

1-1-1979

The 1975 West Virginia Input Output Study Modeling A Regional Economy

Anthony L. Loviscek
West Virginia University

Randy E. Holliday
West Virginia University

Lucinda A. Robinson
West Virginia University

Melissa A. Wolford
West Virginia University

Follow this and additional works at: https://researchrepository.wvu.edu/rri_ioacctdata

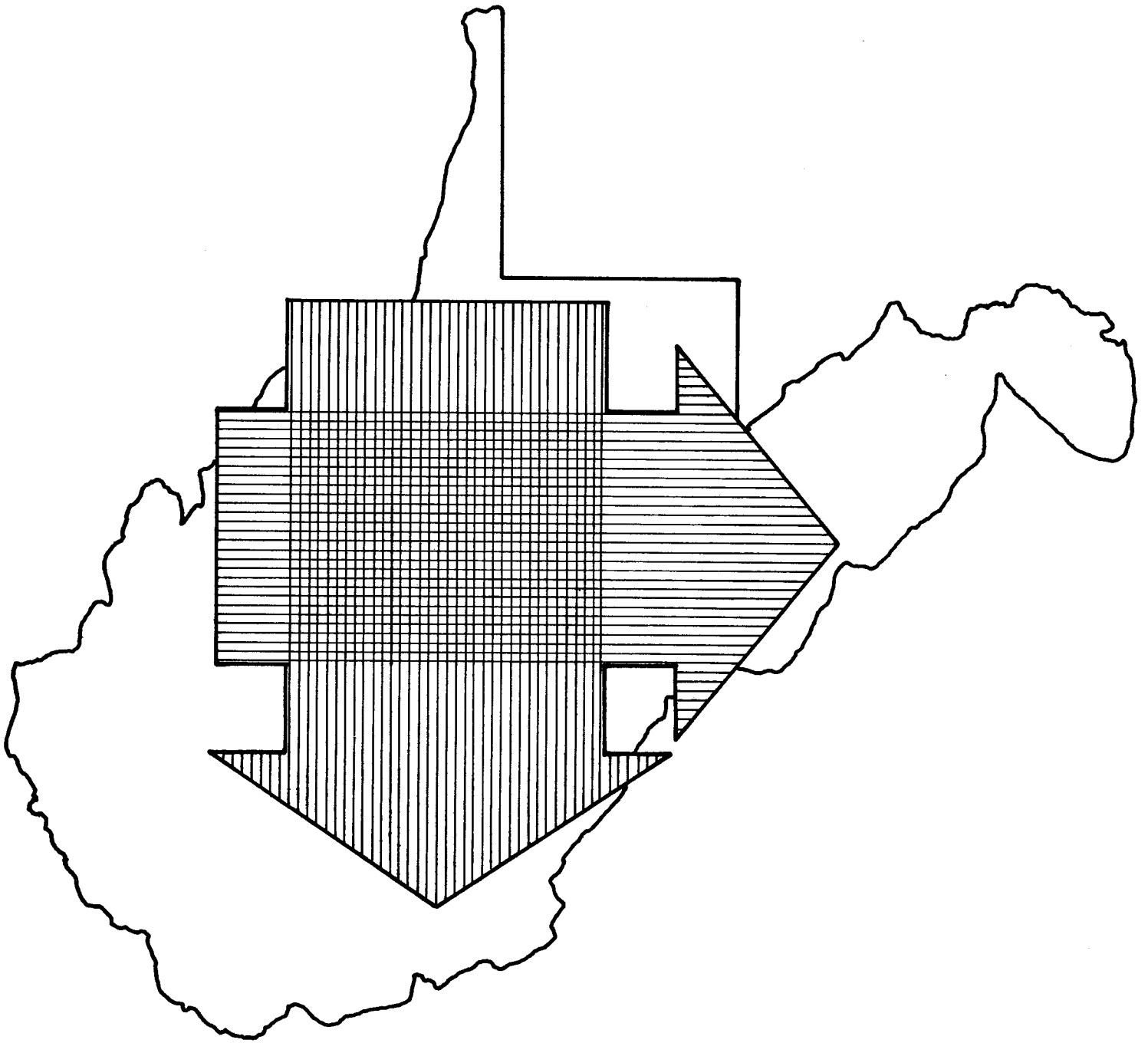
Recommended Citation

Loviscek, Anthony L.; Holliday, Randy E.; Robinson, Lucinda A.; and Wolford, Melissa A., "The 1975 West Virginia Input Output Study Modeling A Regional Economy" (1979). *Accounts and Data*. 155.
https://researchrepository.wvu.edu/rri_ioacctdata/155

This Other is brought to you for free and open access by the RRI Input-Output Archive at The Research Repository @ WVU. It has been accepted for inclusion in Accounts and Data by an authorized administrator of The Research Repository @ WVU. For more information, please contact beau.smith@mail.wvu.edu.

THE 1975 WEST VIRGINIA INPUT-OUTPUT STUDY

Modeling A Regional Economy



THE 1975 WEST VIRGINIA INPUT-OUTPUT STUDY
Modeling A Regional Economy

ANTHONY L. LOVISCEK
RANDY E. HOLLIDAY
LUCINDA A. ROBINSON
MELISSA A. WOLFORD

With Contributions by
Frank Giarratani
James D. Maddy
Charles F. Socher

and a
Forward by William H. Miernyk

West Virginia University Library
1979

© 1979 by West Virginia University Foundation
Morgantown, West Virginia
ISBN Number 0-930284-01-1

ACKNOWLEDGEMENTS

This study would not have been possible without the assistance of many persons. It is impossible to acknowledge them all individually, but we would like to mention a few who helped us considerably. It is a great pleasure to acknowledge the cooperation of the businessmen across the state who took time from busy work schedules to provide the basic information needed for this study. We can't thank them publicly because the confidentiality of the data they provided dictates that they remain anonymous.

