042	0.0008	0.0331	0.0013
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0000	0.0000	0.0000	0.0005	0.0001	0.0002	0.0001
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0007	0.0007	0.0008	0.0003	0.0010	0.0022	0.0014
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0001	0.0001	0.0001	0.0001	0.0005	0.0040	0.0003
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0002	0.0002	0.0002	0.0003	0.0008	0.0025	0.0006
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0011	0.0011	0.0014	0.0007	0.0049	0.0202	0.0049
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0021	0.0012	0.0016	0.0005	0.0011	0.0024	0.0019
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0001
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0001	0.0001	0.0001	0.0001	0.0002	0.0003	0.0002
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0001	0.0001	0.0001	0.0001	0.0002	0.0004	0.0002
38	AIRCRAFT & PARTS (SIC 372)	0.0004	0.0004	0.0003	0.0002	0.0003	0.0004	0.0006
39	TRAILER COACHES (SIC 3791)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0021	0.0000
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000
41	INSTRUMENTS (SIC 38)	0.0002	0.0002	0.0009	0.0004	0.0002	0.0007	0.0002
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0003	0.0004	0.0006	0.0056	0.0005	0.0013	0.0006
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0157	0.0118	0.0088	0.0056	0.0167	0.0131	0.0318
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0236	0.0180	0.0172	0.0112	0.0173	0.0175	0.0480
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0571	0.0833	0.0765	0.0406	0.0336	0.0550	0.0589
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0192	0.0193	0.0154	0.0180	0.0223	0.0320	0.0217
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0203	0.0209	0.0143	0.0135	0.0182	0.0233	0.0264
48	CTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0048	0.0047	0.0044	0.0034	0.0068	0.0063	0.0090
49	GOVERNMENT ENTERPRISES	0.0044	0.0048	0.0037	0.0038	0.0034	0.0044	0.0071
50	UNALLOCATED INDUSTRIES	0.0067	0.0066	0.0080	0.0056	0.0059	0.0091	0.0355
51	TOTAL LOCAL PURCHASES	1.3788	1.5165	1.2920	1.3535	1.4348	1.4007	1.5052

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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	27	28
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0013	0.0008	0.0009	0.0029	0.0017	0.0007	0.0007
2	FIELD CROPS (SIC 011)	0.0009	0.0003	0.0005	0.0007	0.0007	0.0004	0.0013
3	OTHER CROPS (SIC 012, 019)	0.0015	0.0004	0.0003	0.0004	0.0004	0.0002	0.0002
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0040	0.0009	0.0006	0.0027	0.0007	0.0005	0.0005
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0054	0.0118	0.0008	0.0028	0.0030	0.0591	0.0017
6	OTHER MINING (SIC 10-3, 147)	0.0001	0.0001	0.0001	0.0046	0.0005	0.0001	0.0001
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0134	0.0094	0.0065	0.0090	0.0069	0.0139	0.0062
8	MEAT PRODUCTS (SIC 201)	0.0007	0.0006	0.0007	0.0041	0.0017	0.0005	0.0005
9	DAIRY PRODUCTS (SIC 202)	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0002
10	CANNED & PRESERVED FOODS (SIC 203)	0.0001	0.0001	0.0001	0.0008	0.0005	0.0001	0.0001
11	GRAIN MILL PRODUCTS (SIC 204)	0.0070	0.0002	0.0003	0.0017	0.0020	0.0005	0.0002
12	BEVERAGES (SIC 208)	0.0004	0.0003	0.0003	0.0012	0.0119	0.0005	0.0004
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0011	0.0006	0.0014	0.0096	0.0159	0.0011	0.0007
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0026	0.0007	0.0005	0.0004	0.0006	0.0003	0.0100
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0004	0.0001	0.0005	0.0002	0.0003	0.0001	0.0019
16	FLOOR COVERINGS (SIC 227)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005
17	MISC. TEXTILE GOODS (SIC 229)	0.0012	0.0001	0.0002	0.0002	0.0011	0.0002	0.0421
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0043	0.0007	0.0002	0.0023	0.0008	0.0009	0.0041
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0792	0.0166	0.0088	0.0055	0.0041	0.0054	0.0055
20	FURNITURE & FIXTURES (SIC 25)	0.0002	0.0001	0.0018	0.0001	0.0002	0.0001	0.0006
21	PULP & PAPER MILLS (SIC 261-3)	0.2085	0.2682	0.1158	0.0182	0.0247	0.0124	0.0049
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	1.0029	0.0060	0.0105	0.0022	0.0018	0.0430	0.0047
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0377	1.0165	0.0070	0.0038	0.0124	0.0084	0.0098
24	PRINTING & PUBLISHING (SIC 27)	0.0162	0.0093	1.0285	0.0048	0.0116	0.0060	0.0049
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0309	0.0133	0.0213	1.0991	0.1160	0.0242	0.0248
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0040	0.0018	0.0019	0.0266	1.0288	0.0193	0.0158
27	PETROLEUM PRODUCTS (SIC 29)	0.0007	0.0001	0.0001	0.0025	0.0010	1.0021	0.0002
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0178	0.0021	0.0027	0.0023	0.0232	0.0026	1.0103
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0001	0.0000	0.0000	0.0001	0.0000	0.0000	0.0006
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0014	0.0019	0.0007	0.0060	0.0112	0.0182	0.0046
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0003	0.0003	0.0002	0.0018	0.0011	0.0006	0.0007
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0027	0.0047	0.0004	0.0008	0.0019	0.0009	0.0017
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0035	0.0073	0.0015	0.0083	0.0309	0.0108	0.0051
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0009	0.0012	0.0014	0.0021	0.0013	0.0014	0.0018
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0003
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0003	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0003	0.0002	0.0005	0.0003	0.0005	0.0003	0.0004
38	AIRCRAFT & PARTS (SIC 372)	0.0004	0.0005	0.0025	0.0004	0.0005	0.0006	0.0004
39	TRAILER COACHES (SIC 3791)	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
41	INSTRUMENTS (SIC 38)	0.0010	0.0002	0.0003	0.0003	0.0063	0.0003	0.0013
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0012	0.0005	0.0010	0.0021	0.0014	0.0005	0.0060
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0196	0.0253	0.0109	0.0183	0.0168	0.0255	0.0117
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0541	0.0294	0.0239	0.0332	0.0275	0.0598	0.0223
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0456	0.0463	0.0331	0.0441	0.0566	0.0764	0.0444
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0227	0.0260	0.0423	0.0202	0.0282	0.0353	0.0205
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0224	0.0297	0.0286	0.0258	0.0653	0.0320	0.0267
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0089	0.0096	0.0094	0.0060	0.0094	0.0073	0.0063
49	GOVERNMENT ENTERPRISES	0.0065	0.0054	0.0114	0.0050	0.0065	0.0075	0.0044
50	UNALLOCATED INDUSTRIES	0.0170	0.0148	0.0179	0.0106	0.0153	0.0099	0.0107
51	TOTAL LOCAL PURCHASES	1.6521	1.5652	1.3989	1.3946	1.5538	1.4907	1.3232