Special thanks are due John D. Hurd, Executive Vice-President of the West Virginia Chamber of Commerce; Edwin K. Wiles, President of the West Virginia Coal Association; and Robert R. Bowers, Executive Director of the West Virginia Petroleum Council. They supported our study enthusiastically, and spent a great deal of valuable time encouraging their members to participate in the study.

Many state officials also provided valuable assistance. We can mention only the few who helped us considerably. Former Governor Arch A. Moore, Jr. supported our efforts wholeheartedly, and encouraged West Virginia businesses and state officials to assist us. Former State Treasurer Ronald G. Pearson and former State Auditor John M. Gates also supported us and provided helpful information. The following state employees gave a great deal of assistance in the

Finally, we would like to thank Dr. Robert Munn, dean of the West Virginia University Library, who made publication of the study possible. We are deeply grateful to all those mentioned here, and to the many others we couldn't mention. The authors accept the responsibility, however, for any errors that remain.

A. L. L.
R. E. H.
L. A. R.
M. A. W.

latter stages of the study by providing control totals and sources of secondary information: Gale Gray and Arnold Margolin of the West Virginia Tax Department; William Spencer of the Department of Agriculture; and Ed Howard of the Public Service Commission.

We also wish to thank several members of the Regional Research Institute staff for their enthusiastic assistance and support throughout the study. Jodi Evans and Alan Mierke, both presently Research Aides, and Patty Henry, a former Research Aide, did much of the keypunching. Neal Duffy, a Graduate Research Assistant, assisted with computer programming for the final tables which appear in the study. Carla Uphold and Jean Gallaher did all the typing efficiently and cheerfully.

We also owe a debt of gratitude to Dr. William H. Miernyk, Director of the Institute, who initiated the study. He provided advice and assistance as the study progressed. Most importantly, it was he who introduced us to input-output economics and instructed us on its techniques and uses.



FOREWORD

by

William H. Miernyk

This volume, in spite of its modest size, is the result of a major research effort. Three years of work went into the tables which account for most of its bulk. Although the project was under my general direction, the tables were constructed by the authors of this report, with very substantial assistance from the collaborators whose names appear on the title page. Many others contributed in a number of ways, but the authors and their collaborators deserve any encomiums which this volume might receive.

I am not attempting to dodge responsibility for any shortcomings in the 1975 West Virginia input-output study. Some of the basic decisions were made by me—including the decision to restrict this report to the essentials; to the tables and their documentation. But those who did the actual work deserve credit for putting together a transactions table under less than optimal conditions.

This is the second set of input-output tables for West Virginia. Both are survey-based. Data for the first tables were obtained from personal interviews with representatives of a sample of West Virginia establishments. The first tables were part of a larger, and relatively well-financed, study. The present study was conducted under tight budget constraints, and the data were obtained by a mail survey. It will come as no surprise that the mail survey was less productive than the 1965 interviews.

As the authors point out, however, enough useable returns were received to permit them to construct a "first round" transactions table. They had to rely far more heavily on secondary sources to fill gaps than was the case when the 1965 tables were constructed. As I have pointed out elsewhere (Miernyk, 1976), constructing a transactions table is a lot like putting together a large and complex puzzle. In my judgment, the authors of this report did an outstanding job of finding the missing pieces of the puzzle.

One thing which the mail survey demonstrated clearly is that this is a feasible way to collect input-output data. Establishments don't maintain their records on an input-output basis. But if they are willing to do so, the purchasing, sales, and accounting departments of large establishments can make the

necessary breakdowns. Some of the respondents to the mail survey were enthusiastic about the study, and they devoted the time and energy required to develop careful estimates of purchases and sales by origin and destination. In some cases there were a number of telephone contacts between respondents and staff members to clear up questions that were not answered completely by the instructions that accompanied the mail questionnaire.

It is more difficult for the manager of a small establishment to provide the detailed data that can be obtained from cooperating large business organizations. The respondent is the manager (often the owner-manager) who is always pressed for time. In many cases small establishments rely on outside accountants to handle much of their record keeping. The respondent has to turn to his accountant for help in completing the questionnaire, and this involves a charge for the extra service. This makes it difficult to elicit useable responses from filling stations, independent drug stores, restaurants, and a wide range of similar small establishments.

Fortunately, there appears to be relatively little variation among small establishments, in a given sector, in terms of the origin of purchases and destination of sales. Many serve essentially local markets, and most deal with a limited number of wholesalers. The basic problem is that of estimating the markup in these sectors, and that can be done on the basis of a limited number of responses. Finally, large establishments are able to provide some data on purchases from small establishments in the state, even if small establishments are not able to accurately trace the destination of their sales. I'm not suggesting that there is no problem in working out transactions between sectors containing a large number of small establishments and those dominated by a relatively small number of large producers. There are indeed problems, particularly in the reconciliation of the purchases and sales matrices, but they can be dealt with by the kind of patient, systematic work described in this report.

Although this study has demonstrated that regional input-output tables can be constructed by a care-

fully-conducted mail survey, an important question remains: How to increase the response rate? One possibility, I think, would be to conduct a survey at, say, five-year intervals under the aegis of state government. We feel that support from former Governor Arch Moore, who was then in office, and Mr. John Hurd, Executive Secretary of the West Virginia Chamber of Commerce, did much to stimulate interest in and cooperation with the 1975 study. But I feel that if the study had been conducted by a state agency the returns might have been even better. Perhaps the most important way to encourage participation in studies of this kind, however, is to demonstrate their usefulness to establishments in the private sector since they must provide the bulk of data on inter-industry transactions.

The 1965 tables were used by at least two agencies of state government. They were also used by one of the state's larger trade associations, and several firms indicated that they found the tables useful. Other researchers in West Virginia made use of the 1965 model, and discussed their work with members of the Institute staff. We hope there were many other users that we don't know about. The input-output model is not a general purpose model, and it doesn't give push button answers to complex economic problems. But it is a versatile analytical tool. Used properly it can shed an amazing amount of light on the ways in which changes in one part of the economy affect other parts.

Ideally, in my view, state input-output tables should be constructed by the U. S. Department of

Commerce. The Interindustry Economics Division of the Bureau of Economic Analysis has the responsibility for constructing and publishing national input-output tables. If input-output data were collected for each state, 50 separate tables could be published for use at the state level. These could be aggregated to obtain internally-consistent national tables. The state tables could also be combined to form regional tables, provided the regions followed state boundaries. Useable and reliable interindustry-interregional models could be constructed from the basic state data.

Who needs more detailed regional input-output data than that now available? One of the major users of such detailed data would be government itself. Since the advent of environmental legislation, there has been a growing interest in impact studies. And as the omnibus Energy Act of 1978 begins to take effect, there will be a need for other kinds of impact studies. The best tool for analyzing the regional impacts of environmental and energy legislation is still the input-output model.

Although the most economical—and clearly the most efficient—way to construct state input-output tables would be to have a single federal agency do the job, one would have to be an incurable optimist to expect that this is going to happen in the near future. If state input-output tables serve a useful purpose, however, as I believe they do, there are unlimited opportunities to experiment with new methods of obtaining more and better data on interindustry transactions on a limited budget. I believe this report makes a contribution to that continuing effort.

THE 1975 WEST VIRGINIA INPUT-OUTPUT STUDY

tained in the 1975 tables. The two sets of tables can thus be used for analyzing changes in the West Virginia economy over the past decade.

As in the 1965 study, this one is based on survey-generated data. Unlike the 1965 study, however, we were forced to rely on a mailed questionnaire. The mail questionnaire did not yield the quantity or quality of data collected by field interviewers in 1965, particularly for a number of service sectors. However, data obtained from the state's dominant industries—coal, chemicals, electric utilities, and primary metals—were sufficiently detailed and reliable to allow us to go ahead with the transactions table. A much larger effort was made this time than in 1965 to use secondary data to supplement the mail returns. The 1975 tables could not have been completed without the active support of the individuals and agencies mentioned in the acknowledgments section of this report.



The interindustry framework of the West Virginia economy in 1975 is given in the transactions table (Table 1). This table shows the flow of sales and purchases among sectors. Each row gives the distribution of output from the sector at the left to other sectors and to final users. The columns show the value of each industry's purchases of inputs—raw materials, semi-finished goods, and services—and its final payments. Each column shows at a glance how much the sector at the top depends on other West Virginia sectors for its inputs, and also how much it pays to households and the three levels of government. Finally, it shows the relative importance of imports, from whatever source.

All state economies are "open" compared with the national economy. The import row and the export column of Table 1 show this. Not only does West Virginia import much of what it needs to produce goods and services, but several sectors are major exporters to national and international markets. These internal

It has been ten years since the original 1965 West Virginia input-output tables were constructed. The transactions table and the tables derived from it given here describe the structure of the West Virginia economy in 1975.

Input-output economics—a branch of econometrics—provides a simple, but highly-detailed empirical model which can be used for making economic impact studies and for forecasting. It can also be used to simulate the economic impacts of alternative economic policies, and thus can be a powerful tool of policy analysis. The I/O model is a flexible, analytical device. It can be used in the study of a variety of issues including those dealing with energy, the environment, technological change, and regional economic development.

The transactions table gives a complete, detailed description of the structure of the state economy. The table of direct coefficients shows technical relationships among the processing sectors, as well as their dependence on imports whether from other states or outside the U. S. This table also shows the relative importance of "primary" inputs which consist basically of payments to households and government. The final table—direct and indirect requirements (per dollar of delivery to final demand)—can be used for analytical purposes, such as making impact studies. The Type I and Type II income multipliers, discussed later in this report, were calculated from the data in Tables 2 and 3.

This study is less detailed than the 1965 study which included tables of capital and labor coefficients, as well as a detailed discussion of comparative static and dynamic models. Much of the 1965 study also consisted of applications of the two basic models to specific problems. This is a far less ambitious study designed only to update the basic tables. The 1975 sectoral classifications and definitions have been re-

The 1965 tables, with projected tables for 1975, are given in William H. Miernyk, et al., *Simulating Regional Economic Development* (Lexington, Mass.: D. C. Heath and Company, 1970).

and external linkages have a great deal to do with the size of the income multipliers to be discussed in a later section.

It is relatively easy to derive West Virginia's gross product from the transactions flow.² In each processing sector, total demand must equal total final payments, although the individual row and column sums of each need not balance.

Input-output accounting is similar to a system of double-entry bookkeeping. From the income side, gross product can be derived by summing the producers' purchases of primary inputs. Alternatively, from the product side, one can sum the sales of goods and services to final users to get the same result. Interindustry flows are not included in these calculations because double counting is avoided when estimating gross product. We double count deliberately, however, to obtain total gross outlays (or output) in the final row and final column of the transactions table.

An interesting characteristic of the transactions table is the wide variation in sales patterns among sectors. Such industries as glass (19), primary metal products (21) and transportation equipment (25), show more than nine-tenths of their sales going to final demand. Conversely, petroleum and natural gas (4), logging and sawmills (14), and all other services (41), exhibit a high degree of interdependence with other processing sectors. Each row can be viewed as a marketing profile of the sector at the left. Each column is a recipe of the combined establishments production requirements. In the language of economics, each column is an aggregate or sector production function.

It is important to remember that the input and output flows are expressed in producers' prices. Also, the demand characteristics and product-mixes they reveal are unique to 1975. The technical relationships among industries change slowly, however. In the national economy they may remain almost constant for as long as a three-year period.³ Regional economics are more volatile. A large new plant can significantly change the technical relationships and trade patterns for an entire sector. Or a major change in the price of one input—coal or oil, for example—can affect these relationships. In the "open" regional model,

²For a general discussion of the relationship between gross product and final demand, see U. S. Department of Commerce, *Survey of Current Business*, 57 (February 1974): 24-26.

³See Anne P. Carter, *Structural Change in the American Economy* (Cambridge, Mass.: Harvard University Press, 1970).

changes in trade relationships can influence the entire column of input (direct) coefficients. These caveats must be kept in mind by anyone using the 1975 tables to analyze the West Virginia economy in future years.