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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) 29	30	31	32	33	34	35
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0091	0.0007	0.0015	0.0006	0.0005	0.0006	0.0005
2	FIELD CROPS (SIC 011)	0.0008	0.0004	0.0004	0.0002	0.0003	0.0004	0.0003
3	OTHER CROPS (SIC 012, 019)	0.0002	0.0002	0.0003	0.0001	0.0002	0.0004	0.0001
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0008	0.0005	0.0004	0.0002	0.0004	0.0010	0.0002
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0002	0.1195	0.0033	0.0003	0.0011	0.0004	0.0003
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0034	0.0136	0.0089	0.0050	0.0043	0.0039	0.0038
8	MEAT PRODUCTS (SIC 201)	0.0156	0.0005	0.0014	0.0006	0.0004	0.0004	0.0003
9	DAIRY PRODUCTS (SIC 202)	0.0001	0.0002	0.0006	0.0002	0.0002	0.0001	0.0001
10	CANNED & PRESERVED FOODS (SIC 203)	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001
11	GRAIN MILL PRODUCTS (SIC 204)	0.0014	0.0002	0.0003	0.0001	0.0002	0.0010	0.0001
12	BEVERAGES (SIC 208)	0.0002	0.0003	0.0007	0.0003	0.0003	0.0003	0.0002
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0005	0.0005	0.0007	0.0003	0.0004	0.0007	0.0003
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0073	0.0010	0.0003	0.0001	0.0003	0.0004	0.0003
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0084	0.0004	0.0002	0.0011	0.0002	0.0004	0.0001
16	FLOOR COVERINGS (SIC 227)	0.0022	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
17	MISC. TEXTILE GOODS (SIC 229)	0.0019	0.0004	0.0001	0.0001	0.0007	0.0005	0.0006
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0177	0.0085	0.0006	0.0003	0.0007	0.0006	0.0004
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0064	0.0065	0.0042	0.0029	0.0058	0.0177	0.0025
20	FURNITURE & FIXTURES (SIC 25)	0.0002	0.0015	0.0001	0.0002	0.0028	0.0006	0.0001
21	PULP & PAPER MILLS (SIC 261-3)	0.0040	0.0034	0.0015	0.0014	0.0035	0.0020	0.0012
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0005	0.0017	0.0005	0.0004	0.0014	0.0009	0.0008
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0066	0.0082	0.0009	0.0008	0.0074	0.0031	0.0016
24	PRINTING & PUBLISHING (SIC 27)	0.0041	0.0057	0.0078	0.0036	0.0056	0.0038	0.0036
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0023	0.0086	0.0030	0.0018	0.0043	0.0033	0.0021
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0053	0.0025	0.0008	0.0019	0.0060	0.0085	0.0022
27	PETROLEUM PRODUCTS (SIC 29)	0.0000	0.0008	0.0001	0.0001	0.0001	0.0001	0.0001
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0298	0.0057	0.0011	0.0008	0.0039	0.0081	0.0107
29	LEATHER & LEATHER PRODUCTS (SIC 31)	1.0068	0.0001	0.0001	0.0000	0.0001	0.0003	0.0000
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0005	1.0332	0.0018	0.0006	0.0070	0.0023	0.0016
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0001	0.0026	1.0068	0.0046	0.0216	0.0132	0.0049
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0003	0.0006	0.0057	1.0309	0.0515	0.0080	0.0099
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0018	0.0043	0.0233	0.0034	1.0172	0.0300	0.0117
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0005	0.0036	0.0217	0.0054	0.0153	1.0335	0.0125
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0024	0.0003	0.0004	0.0020	0.0068	1.0031
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0002	0.0005	0.0011	0.0057	0.0012	0.0050	0.0066
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0002	0.0012	0.0166	0.0112	0.0083	0.0222	0.0036
38	AIRCRAFT & PARTS (SIC 372)	0.0003	0.0006	0.0007	0.0006	0.0006	0.0021	0.0007
39	TRAILER COACHES (SIC 3791)	0.0000	0.0000	0.0001	0.0000	0.0027	0.0010	0.0001
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0000	0.0000	0.0002	0.0001	0.0016	0.0024	0.0001
41	INSTRUMENTS (SIC 38)	0.0100	0.0002	0.0003	0.0011	0.0009	0.0029	0.0027
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0035	0.0006	0.0032	0.0004	0.0071	0.0022	0.0008
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0069	0.0348	0.0323	0.0094	0.0112	0.0081	0.0075
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0123	0.0579	0.0479	0.0170	0.0178	0.0146	0.0146
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0355	0.0412	0.0539	0.0281	0.0375	0.0372	0.0333
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0177	0.0318	0.0262	0.0129	0.0236	0.0223	0.0267
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0220	0.0315	0.0254	0.0139	0.0193	0.0193	0.0179
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0039	0.0121	0.0103	0.0042	0.0061	0.0055	0.0055
49	GOVERNMENT ENTERPRISES	0.0047	0.0085	0.0066	0.0027	0.0035	0.0036	0.0033
50	UNALLOCATED INDUSTRIES	0.0069	0.0124	0.0465	0.0182	0.0104	0.0101	0.0103
51	TOTAL LOCAL PURCHASES	1.2636	1.4722	1.3709	1.1944	1.3176	1.3116	1.2102

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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) 36	37	38	39	40	41	42
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0005	0.0002	0.0005	0.0011	0.0006	0.0008	0.0016
2	FIELD CROPS (SIC 011)	0.0003	0.0001	0.0002	0.0005	0.0003	0.0022	0.0005
3	OTHER CROPS (SIC 012, 019)	0.0001	0.0001	0.0001	0.0019	0.0004	0.0002	0.0009
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0003	0.0001	0.0001	0.0050	0.0009	0.0004	0.0015
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0008	0.0003	0.0002	0.0006	0.0003	0.0006	0.0007
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0035	0.0026	0.0045	0.0031	0.0045	0.0051	0.0054
8	MEAT PRODUCTS (SIC 201)	0.0004	0.0002	0.0004	0.0004	0.0004	0.0006	0.0019
9	DAIRY PRODUCTS (SIC 202)	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002
10	CANNED & PRESERVED FOODS (SIC 203)	0.0001	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001
11	GRAIN MILL PRODUCTS (SIC 204)	0.0002	0.0001	0.0001	0.0004	0.0002	0.0002	0.0003
12	BEVERAGES (SIC 208)	0.0002	0.0001	0.0002	0.0002	0.0002	0.0003	0.0003
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0003	0.0001	0.0003	0.0004	0.0003	0.0005	0.0007
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0005	0.0006	0.0005	0.0014	0.0006	0.0035	0.0041
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0002	0.0003	0.0001	0.0008	0.0003	0.0004	0.0011
16	FLOOR COVERINGS (SIC 227)	0.0001	0.0004	0.0003	0.0031	0.0003	0.0001	0.0001
17	MISC. TEXTILE GOODS (SIC 229)	0.0020	0.0007	0.0002	0.0009	0.0011	0.0011	0.0025
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	0.0007	0.0035	0.0004	0.0005	0.0037	0.0028	0.0034
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0029	0.0013	0.0010	0.1016	0.0161	0.0036	0.0202
20	FURNITURE & FIXTURES (SIC 25)	0.0019	0.0001	0.0016	0.0203	0.0035	0.0058	0.0018
21	PULP & PAPER MILLS (SIC 261-3)	0.0031	0.0005	0.0009	0.0036	0.0011	0.0063	0.0232
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0020	0.0002	0.0003	0.0127	0.0010	0.0041	0.0016
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0058	0.0004	0.0004	0.0013	0.0008	0.0059	0.0074
24	PRINTING & PUBLISHING (SIC 27)	0.0047	0.0018	0.0054	0.0036	0.0041	0.0090	0.0098
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0065	0.0008	0.0017	0.0017	0.0013	0.0074	0.0076
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0026	0.0016	0.0013	0.0037	0.0024	0.0046	0.0065
27	PETROLEUM PRODUCTS (SIC 29)	0.0001	0.0004	0.0000	0.0001	0.0001	0.0001	0.0001
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0178	0.0056	0.0025	0.0102	0.0074	0.0174	0.0197
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0001	0.0000	0.0000	0.0000	0.0000	0.0005	0.0017
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0049	0.0013	0.0008	0.0034	0.0014	0.0032	0.0018
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0046	0.0071	0.0014	0.0027	0.0154	0.0025	0.0032
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0246	0.0032	0.0136	0.0498	0.0104	0.0050	0.0163
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0239	0.0122	0.0059	0.0292	0.0172	0.0222	0.0182
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0152	0.0109	0.0153	0.0014	0.0234	0.0095	0.0046
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0252	0.0004	0.0004	0.0002	0.0008	0.0014	0.0014
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	1.0102	0.0042	0.0089	0.0052	0.0028	0.0099	0.0020
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0156	1.0164	0.0010	0.0048	0.0088	0.0099	0.0012
38	AIRCRAFT & PARTS (SIC 372)	0.0718	0.0005	1.0104	0.0006	0.0296	0.0098	0.0007
39	TRAILER COACHES (SIC 3791)	0.0002	0.0011	0.0000	1.0035	0.0533	0.0002	0.0003
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0018	0.0001	0.0001	0.0001	1.0064	0.0010	0.0049
41	INSTRUMENTS (SIC 38)	0.0101	0.0003	0.0018	0.0003	0.0004	1.0105	0.0021
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0081	0.0010	0.0024	0.0006	0.0020	0.0092	1.0501
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0087	0.0064	0.0066	0.0123	0.0121	0.0078	0.0095
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0170	0.0073	0.0200	0.0106	0.0161	0.0231	0.0190
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0473	0.0230	0.0316	0.0307	0.0482	0.0630	0.0437
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0174	0.0079	0.0132	0.0166	0.0168	0.0245	0.0246
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0243	0.0099	0.0289	0.0159	0.0209	0.0505	0.0267
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0060	0.0087	0.0108	0.0047	0.0055	0.0084	0.0076
49	GOVERNMENT ENTERPRISES	0.0040	0.0020	0.0044	0.0028	0.0038	0.0060	0.0055
50	UNALLOCATED INDUSTRIES	0.0112	0.0043	0.0130	0.0123	0.0115	0.0164	0.0125
51	TOTAL LOCAL PURCHASES	1.4096	1.1502	1.2141	1.3873	1.3586	1.3783	1.3808