Sectoring the West Virginia Economy

The sectoring scheme for the 1975 West Virginia tables is identical with that of the 1965 tables. It is based on the Standard Industrial Classification.⁴ The identity of sectoral makeup permits sector-by-sector comparisons between the original 1965 coefficients, the projected 1975 coefficients, and those derived from this study.⁵ While the relative importance of the various sectors changed between 1965 and 1975, there were no basic structural changes which would have required re-definition.

Changes in the values added and final demand portions of the table were unavoidable. Value added and final demand are more highly aggregated in the 1975 transactions table than they were in the 1965 table. There are no separate value added sectors for local, state, or federal governments; nor is there a gross savings row. The mail survey did not provide sufficient reliable data for the breakdowns given in the 1965 table. Rather than risk reporting dubious information, a "catch-all" category—all other final payments—was used. For similar reasons, exports and net inventory change were combined in the final demand segment.

The Sample Survey

A total of 11,613 business establishments employing four or more workers comprised the population for the 1975 input-output study. Selected firms operating these establishments were asked, by letter, to participate in the study. A total of 391 agreed to participate. They were then sent the input-output questionnaire with detailed instructions.⁶ Unfortunately, only 169 useable returns were received from cooperating respondents. And these constitute the rather thin sample on which interindustry transactions in the 1975 tables are based.⁷ The sectors covered by the res-

⁴Miernyk, et al., *op. cit.*, pp. 2-3.

⁵Comparison with national sectors can be made by reference to the detailed industrial classification of the 1967 tables. See *Survey of Current Business* (February 1974): 34-37.

⁶As in the 1965 study, the final questionnaire and instructions were the result of a pilot study in which several local firms cooperated. The painstaking work of devising a questionnaire and instructions that would elicit as much detailed data as possible from each respondent was done by Dr. Frank Giarratani, now on the faculty of the University of Pittsburgh. The questionnaire and instructions are given in Appendix A.

The original request for cooperation was accompanied by letters from former Governor Arch Moore, and from Mr. John Hurd, Executive Secretary of the West Virginia Chamber of Commerce. We feel that these letters contributed to the initial response from firms willing to cooperate. A telephone survey of a small sample of non-respondents after the cutoff date for returns indicated that most of them could have completed the questionnaires. They were either unable or unwilling to assign staff to this task, however. Only a few firms replied that their records were kept in such a way that they could not have completed the questionnaire.

Cf. *Stimulating Regional Economic Development*, pp. 10-15.

The 169 respondents accounted for 35.9 percent of total employment in the sectors they represented. The largest employment coverage was in primary metals (sector 21) where sample establishments accounted for 96 percent of that sector's total employment. At the other end, there was no response from bakeries (sector 11). The relative coverage of other sectors is given in Table 1. Respondents accounted for a smaller proportion (10.5 percent) of the total population of establishments. Primary metals again had the highest rate at 36.8 percent. Dairies had the lowest response rate, excluding bakeries which did not

respond to the mail survey. The results were disappointing because of data deficiencies. The results were disappointing because of data deficiencies. The results were disappointing because of data deficiencies. The results were disappointing because of data deficiencies.

A stratified random sample of 102 non-respondent establishments was drawn from the coal mining and manufacturing sectors for comparison with the 169 respondent establishments. Differences between the means of the two samples in each sector were analyzed using t and F statistics. A discriminant analysis was later used in an effort to identify some of the factors that might have accounted for an establishment's decision to respond or not to respond to the mail survey.

Because of a lack of secondary data at the establishment level, only the non-respondents in the two coal mining and in 19 manufacturing sectors could be included in the tests. Thus the sample tests are not as comprehensive as those made in the 1965 study.

The following data were collected for both the respondents and non-respondents in selected sectors:

- (1) primary output, as defined for the West Virginia input-output sectors,
- (2) location of the establishment, and
- (3) the size of the establishment, in terms of employment.

The following data were collected for both the respondents and non-respondents in selected sectors: characteristics of the respondents and the non-respondents who had originally agreed to participate.

Establishments % of Respondents	Total	Sector	Total	Establishments % of Respondents
2.9	515	2. Coal mining, underground	15	2.9
3.0	515	3. Coal mining, strip	15	3.0
14.7	34	9. Food & kindred products, n.e.c.	5	14.7
8.0	13	10. Food & kindred products, dairies	1	8.0
0.0	17	11. Food & kindred products, bakeries	0	0.0
8.6	35	12. Food & kindred products, beverages	3	8.6
8.7	46	13. Apparel & accessories	4	8.7
4.9	164	14. Logging & sawmills	8	4.9
13.4	82	15. Furniture & other wood fabrication	11	13.4
16.2	105	16. Printing & publishing	17	16.2
29.6	54	17. Chemicals	16	29.6
31.3	54	18. Petroleum	5	31.3
37.5	40	19. Glass	5	37.5
12.5	88	20. Stone and clay products	11	12.5
36.8	38	21. Primary metal products	14	36.8
15.3	85	22. Fabricated metal products	13	15.3
5.3	131	23. Machinery, except electrical	7	5.3
34.8	23	24. Electrical machinery & apparatus	8	34.8
14.3	21	25. Transportation equipment	3	14.3
15.4	13	26. Instruments & related products	2	15.4
11.3	97	27. All other manufacturing	11	11.3
10.5	1617	TOTAL	169	10.5

TABLE 2

Employment % of Respondents	Total	Sector	Total	Employment % of Respondents
8.2	4,510	2. Coal mining, underground	51,856	8.2
40.6	662	3. Coal mining, strip	4,284	40.6
0.5	4	9. Food & kindred products, n.e.c.	1,631	0.5
0.0	0	10. Food & kindred products, dairies	849	0.0
0.0	0	11. Food & kindred products, bakeries	1,898	0.0
10.4	120	12. Food & kindred products, beverages	1,152	10.4
21.5	1,007	13. Apparel & accessories	4,685	21.5
5.5	191	14. Logging & sawmills	3,466	5.5
37.4	807	15. Furniture & other wood fabrication	2,155	37.4
29.8	1,276	16. Printing & publishing	4,284	29.8
51.7	9,925	17. Chemicals	19,182	51.7
32.9	279	18. Petroleum	849	32.9
72.0	8,123	19. Glass	11,287	72.0
9.9	614	20. Stone and clay products	6,217	9.9
96.2	22,794	21. Primary metal products	23,705	96.2
31.3	3,175	22. Fabricated metal products	8,549	31.3
15.0	933	23. Machinery, except electrical	6,238	15.0
21.6	1,124	24. Electrical machinery & apparatus	5,211	21.6
35.3	1,032	25. Transportation equipment	2,924	35.3
49.8	425	26. Instruments & related products	853	49.8
29.3	2,790	27. All other manufacturing	9,514	29.3
35.9	59,791	TOTAL	166,505	35.9

TABLE 1

participate at all. The response rates for all sectors included in the test are given in Table 2.

Employment was the only variable available for non-respondents and respondents. Thus we tested differences between employment means in respondent and non-respondent establishments by employment. The results are given in Table 3. In terms of the t-statistic, the differences are non-significant at the .01 level for all 19 sectors. Two of the food and kindred products sectors—dairies and bakeries (sectors 10 and 11)—were not included because of an insufficient number of degrees of freedom due to the small number of respondents. Differences in the F-statistics are not significant at the .01 level for all sectors except 23 (non-electrical machinery). Again, sectors 10 and 11 were excluded due to an insufficient number of degrees of freedom for testing purposes. In spite of the small number of useful responses, the mail survey provided an acceptable base of the sales and purchases data needed to construct a preliminary transactions table. The results of the t- and F-tests indicate that the responding establishments in the mail survey are representative of all establishments in the coal mining and in most of the manufacturing sectors.

TABLE 3

Sector	t-Statistics	F-Statistics
2. Coal mining, underground	.3092°	3.46°
3. Coal mining, strip	.4688°	1.32°
9. Food & kindred products, n.e.c.	.9487°	715.76°
10. Food & kindred products, dairies	---	---
11. Food & kindred products, bakeries	---	---
12. Food & kindred products, beverages	.7427°	254.63°
13. Apparel & accessories	.8447°	1.11°
14. Logging & sawmills	.6581°	4.06°
15. Furniture & other wood fabrication	.0565°	4.93°
16. Printing & publishing	.0383°	1.07°
17. Chemicals	1.3365°	3.01°
18. Petroleum	.5704°	33.89°
19. Glass	1.8887°	3.52°
20. Stone & clay products	.5635°	2.27°
21. Primary metal products	.1532°	1.42°
22. Fabricated metal products	.7470°	2.24°
23. Machinery, except electrical	.8934°	217.85°
24. Electrical machinery & apparatus	.4509°	1.15°
25. Transportation equipment	.3418°	1.75
26. Instruments & related products	.0270°	5.18°
27. All other manufacturing	1.1365°	1.20°

°Significant at the .01 level



The discriminant analysis made as part of this study was not successful, but the approach will be described briefly since under other conditions it could be helpful.⁹ It provides discriminant function coefficients for each factor used in the analysis. Each coefficient represents the relative contribution of that factor to the discriminant function. A combination of factors may then be related to the respondents and non-respondents for future surveys thus reducing the non-response rate and the cost of the survey.

Three factors were used for the discriminant analysis:

- (1) sector classification,
- (2) location of the establishment, and
- (3) employment in the establishment.

Once again, the lack of secondary data for non-respondents limited the factors that could be included in the analysis.

The 21 coal mining and manufacturing sectors were aggregated into eight sectors as shown in Table 4. Counties were used as the location factor, and were classified as urban or rural. An urban county was defined as one with a population greater than 100 persons per square mile. The average number of employees in each establishment in 1975 was used as the employment factor.

TABLE 4

Discriminant Analysis Sector Classification	West Virginia I/O Sector Classification
S ₁	2, 3
S ₂	9, 10, 11, 12
S ₃	14, 15
S ₄	17
S ₅	19, 20
S ₆	21, 22
S ₇	23, 24
S ₈	13, 16, 18, 25, 26, 27

Various combinations of factors were tested. The most satisfactory results were obtained when all of the factors were included. This analysis yields several measures of the success with which the discriminating variables can actually separate the respondent and non-respondent groups when combined in the discriminant function. The first of these is Wilk's lambda. This statistic is an inverse measure of the discriminating power remaining in the original vari-

⁹For a concise discussion of the elements of discriminant analysis see J. Johnston, *Econometric Methods*, 2nd Edition (New York: McGraw-Hill, 1972): 334-340. A more detailed presentation is given in Peter A. Lachenbruch, *Discriminant Analysis* (New York: Hafner Press, 1975).

ables that has not been removed by the discriminant function. The larger the lambda, the less useful the information remaining. Lambda can be transformed into a chi-squared statistic for an easy test of significance.

In the present analysis, Wilk's lambda was .9805 after the discriminant function was derived. This corresponds to a chi-square of 5.205 with a probability of .98. A lambda of this size or smaller has a .93 probability of occurring due to sampling chance. Clearly, there is an insignificant amount of information remaining in the discriminant variables, far too little to produce a high degree of separation between the respondent and non-respondent groups.

The second measure used to judge the usefulness of the discriminant function was its associated canonical correlation. This is a measure of the association between the discriminant function and the grouping variable. The larger the correlation, the better the function's ability to discriminate between the groups. Our analysis produced a canonical correlation of only .14. This low coefficient indicates the weak association between the discriminant function and the grouping variable. The discriminant function is not able to accurately distinguish between respondents and non-respondents.