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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	43	44	45	46	47	48	49
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0019	0.0004	0.0015	0.0089	0.0013	0.0021	0.0006
2	FIELD CROPS (SIC 011)	0.0012	0.0003	0.0007	0.0105	0.0007	0.0009	0.0003
3	OTHER CROPS (SIC 012, 019)	0.0004	0.0002	0.0003	0.0020	0.0003	0.0004	0.0005
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0003	0.0002	0.0015	0.0011	0.0003	0.0003	0.0004
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0006	0.0008	0.0004	0.0011	0.0005	0.0007	0.0022
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0280	0.0448	0.0074	0.0351	0.0126	0.0259	0.1246
8	MEAT PRODUCTS (SIC 201)	0.0018	0.0003	0.0011	0.0005	0.0010	0.0015	0.0003
9	DAIRY PRODUCTS (SIC 202)	0.0009	0.0001	0.0007	0.0002	0.0004	0.0007	0.0001
10	CANNED & PRESERVED FOODS (SIC 203)	0.0005	0.0000	0.0004	0.0002	0.0002	0.0004	0.0001
11	GRAIN MILL PRODUCTS (SIC 204)	0.0004	0.0001	0.0011	0.0015	0.0003	0.0006	0.0001
12	BEVERAGES (SIC 208)	0.0006	0.0001	0.0010	0.0007	0.0005	0.0004	0.0002
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0020	0.0002	0.0022	0.0007	0.0007	0.0011	0.0003
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0001	0.0002	0.0004	0.0006	0.0003	0.0005	0.0003
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0001	0.0001	0.0006	0.0007	0.0002	0.0002	0.0001
16	FLOOR COVERINGS (SIC 227)	0.0002	0.0001	0.0007	0.0007	0.0001	0.0001	0.0001
17	MISC. TEXTILE GOODS (SIC 229)	0.0001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0002
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0003	0.0002	0.0017	0.0007	0.0002	0.0016	0.0006
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0013	0.0020	0.0017	0.0021	0.0021	0.0013	0.0051
20	FURNITURE & FIXTURES (SIC 25)	0.0001	0.0001	0.0004	0.0002	0.0003	0.0001	0.0004
21	PULP & PAPER MILLS (SIC 261-3)	0.0009	0.0014	0.0024	0.0030	0.0178	0.0015	0.0024
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0004	0.0006	0.0009	0.0008	0.0023	0.0006	0.0012
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0005	0.0002	0.0022	0.0004	0.0015	0.0006	0.0003
24	PRINTING & PUBLISHING (SIC 27)	0.0050	0.0044	0.0063	0.0091	0.1511	0.0087	0.0067
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0010	0.0014	0.0020	0.0030	0.0061	0.0027	0.0050
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0005	0.0005	0.0018	0.0010	0.0035	0.0040	0.0013
27	PETROLEUM PRODUCTS (SIC 29)	0.0003	0.0003	0.0002	0.0004	0.0001	0.0002	0.0008
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0014	0.0004	0.0012	0.0008	0.0009	0.0014	0.0011
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0000	0.0000	0.0001	0.0000	0.0000	0.0001	0.0000
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0019	0.0028	0.0016	0.0026	0.0010	0.0029	0.0076
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0009	0.0003	0.0001	0.0002	0.0002	0.0002	0.0005
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0004	0.0003	0.0003	0.0003	0.0005	0.0004	0.0006
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0018	0.0020	0.0016	0.0020	0.0013	0.0023	0.0053
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0009	0.0004	0.0012	0.0012	0.0039	0.0014	0.0009
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0002	0.0001	0.0003	0.0005	0.0003	0.0002	0.0002
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0014	0.0004	0.0005	0.0003	0.0003	0.0017	0.0008
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0003	0.0001	0.0003	0.0003	0.0003	0.0008	0.0002
38	AIRCRAFT & PARTS (SIC 372)	0.0130	0.0002	0.0025	0.0004	0.0006	0.0004	0.0006
39	TRAILER COACHES (SIC 3791)	0.0000	0.0000	0.0002	0.0002	0.0000	0.0000	0.0000
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0003	0.0000	0.0001	0.0000	0.0001	0.0000	0.0000
41	INSTRUMENTS (SIC 38)	0.0001	0.0002	0.0004	0.0001	0.0003	0.0002	0.0001
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0004	0.0003	0.0009	0.0006	0.0073	0.0016	0.0005
43	TRANSPORTATION SERVICES (SIC 40-7)	1.0384	0.0113	0.0063	0.0063	0.0087	0.0064	0.0351
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0210	1.0959	0.0260	0.0268	0.1405	0.0386	0.0358
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0411	0.0153	1.0202	0.0252	0.0391	0.0417	0.0226
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0449	0.0245	0.0529	1.1997	0.0650	0.0814	0.0298
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0261	0.0256	0.0334	0.0448	1.0696	0.0338	0.0359
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0214	0.0220	0.0135	0.0202	0.0283	1.0435	0.0086
49	GOVERNMENT ENTERPRISES	0.0169	0.0711	0.0141	0.0208	0.0329	0.0127	1.0051
50	UNALLOCATED INDUSTRIES	0.0097	0.0080	0.0097	0.0131	0.0314	0.0187	0.0088
51	TOTAL LOCAL PURCHASES	1.2917	1.3408	1.2271	1.4519	1.6373	1.1477	1.1544

TABLE 3. TOTAL REQUIREMENTS (DIRECT AND INDIRECT) PER DOLLAR OF DELIVERY TO FINAL DEMAND
GEORGIA, 1970
(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	50
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0254
2	FIELD CROPS (SIC 011)	0.0021
3	OTHER CROPS (SIC 012, 019)	0.0032
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0021
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0004
6	OTHER MINING (SIC 10-3, 147)	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0068
8	MEAT PRODUCTS (SIC 201)	0.0287
9	DAIRY PRODUCTS (SIC 202)	0.0114
10	CANNED & PRESERVED FOODS (SIC 203)	0.0040
11	GRAIN MILL PRODUCTS (SIC 204)	0.0045
12	BEVERAGES (SIC 208)	0.0132
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0113
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0030
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0015
16	FLOOR COVERINGS (SIC 227)	0.0001
17	MISC. TEXTILE GOODS (SIC 229)	0.0002
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0011
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0020
20	FURNITURE & FIXTURES (SIC 25)	0.0002
21	PULP & PAPER MILLS (SIC 261-3)	0.0122
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0045
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0037
24	PRINTING & PUBLISHING (SIC 27)	0.0903
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0032
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0021
27	PETROLEUM PRODUCTS (SIC 29)	0.0001
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0018
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0006
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0017
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0013
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0078
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0055
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0047
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0003
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0012
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0019
38	AIRCRAFT & PARTS (SIC 372)	0.0035
39	TRAILER COACHES (SIC 3791)	0.0000
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0003
41	INSTRUMENTS (SIC 38)	0.0006
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0064
43	TRANSPORTATION SERVICES (SIC 40-7)	0.1081
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0106
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.0566
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0199
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0118
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0973
49	GOVERNMENT ENTERPRISES	0.0048
50	UNALLOCATED INDUSTRIES	1.0055
51	TOTAL LOCAL PURCHASES	1.5896

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970

(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 & LIVESTOCK PROD. (SIC 013)	1.0715	0.0631	0.0542	0.1375	0.0106	0.0104	0.0119
2	FIELD CROPS (SIC 011)	0.0700	1.0224	0.0075	0.0680	0.0021	0.0021	0.0022
3	OTHER CROPS (SIC 012, 019)	0.0041	0.0041	1.0303	0.0517	0.0016	0.0017	0.0045
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0430	0.0392	0.0444	1.0489	0.0014	0.0016	0.0036
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0012	0.0039	0.0037	0.0011	1.0145	0.0103	0.0181
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0001	0.0001	0.0000	0.0002	1.0354	0.0001
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0172	0.0246	0.0261	0.0116	0.0190	0.0190	1.0109
8	MEAT PRODUCTS (SIC 201)	0.0103	0.0121	0.0129	0.0109	0.0084	0.0082	0.0093
9	DAIRY PRODUCTS (SIC 202)	0.0063	0.0080	0.0086	0.0068	0.0056	0.0054	0.0062
10	CANNED & PRESERVED FOODS (SIC 203)	0.0033	0.0036	0.0038	0.0032	0.0025	0.0024	0.0027
11	GRAIN MILL PRODUCTS (SIC 204)	0.1617	0.0114	0.0103	0.0362	0.0026	0.0026	0.0030
12	BEVERAGES (SIC 208)	0.0073	0.0090	0.0096	0.0078	0.0062	0.0061	0.0070
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0223	0.0138	0.0147	0.0284	0.0087	0.0086	0.0099
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0017	0.0017	0.0016	0.0014	0.0011	0.0010	0.0013
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0007	0.0008	0.0009	0.0010	0.0006	0.0005	0.0007
16	FLOOR COVERINGS (SIC 227)	0.0008	0.0010	0.0010	0.0009	0.0007	0.0007	0.0011
17	MISC. TEXTILE GOODS (SIC 229)	0.0009	0.0010	0.0013	0.0128	0.0008	0.0003	0.0007
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0071	0.0079	0.0101	0.0069	0.0054	0.0051	0.0066
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0021	0.0028	0.0113	0.0063	0.0022	0.0070	0.0403
20	FURNITURE & FIXTURES (SIC 25)	0.0020	0.0026	0.0028	0.0022	0.0019	0.0018	0.0047
21	PULP & PAPER MILLS (SIC 261-3)	0.0023	0.0029	0.0033	0.0066	0.0021	0.0020	0.0036
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0009	0.0008	0.0009	0.0008	0.0010	0.0007	0.0038
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0031	0.0024	0.0033	0.0189	0.0016	0.0013	0.0026
24	PRINTING & PUBLISHING (SIC 27)	0.0069	0.0105	0.0111	0.0076	0.0083	0.0073	0.0133
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0053	0.0270	0.0269	0.0057	0.0065	0.0208	0.0046
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0035	0.0045	0.0048	0.0043	0.0032	0.0033	0.0080
27	PETROLEUM PRODUCTS (SIC 29)	0.0002	0.0003	0.0004	0.0002	0.0018	0.0003	0.0067
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0017	0.0024	0.0040	0.0019	0.0143	0.0025	0.0065
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0008	0.0010	0.0010	0.0010	0.0007	0.0006	0.0007
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0024	0.0034	0.0043	0.0022	0.0230	0.0029	0.0621
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0002	0.0003	0.0003	0.0005	0.0027	0.0018	0.0037
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0005	0.0006	0.0007	0.0014	0.0010	0.0010	0.0043
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0033	0.0037	0.0040	0.0170	0.0032	0.0034	0.0428
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0011	0.0038	0.0031	0.0014	0.0099	0.0215	0.0053
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0002	0.0002	0.0002	0.0002	0.0005	0.0006	0.0018
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0007	0.0010	0.0011	0.0009	0.0011	0.0008	0.0055
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0016	0.0021	0.0022	0.0018	0.0024	0.0020	0.0022
38	AIRCRAFT & PARTS (SIC 372)	0.0008	0.0008	0.0010	0.0009	0.0008	0.0007	0.0014
39	TRAILER COACHES (SIC 3791)	0.0036	0.0048	0.0051	0.0040	0.0033	0.0032	0.0037
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0001	0.0002	0.0001	0.0004	0.0001	0.0001	0.0002
41	INSTRUMENTS (SIC 38)	0.0004	0.0005	0.0005	0.0004	0.0004	0.0004	0.0005
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0008	0.0011	0.0012	0.0010	0.0010	0.0009	0.0021
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0233	0.0154	0.0198	0.0206	0.0166	0.0203	0.0297
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0361	0.0463	0.0552	0.0337	0.0697	0.0671	0.0468
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1618	0.1736	0.2062	0.1710	0.1419	0.1190	0.2095
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.1224	0.2019	0.1695	0.1371	0.1418	0.1457	0.1239
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0273	0.0481	0.0494	0.0246	0.0357	0.0308	0.0700
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0848	0.1079	0.1189	0.0896	0.0860	0.0734	0.0862
49	GOVERNMENT ENTERPRISES	0.0095	0.0123	0.0132	0.0099	0.0137	0.0133	0.0124
50	UNALLOCATED INDUSTRIES	0.0069	0.0084	0.0100	0.0175	0.0139	0.0118	0.0136
51	HOUSEHOLDS	0.6154	0.8047	0.8610	0.6613	0.5496	0.5353	0.6088
52	TOTAL LOCAL PURCHASES	2.5615	2.7258	2.8381	2.6880	2.2539	2.2249	2.5111