It is important also to look at the predictive value of the discriminant function when it is used for classification purposes. Fifty-one percent of the non-respondents were correctly classified by this function, while 59.2 percent of the respondents were correctly classified. The results are not much different from those one would obtain from flipping a coin. The predictive level is too low to warrant the use of this technique when not more data than we had are available. The inability of the discriminant function to separate the respondent and canonical correlation suggests the need for further examination of the discriminant function coefficients. The coefficients represent the relative contribution of each factor to the function; the larger the coefficient the greater that factor's importance. The following coefficients were derived (in decreasing order of importance):

S ₁	2.41720
S ₂	2.04543
S ₃	1.99721
S ₄	1.86757
S ₅	1.48709
S ₆	1.28483
S ₇	1.15964
S ₈	0.84718
S ₉	0.14777
Location	-0.13046

The next step was to limit the analysis to the most important factors (those whose coefficients were greater than 1). Several combinations of the factors produced chi-square statistics, canonical correlations, and predictive values that were less significant than the original results. Discriminant analysis proved to be a poor tool for selecting respondents in future surveys, assuming use of the same sets of data. The failure of discriminant analysis in this case is no doubt due to data deficiencies. Response or non-response must depend upon additional factors that could not be included in this analysis because of the lack of information for non-respondents.

IV

It is unrealistic to assume that even the best organized firms can provide more than reasonable estimates of interindustry flows. Few firms maintain detailed records of the origins of purchases and the destination of sales. They could, but there is no legal or other compelling reason for them to do so. Data collected in input-output surveys thus reflects to some extent the judgments of staff members of responding establishments. At various stages in the building of a transactions table the input-output analyst must also resort to judgment. Total objectivity is unattainable.¹⁰

One of the more important steps involved in putting together a transactions table is the reconciliation of purchases and sales data. The general procedure is to construct one table based on sales data and another based on purchases. Sampling variation alone will guarantee that the two will not be the same. Thus it is necessary to reconcile all differences so that each cell contains the best possible estimate of purchases and sales. This process inevitably involves judgment, but judgment does not preclude following an orderly procedure. Indeed, as Jensen and McGunaghl have pointed out, an orderly procedure is essential.¹¹ In their view the input-output analyst must (1) use only methods that imply confidence in the estimates, (2) use techniques compatible with the theoretical underpinnings of the input-output model, and (3) exercise judgment in an unequivocal and logical manner.

¹⁰On this point see William H. Miernyk, "Comments on Recent Developments in Regional Input-Output Analysis," *International Regional Science Review*, Vol. 1, No. 2 (Fall 1976): 47-55.

¹¹R. C. Jensen and D. McGunaghl, "Reconciliation of Purchases and Sales Estimates in an Input-Output Table," *Urban Studies*, 13 (February 1976): 61-62.

V

Reconciliation of the 1965 purchase and sales tables was based in large measure on "reliability quotients" calculated for each pair of cells.¹² These quotients could not be replicated in the present study, however, since they were based in part on interviewers' judgments of the relative reliability of purchase and sales data collected in each interview. Thus a different procedure had to be followed in the present study. The method we used was developed by Jensen and McGuarr in the construction of an Australian input-output table.¹³ It utilizes reliability weights assigned to each pair of estimates in the same cell of the two tables.

Reliability weights embody the level of confidence a researcher establishes for each of the estimates. If the analyst feels that both estimates are equally reliable for example, each entry is assigned a weight of .50. In other cases weights of .75 and .25 might be used; or if one estimate is thought to be highly dependable, .90 and .10 might be employed. The weights must sum to one, of course. After this step, weighted averages of the flows are derived from the following: $w_{ij} = c w_{ij} P_{ij} + r w_{ij} S_{ij}$, where $c w_{ij}$ and $r w_{ij}$ are the column and row weights respectively. The column weights represent purchases; the row weights sales.

The step described in the last paragraph produced a single interindustry flow matrix from the independently-derived purchase and sales matrices. This approach works well if the paired estimates in the original purchase and sales tables are not too far apart, and if the column sums and row sums in the original tables differ by no more than, say 15 percent. Larger differences would require almost completely subjective reconciliation, or the equally dubious approach of simply "splitting the difference." The 1975 West Virginia tables were within these limits.

The initial transactions generated by using Jensen-McGuarr reliability quotients are not those given in Table I. As in the 1965 study, an additional step remained. This was to check the original estimates of interindustry flows with industry experts. Because of the interdependence of the cells of an input-output table, changes in a few cells will affect many others. Thus if industry experts are skeptical about many entries the entire table might have to be reconstructed. In the 1975 table, however, only a few major adjustments had to be made in the utilities sectors. Other changes suggested by reviewers were minor in nature.

Most of the time and effort involved in the construction of a survey-based input-output system is devoted to the estimation of interindustry flows. But this effort would be wasted if accurate control totals were not available. These are needed to "blow up" the sample transactions, as well as to estimate final demand and total gross output by sector. The primary source of control totals for the 1975 West Virginia transactions table was the Research and Statistics Division of the West Virginia State Tax Department. West Virginia collects a Business and Occupations Tax from every establishment in the state based on sales volume. Since these are recorded by Standard Industrial Classification, they could be aggregated to the West Virginia input-output sectors. Special runs were made by the Tax Department to generate a first round set of control totals.

The Business and Occupations Tax approximates a transactions tax, with the rate varying by industry. The published rate is not always the rate used, however, since there are circumstances under which the actual payment—and hence the recorded collections—can be negotiated. There were a number of cases, therefore, where the State Tax Department controls were supplemented or replaced by estimates from other sources.¹⁴ The last step, as in the case of the interindustry flow estimates, was to check with industry experts and, where necessary, to make final adjustments.

The 1975 table follows the convention of recording all transactions in producers' prices. The objective is to achieve as much sectoral homogeneity as possible. This required a number of difficult adjustments and imputations. Transportation costs, for example, had to be shifted from such sectors as coal and primary metals to one of the three transportation sectors. Also, the trade and service sectors were adjusted to record margins rather than gross flows.

Failure to margin sectors whose function is to provide time and place utility would grossly overstate the total output of those sectors. A retail establishment, for example, might have annual sales running into the millions. But this establishment's contribution to state output is limited to its aggregate markup. An interesting case is provided by sector 47—gas companies and systems. In addition to producing and selling natural gas, both within and outside West Vir-

¹²Simulating Regional Economic Development, p. 18.

¹³Jensen and McGuarr, *op. cit.*

¹⁴The complete list of sources used to adjust interindustry flows and control totals is given in the last section of the bibliography.

gina, this sector provides off-season storage of natural gas destined for transshipment. Gas is piped into the state for storage in worked-out coal mines during the summer months. In the winter this gas is pumped to final consumers. The total value represented by the gas held in storage would be a very large number. But the amount entered in the transactions table represents the smaller storage and transshipment charges only.

VI

The input-output system can be used for a variety of purposes. One of the more important is to show the total direct and indirect effects after equilibrium is reached following a change in one or more components of final demand. The results of the 1965 study which were used most often and most widely are the income and employment multipliers.¹⁸

We were not able to update the employment multipliers within the budget constraints of this study. New employment multipliers would have required new tables of labor coefficients, or sectoral employment-production functions. We were able, however, to calculate new income multipliers which we hope will be as useful as those derived from the 1965 study. We also calculated output multipliers, something which was not done in 1965.

The income and output multipliers are given in Table 5. The Type I multipliers measure the direct and indirect changes in income due to an increase of one dollar's worth of sales to final demand by each of the processing sectors. The Type II multipliers estimate the direct and indirect requirements in output for all sectors due to a one dollar increase in the final demand of one processing sector.

Ordinarily, Type II multipliers are calculated using two sets of matrices—one with households as part of the value-added portion of the table, and the second with households included as a processing sector. There is a short-cut method for computing Type II multipliers which gives the same results, provided the

¹⁸Simulating Regional Economic Development, pp. 193-198.

¹⁹Illustrative calculations of both types are given in William H. Miernyk, *The Elements of Input-Output Analysis* (New York: Random House, 1965): 47.

²⁰The method and its justification are described in I. E. Brady and J. P. Gander, "Input-Output Multipliers: Some Theoretical Comments," *Journal of Regional Science*, 9 (1969): 309-317.

TABLE 5
OUTPUT AND INCOME MULTIPLIERS,
WEST VIRGINIA, 1975

Out-put Type	I	II
1. Agriculture	1.44	2.07
2. Coal mines (underground)	1.16	1.43
3. Coal mines (strip and auger)	1.86	2.71
4. Petroleum and natural gas	1.40	1.73
5. All other mining	1.30	1.73
6. Building contractors	1.72	2.17
7. Non-building contractors	1.51	1.78
8. Special contractors	1.34	1.50
9. Food products (n.e.c.)	1.50	2.78
10. Food products (dairies)	1.52	1.19
11. Food products (bakeries)	1.24	1.79
12. Food products (beverages)	1.19	1.61
13. Apparel and accessories	1.13	1.37
14. Logging and sawmills	1.46	1.73
15. Furniture and wood fabrication	1.30	2.11
16. Printing and publishing	1.52	1.99
17. Chemicals	1.31	1.75
18. Petroleum products	1.50	2.60
19. Glass	1.25	1.48
20. Stone and clay products	1.37	1.70
21. Primary metals	1.10	1.40
22. Fabricated metals	1.21	1.55
23. Machinery (except electric)	1.17	1.39
24. Electric machinery	1.32	1.78
25. Transportation equipment	1.18	1.50
26. Instruments and products	1.04	1.39
27. All other manufacturing	1.19	1.69
28. Restaurants and bars	1.34	1.72
29. Wholesale trade	1.18	1.36
30. Retail food stores	1.31	1.64
31. Auto service stations	1.18	1.45
32. All other retail	1.28	1.46
33. Banking	1.17	1.49
34. Other finance	1.27	1.78
35. Insurance agents	1.52	1.64
36. Real estate	1.45	2.10
37. All other FIRE	1.57	3.47
38. Hotels and lodgings	1.52	1.79
39. Medical and legal services	1.19	1.44
40. Educational services	1.22	1.47
41. All other services	1.23	1.51
42. Railroads	1.11	1.39
43. Trucking and warehousing	1.17	1.55
44. All other transportation	1.25	1.62
45. Communications	1.14	1.38
46. Electrical systems	1.43	2.01
47. Gas systems	1.18	1.75
48. Water and sanitary services	1.43	1.94

Income and output multipliers are useful analytical tools, but they must be used cautiously—particularly in a development context. Income multipliers are simply ratios. A large multiplier shows that the indirect (or indirect plus induced) effect is large relative to the direct effect. But the direct effect in a given sector might be small because that sector purchases most of its inputs out of state. Such an activity would not be a particularly good development target. The basic usefulness of output multipliers is as in-

dicators of the structural interdependence among sectors. When income or output multipliers are used in any context, they should be related to the size and the structure of the sector or sectors being analyzed.¹⁸

¹⁸For a graphical interpretation of the components of income and employment multipliers see **Simulating Regional Economic Development**, pp. 196-197. For a discussion on output multipliers see Harry W. Richardson, **Input-Output and Regional Economics** (New York: John Wiley & Sons, 1972): 32-42.

TABLE I

INTERINDUSTRY FLOWS OF GOODS AND SERVICES, WEST VIRGINIA, 1975
(THOUSANDS OF DOLLARS)