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970

(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 & LIVESTOCK PROD. (SIC 013)	0.5899	0.4975	0.0344	0.0146	0.0110	0.0322	0.0102
2	FIELD CROPS (SIC 011)	0.0392	0.0334	0.0090	0.0651	0.0022	0.0176	0.0022
3	OTHER CROPS (SIC 012, 019)	0.0031	0.0033	0.0506	0.0023	0.0069	0.0070	0.0015
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0243	0.0208	0.0938	0.0044	0.0025	0.0037	0.0014
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0009	0.0014	0.0046	0.0027	0.0075	0.0023	0.0005
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0137	0.0167	0.0132	0.0111	0.0124	0.0117	0.0084
8	MEAT PRODUCTS (SIC 201)	1.0333	0.0146	0.0276	0.0126	0.0082	0.0422	0.0082
9	DAIRY PRODUCTS (SIC 202)	0.0061	1.1100	0.0074	0.0050	0.0071	0.0059	0.0055
10	CANNED & PRESERVED FOODS (SIC 203)	0.0050	0.0041	1.0124	0.0058	0.0126	0.0107	0.0024
11	GRAIN MILL PRODUCTS (SIC 204)	0.0909	0.0759	0.0095	1.1689	0.0033	0.0157	0.0025
12	BEVERAGES (SIC 208)	0.0070	0.0099	0.0314	0.0063	1.0733	0.0238	0.0061
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0225	0.0208	0.0479	0.0533	0.0288	1.0626	0.0087
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0014	0.0016	0.0010	0.0057	0.0009	0.0011	1.0649
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0006	0.0007	0.0006	0.0008	0.0005	0.0006	0.0354
16	FLOOR COVERINGS (SIC 227)	0.0007	0.0008	0.0007	0.0005	0.0006	0.0006	0.0021
17	MISC. TEXTILE GOODS (SIC 229)	0.0007	0.0007	0.0015	0.0004	0.0003	0.0019	0.0189
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0067	0.0084	0.0057	0.0108	0.0052	0.0052	0.0095
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0021	0.0032	0.0039	0.0016	0.0028	0.0028	0.0016
20	FURNITURE & FIXTURES (SIC 25)	0.0020	0.0022	0.0020	0.0012	0.0017	0.0017	0.0018
21	PULP & PAPER MILLS (SIC 261-3)	0.0026	0.0071	0.0074	0.0038	0.0046	0.0172	0.0027
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0009	0.0017	0.0027	0.0025	0.0014	0.0017	0.0033
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0047	0.0195	0.0183	0.0067	0.0090	0.0571	0.0035
24	PRINTING & PUBLISHING (SIC 27)	0.0071	0.0106	0.0137	0.0091	0.0117	0.0123	0.0053
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0038	0.0042	0.0049	0.0132	0.0143	0.0082	0.0108
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0033	0.0037	0.0042	0.0044	0.0049	0.0057	0.0047
27	PETROLEUM PRODUCTS (SIC 29)	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0044	0.0023	0.0036	0.0016	0.0019	0.0105	0.0017
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0007	0.0008	0.0007	0.0004	0.0006	0.0006	0.0007
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0022	0.0055	0.0341	0.0021	0.0618	0.0115	0.0017
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0003	0.0002	0.0016	0.0002	0.0008	0.0003	0.0001
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0007	0.0007	0.0036	0.0004	0.0015	0.0008	0.0004
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0075	0.0040	0.0635	0.0022	0.0230	0.0053	0.0016
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0011	0.0015	0.0024	0.0015	0.0016	0.0014	0.0012
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0002	0.0003	0.0001	0.0003	0.0002	0.0001
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0006	0.0008	0.0007	0.0004	0.0006	0.0006	0.0005
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0015	0.0018	0.0019	0.0009	0.0015	0.0014	0.0014
38	AIRCRAFT & PARTS (SIC 372)	0.0008	0.0008	0.0011	0.0009	0.0008	0.0008	0.0006
39	TRAILER COACHES (SIC 3791)	0.0035	0.0040	0.0032	0.0021	0.0029	0.0031	0.0033
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001
41	INSTRUMENTS (SIC 38)	0.0004	0.0004	0.0005	0.0003	0.0004	0.0004	0.0004
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0008	0.0010	0.0014	0.0008	0.0010	0.0011	0.0007
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0273	0.0189	0.0398	0.0377	0.0282	0.0222	0.0124
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0347	0.0483	0.0431	0.0334	0.0408	0.0430	0.0317
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1483	0.1687	0.1821	0.1507	0.1361	0.1407	0.1186
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.1127	0.1406	0.1093	0.0785	0.1104	0.1038	0.0960
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0260	0.0397	0.0548	0.0382	0.0490	0.0431	0.0201
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0809	0.1018	0.0733	0.0501	0.0739	0.0764	0.0699
49	GOVERNMENT ENTERPRISES	0.0093	0.0126	0.0113	0.0088	0.0109	0.0106	0.0080
50	UNALLOCATED INDUSTRIES	0.0072	0.0109	0.0118	0.0095	0.0104	0.0101	0.0061
51	HOUSEHOLDS	0.5921	0.6728	0.5201	0.3491	0.4748	0.5161	0.5527
52	TOTAL LOCAL PURCHASES	2.9359	3.1117	2.5730	2.1832	2.2673	2.3554	2.1520

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970

(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	15	16	17	18	19	20	21
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0083	0.0080	0.0091	0.0137	0.0183	0.0112	0.0107
2	FIELD CROPS (SIC 011)	0.0019	0.0023	0.0272	0.0027	0.0055	0.0025	0.0020
3	OTHER CROPS (SIC 012, 019)	0.0012	0.0012	0.0016	0.0021	0.0224	0.0030	0.0026
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0011	0.0012	0.0020	0.0050	0.0585	0.0052	0.0043
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0005	0.0006	0.0005	0.0005	0.0007	0.0008	0.0057
6	OTHER MINING (SIC 10-3, 147)	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0109	0.0115	0.0099	0.0106	0.0132	0.0105	0.0183
8	MEAT PRODUCTS (SIC 201)	0.0062	0.0063	0.0060	0.0107	0.0088	0.0086	0.0086
9	DAIRY PRODUCTS (SIC 202)	0.0041	0.0042	0.0040	0.0072	0.0059	0.0057	0.0054
10	CANNED & PRESERVED FOODS (SIC 203)	0.0018	0.0019	0.0018	0.0032	0.0026	0.0025	0.0024
11	GRAIN MILL PRODUCTS (SIC 204)	0.0020	0.0020	0.0022	0.0034	0.0046	0.0028	0.0027
12	BEVERAGES (SIC 208)	0.0047	0.0048	0.0047	0.0080	0.0066	0.0064	0.0061
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0067	0.0068	0.0067	0.0113	0.0101	0.0090	0.0089
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0256	0.0303	0.0086	0.0957	0.0010	0.0218	0.0031
15	YARN & THREAD MILLS (SIC 2269, 228)	1.0805	0.2028	0.0264	0.0468	0.0007	0.0027	0.0006
16	FLOOR COVERINGS (SIC 227)	0.0415	1.0164	0.0098	0.0079	0.0010	0.0011	0.0006
17	MISC. TEXTILE GOODS (SIC 229)	0.0195	0.0327	1.0089	0.0075	0.0010	0.0139	0.0004
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	0.0045	0.0044	0.0063	1.0655	0.0061	0.0066	0.0052
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0015	0.0018	0.0015	0.0025	1.1824	0.0799	0.0613
20	FURNITURE & FIXTURES (SIC 25)	0.0014	0.0014	0.0023	0.0025	0.0033	1.0135	0.0018
21	PULP & PAPER MILLS (SIC 261-3)	0.0040	0.0049	0.0033	0.0033	0.0040	0.0048	1.0982
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0008	0.0035	0.0010	0.0017	0.0015	0.0012	0.0117
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0091	0.0109	0.0050	0.0055	0.0030	0.0099	0.0020
24	PRINTING & PUBLISHING (SIC 27)	0.0065	0.0067	0.0057	0.0078	0.0075	0.0084	0.0108
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0162	0.0058	0.0057	0.0039	0.0036	0.0039	0.0418
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0134	0.0129	0.0276	0.0052	0.0049	0.0085	0.0056
27	PETROLEUM PRODUCTS (SIC 29)	0.0002	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0017	0.0129	0.0018	0.0056	0.0019	0.0342	0.0022
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0005	0.0005	0.0005	0.0014	0.0008	0.0008	0.0007
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0016	0.0016	0.0016	0.0019	0.0022	0.0034	0.0024
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0002	0.0002	0.0002	0.0002	0.0006	0.0041	0.0004
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0004	0.0004	0.0004	0.0007	0.0011	0.0028	0.0009
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0020	0.0020	0.0023	0.0022	0.0062	0.0215	0.0060
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0025	0.0015	0.0019	0.0011	0.0016	0.0029	0.0024
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0004	0.0004	0.0004	0.0006	0.0006	0.0007	0.0006
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0011	0.0011	0.0010	0.0018	0.0016	0.0018	0.0014
38	AIRCRAFT & PARTS (SIC 372)	0.0007	0.0007	0.0006	0.0007	0.0008	0.0008	0.0010
39	TRAILER COACHES (SIC 3791)	0.0024	0.0025	0.0023	0.0042	0.0035	0.0054	0.0030
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
41	INSTRUMENTS (SIC 38)	0.0004	0.0004	0.0011	0.0008	0.0005	0.0009	0.0004
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0007	0.0008	0.0010	0.0064	0.0011	0.0019	0.0011
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0205	0.0167	0.0134	0.0141	0.0236	0.0198	0.0377
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0401	0.0348	0.0329	0.0405	0.0410	0.0404	0.0685
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1287	0.1567	0.1450	0.1683	0.1371	0.1548	0.1480
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0839	0.0857	0.0773	0.1334	0.1158	0.1221	0.1022
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0299	0.0307	0.0234	0.0305	0.0320	0.0366	0.0382
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0547	0.0558	0.0521	0.0922	0.0788	0.0757	0.0709
49	GOVERNMENT ENTERPRISES	0.0090	0.0094	0.0081	0.0120	0.0100	0.0108	0.0128
50	UNALLOCATED INDUSTRIES	0.0093	0.0092	0.0104	0.0102	0.0096	0.0126	0.0186
51	HOUSEHOLDS	0.4035	0.4136	0.3859	0.7192	0.5828	0.5617	0.5017
52	TOTAL LOCAL PURCHASES	2.0684	2.2234	1.9514	2.5827	2.4308	2.3607	2.1677

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970

(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	27	28
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0109	0.0104	0.0146	0.0101	0.0111	0.0092	0.0107
2	FIELD CROPS (SIC 011)	0.0025	0.0019	0.0027	0.0019	0.0022	0.0018	0.0029
3	OTHER CROPS (SIC 012, 019)	0.0029	0.0018	0.0023	0.0014	0.0018	0.0015	0.0017
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0052	0.0022	0.0023	0.0036	0.0018	0.0015	0.0017
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0056	0.0120	0.0012	0.0030	0.0033	0.0594	0.0020
6	OTHER MINING (SIC 10-3, 147)	0.0002	0.0001	0.0001	0.0046	0.0005	0.0001	0.0001
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0190	0.0150	0.0145	0.0131	0.0124	0.0188	0.0120
8	MEAT PRODUCTS (SIC 201)	0.0085	0.0084	0.0118	0.0099	0.0093	0.0074	0.0086
9	DAIRY PRODUCTS (SIC 202)	0.0055	0.0055	0.0077	0.0041	0.0054	0.0048	0.0056
10	CANNED & PRESERVED FOODS (SIC 203)	0.0025	0.0024	0.0034	0.0025	0.0028	0.0022	0.0025
11	GRAIN MILL PRODUCTS (SIC 204)	0.0094	0.0026	0.0037	0.0034	0.0043	0.0026	0.0027
12	BEVERAGES (SIC 208)	0.0062	0.0062	0.0087	0.0056	0.0176	0.0056	0.0065
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0092	0.0088	0.0130	0.0157	0.0238	0.0083	0.0092
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0034	0.0015	0.0016	0.0010	0.0014	0.0010	0.0108
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0008	0.0006	0.0012	0.0005	0.0007	0.0005	0.0024
16	FLOOR COVERINGS (SIC 227)	0.0007	0.0007	0.0009	0.0005	0.0007	0.0006	0.0011
17	MISC. TEXTILE GOODS (SIC 229)	0.0014	0.0004	0.0005	0.0003	0.0013	0.0004	0.0424
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	0.0092	0.0057	0.0072	0.0059	0.0056	0.0052	0.0092
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0803	0.0177	0.0104	0.0063	0.0051	0.0063	0.0066
20	FURNITURE & FIXTURES (SIC 25)	0.0019	0.0019	0.0042	0.0014	0.0019	0.0016	0.0024
21	PULP & PAPER MILLS (SIC 261-3)	0.2096	0.2693	0.1173	0.0190	0.0257	0.0134	0.0060
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	1.0032	0.0063	0.0109	0.0024	0.0021	0.0433	0.0051
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0386	1.0174	0.0084	0.0045	0.0133	0.0093	0.0108
24	PRINTING & PUBLISHING (SIC 27)	0.0201	0.0133	1.0340	0.0077	0.0154	0.0095	0.0090
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0321	0.0145	0.0230	1.1000	0.1171	0.0252	0.0260
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0063	0.0042	0.0052	0.0284	1.0310	0.0214	0.0182
27	PETROLEUM PRODUCTS (SIC 29)	0.0008	0.0002	0.0002	0.0026	0.0011	1.0022	0.0003
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0188	0.0031	0.0041	0.0030	0.0242	0.0035	1.0113
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0007	0.0007	0.0009	0.0005	0.0007	0.0006	0.0013
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0025	0.0030	0.0023	0.0068	0.0123	0.0192	0.0057
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0004	0.0004	0.0003	0.0018	0.0012	0.0007	0.0007
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0030	0.0050	0.0008	0.0010	0.0022	0.0011	0.0020
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0047	0.0085	0.0032	0.0091	0.0320	0.0119	0.0063
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0014	0.0016	0.0020	0.0024	0.0018	0.0018	0.0023
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0004
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0007	0.0006	0.0008	0.0005	0.0006	0.0006	0.0007
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0016	0.0015	0.0024	0.0013	0.0017	0.0014	0.0017
38	AIRCRAFT & PARTS (SIC 372)	0.0009	0.0009	0.0031	0.0007	0.0009	0.0009	0.0009
39	TRAILER COACHES (SIC 3791)	0.0032	0.0032	0.0045	0.0024	0.0032	0.0028	0.0033
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
41	INSTRUMENTS (SIC 38)	0.0013	0.0004	0.0007	0.0005	0.0066	0.0005	0.0016
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0018	0.0011	0.0018	0.0025	0.0019	0.0010	0.0066
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0260	0.0316	0.0199	0.0231	0.0230	0.0311	0.0183
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0759	0.0513	0.0549	0.0493	0.0487	0.0790	0.0450
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1406	0.1414	0.1683	0.1144	0.1488	0.1600	0.1431
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.1085	0.1120	0.1644	0.0837	0.1116	0.1109	0.1097
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0351	0.0424	0.0466	0.0352	0.0776	0.0431	0.0399
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0750	0.0758	0.1033	0.0549	0.0736	0.0655	0.0749
49	GOVERNMENT ENTERPRISES	0.0125	0.0115	0.0200	0.0095	0.0123	0.0128	0.0107
50	UNALLOCATED INDUSTRIES	0.0204	0.0182	0.0227	0.0131	0.0185	0.0129	0.0142
51	HOUSEHOLDS	0.5349	0.5359	0.7610	0.3957	0.5196	0.4711	0.5558
52	TOTAL LOCAL PURCHASES	2.5663	2.4812	2.6994	2.0709	2.4419	2.2959	2.2732

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970

(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) 29	30	31	32	33	34	35
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0198	0.0123	0.0120	0.0076	0.0102	0.0105	0.0104
2	FIELD CROPS (SIC 011)	0.0026	0.0022	0.0020	0.0013	0.0018	0.0019	0.0019
3	OTHER CROPS (SIC 012, 019)	0.0018	0.0019	0.0018	0.0011	0.0016	0.0018	0.0016
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0021	0.0019	0.0017	0.0011	0.0016	0.0022	0.0014
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0005	0.1198	0.0036	0.0005	0.0014	0.0007	0.0006
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0096	0.0203	0.0149	0.0090	0.0099	0.0097	0.0095
8	MEAT PRODUCTS (SIC 201)	0.0243	0.0099	0.0099	0.0062	0.0082	0.0084	0.0084
9	DAIRY PRODUCTS (SIC 202)	0.0060	0.0066	0.0063	0.0040	0.0054	0.0056	0.0056
10	CANNED & PRESERVED FOODS (SIC 203)	0.0027	0.0029	0.0028	0.0018	0.0024	0.0025	0.0024
11	GRAIN MILL PRODUCTS (SIC 204)	0.0041	0.0031	0.0029	0.0019	0.0025	0.0034	0.0026
12	BEVERAGES (SIC 208)	0.0067	0.0073	0.0071	0.0045	0.0061	0.0064	0.0062
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0096	0.0103	0.0096	0.0062	0.0086	0.0091	0.0087
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0082	0.0020	0.0011	0.0007	0.0011	0.0012	0.0011
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0090	0.0010	0.0006	0.0014	0.0006	0.0009	0.0006
16	FLOOR COVERINGS (SIC 227)	0.0028	0.0008	0.0007	0.0005	0.0007	0.0007	0.0007
17	MISC. TEXTILE GOODS (SIC 229)	0.0022	0.0006	0.0003	0.0002	0.0009	0.0007	0.0008
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0232	0.0144	0.0060	0.0038	0.0057	0.0057	0.0055
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0076	0.0078	0.0054	0.0037	0.0069	0.0188	0.0036
20	FURNITURE & FIXTURES (SIC 25)	0.0021	0.0035	0.0020	0.0014	0.0046	0.0024	0.0019
21	PULP & PAPER MILLS (SIC 261-3)	0.0052	0.0047	0.0026	0.0022	0.0045	0.0031	0.0023
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0009	0.0021	0.0009	0.0006	0.0018	0.0012	0.0012
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0077	0.0094	0.0020	0.0015	0.0084	0.0041	0.0026
24	PRINTING & PUBLISHING (SIC 27)	0.0085	0.0104	0.0121	0.0065	0.0096	0.0079	0.0076
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0036	0.0101	0.0043	0.0027	0.0055	0.0045	0.0034
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0079	0.0053	0.0034	0.0036	0.0084	0.0109	0.0046
27	PETROLEUM PRODUCTS (SIC 29)	0.0001	0.0009	0.0002	0.0001	0.0002	0.0001	0.0001
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0309	0.0069	0.0022	0.0016	0.0049	0.0091	0.0117
29	LEATHER & LEATHER PRODUCTS (SIC 31)	1.0075	0.0008	0.0008	0.0005	0.0007	0.0009	0.0007
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0018	1.0346	0.0031	0.0014	0.0081	0.0035	0.0028
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0002	0.0027	1.0069	0.0047	0.0217	0.0133	0.0050
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0007	0.0009	0.0060	1.0311	0.0518	0.0083	0.0102
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0031	0.0057	0.0245	0.0042	1.0184	0.0312	0.0129
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0010	0.0041	0.0222	0.0057	0.0158	1.0340	0.0129
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0002	0.0025	0.0004	0.0004	0.0021	0.0069	1.0031
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0006	0.0010	0.0015	0.0060	0.0016	0.0054	0.0071
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0016	0.0028	0.0180	0.0121	0.0096	0.0235	0.0049
38	AIRCRAFT & PARTS (SIC 372)	0.0008	0.0011	0.0012	0.0009	0.0010	0.0025	0.0011
39	TRAILER COACHES (SIC 3791)	0.0035	0.0038	0.0035	0.0023	0.0058	0.0043	0.0033
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0001	0.0001	0.0002	0.0001	0.0016	0.0024	0.0002
41	INSTRUMENTS (SIC 38)	0.0103	0.0006	0.0006	0.0013	0.0012	0.0031	0.0030
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0041	0.0013	0.0038	0.0008	0.0077	0.0028	0.0013
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0140	0.0424	0.0392	0.0140	0.0175	0.0146	0.0140
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0366	0.0841	0.0716	0.0327	0.0397	0.0371	0.0370
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1412	0.1556	0.1572	0.0967	0.1327	0.1351	0.1308
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.1133	0.1352	0.1196	0.0749	0.1097	0.1108	0.1148
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0361	0.0468	0.0392	0.0231	0.0320	0.0323	0.0309
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0774	0.0916	0.0822	0.0519	0.0723	0.0736	0.0732
49	GOVERNMENT ENTERPRISES	0.0115	0.0158	0.0132	0.0071	0.0096	0.0098	0.0095
50	UNALLOCATED INDUSTRIES	0.0107	0.0164	0.0502	0.0206	0.0138	0.0136	0.0117
51	HOUSEHOLDS	0.5954	0.6440	0.5819	0.3864	0.5363	0.5515	0.5408
52	TOTAL LOCAL PURCHASES	2.2813	2.5730	2.3655	1.8547	2.2342	2.2547	2.1487

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970

(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	36	37	38	39	40	41	42
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0104	0.0066	0.0084	0.0093	0.0109	0.0101	0.0123
2	FIELD CROPS (SIC 011)	0.0019	0.0011	0.0014	0.0018	0.0019	0.0037	0.0022
3	OTHER CROPS (SIC 012, 019)	0.0016	0.0010	0.0012	0.0031	0.0019	0.0015	0.0025
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0015	0.0009	0.0011	0.0060	0.0022	0.0016	0.0028
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0010	0.0005	0.0004	0.0008	0.0006	0.0009	0.0010
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0093	0.0063	0.0091	0.0079	0.0105	0.0105	0.0117
8	MEAT PRODUCTS (SIC 201)	0.0085	0.0053	0.0069	0.0071	0.0088	0.0082	0.0106
9	DAIRY PRODUCTS (SIC 202)	0.0056	0.0036	0.0045	0.0047	0.0058	0.0053	0.0060
10	CANNED & PRESERVED FOODS (SIC 203)	0.0025	0.0016	0.0020	0.0021	0.0026	0.0024	0.0027
11	GRAIN MILL PRODUCTS (SIC 204)	0.0026	0.0016	0.0021	0.0024	0.0027	0.0025	0.0030
12	BEVERAGES (SIC 208)	0.0063	0.0040	0.0050	0.0052	0.0065	0.0060	0.0068
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0088	0.0055	0.0070	0.0074	0.0091	0.0084	0.0098
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0013	0.0011	0.0011	0.0021	0.0015	0.0043	0.0049
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0007	0.0006	0.0005	0.0012	0.0008	0.0008	0.0016
16	FLOOR COVERINGS (SIC 227)	0.0007	0.0008	0.0008	0.0036	0.0009	0.0007	0.0008
17	MISC. TEXTILE GOODS (SIC 229)	0.0022	0.0008	0.0003	0.0011	0.0013	0.0013	0.0028
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	0.0057	0.0067	0.0044	0.0047	0.0090	0.0076	0.0088
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0040	0.0020	0.0019	0.1025	0.0172	0.0046	0.0214
20	FURNITURE & FIXTURES (SIC 25)	0.0037	0.0013	0.0030	0.0218	0.0053	0.0074	0.0037
21	PULP & PAPER MILLS (SIC 261-3)	0.0042	0.0012	0.0018	0.0045	0.0022	0.0074	0.0243
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0024	0.0004	0.0006	0.0130	0.0014	0.0045	0.0020
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0068	0.0011	0.0012	0.0022	0.0019	0.0068	0.0085
24	PRINTING & PUBLISHING (SIC 27)	0.0087	0.0044	0.0086	0.0069	0.0083	0.0128	0.0142
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0077	0.0016	0.0027	0.0028	0.0026	0.0086	0.0090
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0050	0.0032	0.0033	0.0057	0.0049	0.0069	0.0091
27	PETROLEUM PRODUCTS (SIC 29)	0.0002	0.0004	0.0001	0.0001	0.0001	0.0002	0.0002
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0188	0.0063	0.0033	0.0111	0.0085	0.0184	0.0208
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0007	0.0004	0.0005	0.0006	0.0007	0.0011	0.0024
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0060	0.0020	0.0017	0.0044	0.0026	0.0043	0.0031
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0047	0.0071	0.0015	0.0028	0.0155	0.0026	0.0033
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0249	0.0034	0.0138	0.0500	0.0107	0.0053	0.0166
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0251	0.0130	0.0069	0.0302	0.0185	0.0233	0.0195
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0157	0.0112	0.0157	0.0018	0.0238	0.0100	0.0051
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0252	0.0004	0.0004	0.0003	0.0009	0.0015	0.0015
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	1.0106	0.0045	0.0093	0.0056	0.0033	0.0103	0.0024
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0170	1.0172	0.0020	0.0059	0.0102	0.0112	0.0026
38	AIRCRAFT & PARTS (SIC 372)	0.0722	0.0008	1.0107	0.0010	0.0300	0.0102	0.0012
39	TRAILER COACHES (SIC 3791)	0.0034	0.0032	0.0026	1.0062	0.0567	0.0032	0.0038
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0019	0.0002	0.0002	0.0002	1.0064	0.0011	0.0049
41	INSTRUMENTS (SIC 38)	0.0104	0.0005	0.0020	0.0005	0.0007	1.0108	0.0024
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0087	0.0013	0.0028	0.0010	0.0026	0.0098	1.0507
43	TRANSPORTATION SERVICES (SIC 40-7)	0.0152	0.0106	0.0118	0.0177	0.0189	0.0140	0.0166
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0394	0.0216	0.0379	0.0292	0.0396	0.0442	0.0432
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1450	0.0856	0.1098	0.1117	0.1503	0.1550	0.1490
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.1057	0.0645	0.0839	0.0899	0.1091	0.1076	0.1197
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0373	0.0182	0.0394	0.0267	0.0345	0.0627	0.0407
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.0739	0.0523	0.0652	0.0610	0.0765	0.0724	0.0808
49	GOVERNMENT ENTERPRISES	0.0102	0.0060	0.0094	0.0079	0.0103	0.0119	0.0122
50	UNALLOCATED INDUSTRIES	0.0146	0.0066	0.0158	0.0151	0.0151	0.0197	0.0163
51	HOUSEHOLDS	0.5502	0.3530	0.4404	0.4562	0.5750	0.5179	0.5930
52	TOTAL LOCAL PURCHASES	2.3499	1.7535	1.9668	2.1670	2.3413	2.2634	2.3944

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970
(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	43	44	45	46	47	48	49
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0169	0.0101	0.0159	0.0246	0.0164	0.0138	0.0148
2	FIELD CROPS (SIC 011)	0.0036	0.0018	0.0030	0.0130	0.0031	0.0027	0.0026
3	OTHER CROPS (SIC 012, 019)	0.0025	0.0016	0.0023	0.0043	0.0024	0.0021	0.0026
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0022	0.0014	0.0033	0.0031	0.0022	0.0018	0.0022
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0010	0.0011	0.0008	0.0016	0.0009	0.0010	0.0027
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0367	0.0504	0.0158	0.0442	0.0213	0.0327	0.1328
8	MEAT PRODUCTS (SIC 201)	0.0140	0.0081	0.0128	0.0133	0.0132	0.0110	0.0119
9	DAIRY PRODUCTS (SIC 202)	0.0091	0.0054	0.0086	0.0089	0.0086	0.0072	0.0079
10	CANNED & PRESERVED FOODS (SIC 203)	0.0041	0.0024	0.0039	0.0040	0.0038	0.0032	0.0035
11	GRAIN MILL PRODUCTS (SIC 204)	0.0041	0.0025	0.0046	0.0054	0.0040	0.0035	0.0036
12	BEVERAGES (SIC 208)	0.0098	0.0060	0.0097	0.0103	0.0097	0.0075	0.0088
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	148	0.0084	0.0145	0.0141	0.0135	0.0111	0.0123
14	FABRIC MILLS (SIC 221-4, 2261-2)	014	0.0010	0.0016	0.0019	0.0015	0.0015	0.0014
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0008	0.0006	0.0012	0.0014	0.0009	0.0007	0.0008
16	FLOOR COVERINGS (SIC 227)	0.0011	0.0007	0.0016	0.0016	0.0010	0.0008	0.0010
17	MISC. TEXTILE GOODS (SIC 229)	0.0004	0.0003	0.0005	0.0006	0.0004	0.0004	0.0005
18	FABRICATED TEXTILE PRODUCTS(SIC 225, 23)	0.0079	0.0051	0.0091	0.0087	0.0079	0.0076	0.0078
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0030	0.0031	0.0033	0.0039	0.0038	0.0026	0.0067
20	FURNITURE & FIXTURES (SIC 25)	0.0028	0.0019	0.0029	0.0030	0.0030	0.0022	0.0029
21	PULP & PAPER MILLS (SIC 261-3)	0.0025	0.0025	0.0040	0.0048	0.0195	0.0028	0.0040
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0009	0.0009	0.0014	0.0014	0.0028	0.0010	0.0017
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0020	0.0012	0.0036	0.0020	0.0031	0.0018	0.0018
24	PRINTING & PUBLISHING (SIC 27)	0.0111	0.0084	0.0122	0.0156	0.1573	0.0135	0.0125
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0028	0.0026	0.0038	0.0049	0.0080	0.0042	0.0068
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0042	0.0029	0.0053	0.0049	0.0072	0.0068	0.0047
27	PETROLEUM PRODUCTS (SIC 29)	0.0004	0.0004	0.0003	0.0005	0.0002	0.0003	0.0010
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0029	0.0015	0.0027	0.0024	0.0025	0.0027	0.0025
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0010	0.0006	0.0010	0.0011	0.0010	0.0008	0.0009
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0037	0.0040	0.0033	0.0045	0.0028	0.0042	0.0093
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0011	0.0004	0.0003	0.0004	0.0003	0.0003	0.0006
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0009	0.0006	0.0008	0.0008	0.0009	0.0007	0.0010
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0036	0.0032	0.0034	0.0039	0.0031	0.0037	0.0071
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0016	0.0009	0.0019	0.0020	0.0046	0.0019	0.0015
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0003	0.0002	0.0004	0.0007	0.0005	0.0003	0.0004
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0021	0.0008	0.0011	0.0010	0.0009	0.0022	0.0014
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0023	0.0014	0.0022	0.0024	0.0023	0.0024	0.0021
38	AIRCRAFT & PARTS (SIC 372)	0.0136	0.0006	0.0032	0.0010	0.0013	0.0009	0.0012
39	TRAILER COACHES (SIC 3791)	0.0049	0.0032	0.0049	0.0053	0.0049	0.0039	0.0047
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0004	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001
41	INSTRUMENTS (SIC 38)	0.0005	0.0005	0.0008	0.0005	0.0007	0.0006	0.0005
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0012	0.0008	0.0018	0.0014	0.0082	0.0023	0.0013
43	TRANSPORTATION SERVICES (SIC 40-7)	1.0483	0.0177	0.0158	0.0167	0.0187	0.0141	0.0445
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0549	1.1178	0.0586	0.0625	0.1746	0.0652	0.0680
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1891	0.1106	1.1624	0.1808	0.1874	0.1575	0.1626
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.1786	0.1106	0.1813	1.3403	0.1990	0.1861	0.1563
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0458	0.0383	0.0523	0.0656	1.0894	0.0492	0.0546
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.1243	0.0883	0.1124	0.1284	0.1314	1.1240	0.1059
49	GOVERNMENT ENTERPRISES	0.0263	0.0771	0.0232	0.0307	0.0423	0.0201	1.0140
50	UNALLOCATED INDUSTRIES	0.0150	0.0113	0.0147	0.0186	0.0367	0.0228	0.0137
51	HOUSEHOLDS	0.8335	0.5366	0.8007	0.8764	0.8349	0.6521	0.7882
52	TOTAL LOCAL PURCHASES	2.7162	2.2579	2.5955	2.9498	3.0643	2.4622	2.7016

TABLE 4. TOTAL REQUIREMENTS (DIRECT, INDIRECT, AND INDUCED) PER DOLLAR OF DELIVERY TO FINAL DEMAND, GEORGIA, 1970

(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) 50	51
1	LIVESTOCK & LIVESTOCK PROD. (SIC 013)	0.0308	0.0250
2	FIELD CROPS (SIC 011)	0.0030	0.0040
3	OTHER CROPS (SIC 012, 019)	0.0039	0.0036
4	FORESTRY, FISHING, AG. SERV. (SIC 07-9)	0.0028	0.0031
5	STONE & CLAY MINING (SIC 14 EXC 147)	0.0006	0.0007
6	OTHER MINING (SIC 10-3, 147)	0.0000	0.0000
7	CONTRACT CONSTRUCTION (SIC 15-7)	0.0099	0.0145
8	MEAT PRODUCTS (SIC 201)	0.0331	0.0203
9	DAIRY PRODUCTS (SIC 202)	0.0143	0.0137
10	CANNED & PRESERVED FOODS (SIC 203)	0.0053	0.0060
11	GRAIN MILL PRODUCTS (SIC 204)	0.0059	0.0062
12	BEVERAGES (SIC 208)	0.0165	0.0152
13	FOOD PRODUCTS, NEC (SIC 205-7, 209)	0.0158	0.0212
14	FABRIC MILLS (SIC 221-4, 2261-2)	0.0035	0.0021
15	YARN & THREAD MILLS (SIC 2269, 228)	0.0017	0.0012
16	FLOOR COVERINGS (SIC 227)	0.0005	0.0015
17	MISC. TEXTILE GOODS (SIC 229)	0.0004	0.0006
18	FABRICATED TEXTILE PRODUCTS (SIC 225, 23)	0.0038	0.0128
19	LUMBER & WOOD PRODUCTS (SIC 24)	0.0026	0.0028
20	FURNITURE & FIXTURES (SIC 25)	0.0012	0.0044
21	PULP & PAPER MILLS (SIC 261-3)	0.0127	0.0027
22	PAPER PRODUCTS EXC CONTAINERS (SIC 264)	0.0047	0.0009
23	PAPERBOARD CONTAINERS & BOXES (SIC 265)	0.0042	0.0025
24	PRINTING & PUBLISHING (SIC 27)	0.0925	0.0102
25	CHEMICALS & CHEM. PROD. (SIC 281, 286-9)	0.0039	0.0031
26	PLASTICS DRUGS & PAINTS (SIC 282-5)	0.0034	0.0061
27	PETROLEUM PRODUCTS (SIC 29)	0.0001	0.0002
28	RUBBER & PLASTICS PRODUCTS (SIC 30)	0.0024	0.0026
29	LEATHER & LEATHER PRODUCTS (SIC 31)	0.0009	0.0016
30	STONE, CLAY & GLASS PRODUCTS (SIC 32)	0.0024	0.0030
31	PRIMARY IRON & STEEL (SIC 331-2, 3391,9)	0.0013	0.0002
32	NONFERROUS METAL MFG. (SIC 333-6, 3392)	0.0080	0.0008
33	FABRICATED METAL PRODUCTS (SIC 34)	0.0061	0.0030
34	MACHINERY, EXCEPT ELECTRICAL (SIC 35)	0.0050	0.0012
35	ELEC. TRANSMISSION EQUIP. (SIC 361-2)	0.0003	0.0002
36	MISC. ELECTRICAL EQUIP. (SIC 363-9)	0.0014	0.0010
37	MOTOR VEHICLES & EQUIP. (SIC 371)	0.0026	0.0033
38	AIRCRAFT & PARTS (SIC 372)	0.0037	0.0011
39	TRAILER COACHES (SIC 3791)	0.0018	0.0082
40	OTHER TRANSPORT EQUIP. (SIC 373-5, 3799)	0.0003	0.0001
41	INSTRUMENTS (SIC 38)	0.0007	0.0007
42	MISC. MANUFACTURING (SIC 39, 19, 21)	0.0067	0.0014
43	TRANSPORTATION SERVICES (SIC 40-7)	0.1117	0.0165
44	COMMUNICATIONS & UTILITIES (SIC 48-9)	0.0228	0.0566
45	WHOLESALE & RETAIL TRADE (SIC 50-9)	0.1096	0.2466
46	FINANCE, INS., REAL ESTATE (SIC 60-6)	0.0679	0.2228
47	BUSINESS SERVICES (SIC 73, 81, 89)	0.0189	0.0329
48	OTHER SERVICES (SIC 70-2, 75-80, 82-6)	0.1342	0.1715
49	GOVERNMENT ENTERPRISES	0.0082	0.0157
50	UNALLOCATED INDUSTRIES	1.0073	0.0087
51	HOUSEHOLDS	0.2988	1.3887
52	TOTAL LOCAL PURCHASES	2.1003	2.3734

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Many excellent bibliographies on regional input-output studies now exist. We have found the ones by Bourque and Cox (7) and by Hewings (20) particularly useful and refer the reader to them for more complete references. We list here only a fraction of the sources which have contributed to our education and, specifically, only the publications referred to in the notes of the next section.

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NOTES

This book has been written for use by persons unfamiliar with input-output analysis. It was not intended to be a research document; as a consequence, we have not footnoted the text. Although much of what we have said is common knowledge in the economics profession, it seems proper to note here the sources most helpful to us and to comment on or explain certain parts of the text. Numbers in parentheses indicate references from the preceding list.

Chapter 1. Introduction and Highlights

This chapter summarizes the remainder of the study and has appeared in slightly modified form in Introducing the Georgia Economic Model (46).

Chapter 2. The Georgia Input-Output Table

Another version of this chapter has been documented in detail as "Gross State Product Accounts and State Input-Output Models" (45).

The highly aggregated five-industry transactions table presented here is the basis for our explanation of the logic of input-output models in Chapter 4. It is intended to be a realistic illustration; readers are too frequently unable to associate with the numerical "straw men" used to illustrate economic concepts.

The notion of an input-output table as a double-entry accounting system for an economy appears throughout the literature. We were first introduced to the "quadrant" sectoring of a transactions table by Marvin Hoffenberg, one of the architects of the 1947 U.S. input-output study, at a meeting of the Western Regional Science Association several years ago. Good discussions appear in Miernyk, et al. (35), Fuerst (17), and Liebling (31).

The format for our "transfers" quadrant is derived from a similar presentation for Hawaii in William A. Schaffer, et al. (48). Reviews of other input-output tables, especially those for Boulder (35), West Virginia (36), Washington (3,6), and Kansas (16), were helpful in forming our approach to this quadrant as were the writings of Charles L. Leven on regional income and product accounts (29, 30), the well-documented accounts for Hawaii (49, 50), and Barnard's work on social-accounting systems (2).

Chapter 3. Input-Output Relations in the Georgia Economy

This chapter has no particular source in the literature. Simple reviews of economic-base theory may be seen in Isard (24) and Tiebout (53). We have tried to provide a simple description of the Georgia economy based on the

transactions table; the task has not been easy and, if we have succeeded, credit is due to William W. Nash for his continued insistence on our writing something understandable and useful.

Chapter 4. The Logic of Input-Output Models

Much of this explanation of input-output models is based on a similar review for the interindustry model of Hawaii (48). That, in turn, had several origins. Our presentation of an economic model as a set of relations evolved from lectures at Duke University by the late Charles Ferguson. The clearest outline of an input-output model as the solution of a set of simultaneous equations is in Isard (24). And although the distinction between regional production coefficients and technical coefficients is common to most discussions, we have enjoyed the comments of Bourque and Cox (7). An abbreviated version of this chapter appeared in the Atlanta Economic Review (44).

Chapter 5. Economic Multipliers for Georgia Industries

The simple explanation of the multiplier concept through a modified step diagram is derived from Schaffer (48). The multipliers calculated here are common to the literature, especially the output and employment multipliers, which are clearly explained in Miernyk (34). Our income multipliers differ from those commonly used and follow a pattern set in Mississippi by Carden and Whittington (9) and in Washington by Bourque (5). Sometimes called "income coefficients," they differ in their denominators from the Types I and II income multipliers originated by Moore and Peterson (37) and Hirsch (21). Our government-income multipliers follow ideas developed by Bahl and Shellhammer (1).

Chapter 6. Economic Projections

This chapter presents a simple projection model constructed after reading the excellent discussions by Tiebout (51) and Miernyk (36). But since it is intended only to establish the framework for later and more sophisticated studies in Georgia, our model does not incorporate any of their innovative approaches to accounting for technological change. We rely almost entirely on national projections by the Bureau of Labor Statistics (54, 55) for data with which to account for the effects of productivity change and to establish potential changes in final demand. Comparisons were made with projections by Graham, et al. (19).

To allocate projected changes to the various regions of Georgia, we use regional shift-share projections. While this violates the "purity" of the model, it is the most effective way to examine regional change. After our work had been completed, we discovered that a similar means had been used in projections of the Kansas economy by Emerson (15).

Chapter 7. Economic Intelligence

The self-sufficiency analysis is patterned after a similar analysis in the Mississippi study by Carden and Whittington (9), the only regional application of this tool with which we are familiar. We also benefited from a description by Leontief (28). Obviously, the concept of self-sufficiency is deficient in many ways and skyline charts can easily be misinterpreted by the unwary reader.

A skyline chart does not prescribe steps to development, and it does not set self-sufficiency as a goal; rather it simply provides a focus for orderly discussion. Carden and Whittington make this clear, and the interested reader is referred to them.

Our "income-per-employee index" was developed out of frustration in our attempts at using conventional multipliers in identifying industries to promote in the State. The literature is filled with discussions of multipliers as powerful analytic tools, yet they are grossly inadequate in the face of a sponsor's skepticism. More than just area-income expansion or job creation is involved in formulating a development strategy, and our index is intended to at least hint at per-capita income as a major concern in outlining a strategy. Many other factors are involved, of course, and our purpose is simply to place the Georgia Economic Model and its interindustry relationships in the context of development planning.

Chapter 8. Impact Analysis

The development simulators of this chapter are "turn-key" devices. They have been designed to make the most of minimum information; like all short cuts, they should be interpreted carefully, with one eye on our strong assumptions and the other on available information. The simulators originated with readings of Tiebout (52) and then Clark and Coupe (11), Gamble and Raphael (18), Lindberg (33), Bourque (4), and Miernyk (36).

Chapter 9. A Market Information System for Georgia

The literature frequently refers to the usefulness of input-output tables in identifying markets for businessmen. To make the tasks involved as simple as possible, we designed our "instant market analysis." Our intent has been to relieve the busy decision-maker of as many reading chores as possible; though a picture of simplicity to the economist, an input-output table is frequently overwhelming to a layman. We claim credit for designing the market information system with little assistance from the literature. But two references which stimulated us are Rapkin (39) and Cleland (12).

Appendix A. Constructing the Transactions Table

Most data sources have been noted in the text and are not listed here. Our procedures have developed over several years, starting with work on nonsurvey techniques by Schaffer and Chu (42, 43). The evolution of these techniques to a survey-based procedure is documented in the Hawaii study (48) and Schaffer (40, 41). The experience of Laurent in constructing the Charleston model (22, 27) has meant a great deal to this study.

We spent many hours analyzing other studies, especially those of Washington (3,6), West Virginia (36), Kansas (16), New Mexico (32,33), and Utah (8); our debt to their authors is substantial. We also made good use of the Philadelphia working papers (26) and wish that the excellent documentation of the Philadelphia experience by Isard and Langford (25) had been available earlier.

An example of the use of our aggregation program is the 65-sector model emphasizing forest products in Elrod, El-Sheshai, and Schaffer (14).

Appendix B. A Mathematical Summary of the Model and Associated Analytical Tools

The contents of this appendix are common, but we found Miernyk (34) and Chenery and Clark (10) especially helpful. The formulae for the self-sufficiency analysis are drawn from Carden and Whittington (9).

Appendix C. Interview Form

See studies noted for Appendix A.

Appendix D. Income and Product Accounts for Georgia, 1970

See notes on Chapter 2.

Appendix E. Industry Definitions and List of Available Market Analyses

The codes used here are derived from definitions stated by the National Economics Division (38). A somewhat clearer list of industries for which market analyses are available appears in Introducing the Georgia Economic Model (46).

Appendix F. Projections of Employment Growth in Georgia: A Shift-Share Analysis

See notes following the appendix itself.

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