	1	2	3	4	5	6	7	8
	AGRICULTURE	COAL MIN UNDER	COAL MIN STRIPBAU	PETROL & NAT GAS	ALL OTHER MINING	GEN CONT BLDG	GEN CONT NON-BLDG	SP TRADE CONTR'S
1. AGRICULTURE	17881	0	0	0	416	0	0	0
2. COAL MINING	516	21601	88275	0	0	303	0	218
3. PETROLEUM + MINING	0	65032	115522	0	10	4	0	7
4. GENERAL CONTRACTORS (BUILDING)	3125	1430	61	5282	4240	2	0	0
5. GENERAL CONTRACTORS (NON-BUILDING)	635	743	0	62	0	2339	6602	1364
6. SPECIAL TRADES CONTRACTORS	0	114	0	0	0	8088	67	0
7. FOOD + KINDRED PRODUCTS + N.E.C.	1146	3805	0	11	0	5687	14340	727
8. FOOD + KINDRED PRODUCTS (DAIRIES)	1391	6580	215	346	4842	54699	12268	7335
9. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	0	0	0	0	0
10. APPAREL + ACCESSORIES	0	0	0	0	0	0	0	0
11. LOGGING + SAWMILLS	0	0	0	0	0	0	0	0
12. FURNITURE + OTHER WOOD FABRICATION	780	28610	491	0	654	948	643	4508
13. PRINTING + PUBLISHING	344	600	17	15	141	1136	359	86
14. CHEMICALS	10	2174	17	356	374	440	279	450
15. PETROLEUM	672	0	0	10	1140	0	331	86
16. GLASS	0	4291	74	0	562	462	47979	1172
17. STONE + CLAY PRODUCTS	0	14562	0	0	0	0	335	495
18. PRIMARY METAL PRODUCTS	1954	2002	2523	0	86	25493	19255	2337
19. FABRICATED METAL PRODUCTS	50	21401	30	0	956	4090	4762	3765
20. MACHINERY (EXCEPT ELECTRICAL)	469	1888	237	686	426	5887	1075	15672
21. ELECTRICAL MACHINERY + APPARATUS	0	0	1189	0	0	193	7494	608
22. TRANSPORTATION EQUIPMENT	0	57	122	0	33	259	51	231
23. INSTRUMENTS + RELATED PRODUCTS	10	314	0	0	0	17	3	2
24. ALL OTHER MANUFACTURING	158	457	153	55	447	3931	747	6431
25. EATING + DRINKING ESTABLISHMENTS	8947	10214	9225	3069	3218	2210	2519	3310
26. WHOLESALE TRADE	0	0	0	0	0	0	0	0
27. RETAIL FOOD STORES	1942	10271	351	906	98	0	179	2115
28. RETAIL GASOLINE SERVICE STATIONS	357	0	811	1229	229	156	647	147
29. ALL OTHER RETAIL	847	0	5718	448	526	804	1631	3248
30. BANKING	1539	0	1698	354	49	154	0	179
31. INSURANCE AGENTS + BROKERS	1548	25492	4476	8885	1466	1264	10473	4642
32. OTHER FINANCE	0	8812	0	380	27	951	76	2408
33. REAL ESTATE	0	0	0	70	91	56	139	640
34. ALL OTHER FIN + INSUR + REAL ESTATE	105	2746	1790	1751	2	266	887	216
35. MEDICAL + LEGAL SERVICES	1865	11930	0	0	1168	926	199	2653
36. HOTELS + OTHER LODGING PLACES	4645	1945	11358	3115	366	100	1147	0
37. EDUCATIONAL SERVICES	2623	10528	3660	527	1792	127	9765	2268
38. TRUCKING + WAREHOUSING	634	10528	3660	252	5	68	1023	526
39. ALL OTHER TRANSPORTATION	379	4549	1422	371	114	691	1283	284
40. COMMUNICATIONS + SYSTEMS	781	41743	7332	485	318	308	3115	422
41. ELECTRIC COMPANIES AND SYSTEMS	184	57	39	132	0	506	3031	4372
42. GAS COMPANIES AND SERVICES	85	85	52	66	3	5929	31	142
43. WATER + SANITARY SERVICES								
44. RAILROADS								
45. HOUSEHOLDS	38408	972974	94942	30279	29651	94285	138420	147271
46. ALL OTHER FINAL PAYMENTS	51863	981614	53304	9788	38126	13572	36538	22001
47. IMPORTS	24118	5913332	37898	22595	10075	7208	74224	23788
48. TOTAL FINAL PAYMENTS	114389	2545920	186144	62662	77852	115065	249182	193060
49. TOTAL FINAL GROSS OUTLAY	173740	2861100	438900	92459	101839	244509	399897	263493

TABLE I (CONTINUED)

INTERINDUSTRY FLOWS OF GOODS AND SERVICES, WEST VIRGINIA, 1975
(THOUSANDS OF DOLLARS)

	9	10	11	12	13	14	15	16
	FOOD&KIN MEAT&NEC	FOOD&KIN DAIRIES	FOOD&KIN BAKERIES	FOOD&KIN BEVERAGES	APPAREL& ACCESSORIS	LOGGING& SAWMILLS	FURNITURE WOOD FAB	PRINTING & PUBLISH
1. AGRICULTURE (UNDERGROUND)	16415	14023	615	0	0	5390	7	0
2. COAL MINING (STRIP + AUGER)	0	7	0	181	48	106	519	121
3. COAL MINING + NATURAL GAS	0	0	0	0	0	0	0	0
4. PETROLEUM + NATURAL GAS	4	0	0	0	0	0	0	0
5. ALL OTHER MINING	4	0	35	0	3	54	105	0
6. GENERAL CONTRACTORS (BUILDING)	0	19	0	0	0	669	0	0
7. GENERAL CONTRACTORS (NON-BUILDING)	149	395	12	2	1555	0	0	0
8. SPECIAL TRADES CONTRACTORS + N.E.C.	7211	871	85	0	0	0	0	0
9. FOOD + KINDRED PRODUCTS (DAIRIES)	0	864	577	0	0	0	0	0
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0	0	89	0	0	0	0	0
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	452	0	0	0	0
12. FOOD + ACCESSORIES	0	0	0	70	0	0	9194	0
13. APPAREL + ACCESSORIES	0	0	0	0	0	0	434	0
14. FURNITURE + SAWMILLS	0	0	0	1	0	0	86	0
15. FURNITURE + OTHER WOOD FABRICATION	170	146	174	704	323	2	403	34
16. PRINTING + PUBLISHING	0	0	0	141	5	161	96	178
17. CHEMICALS	0	0	0	573	0	0	0	14
18. PETROLEUM	38	0	0	0	0	0	0	0
19. GLASS	0	0	0	0	0	0	0	0
20. STONE + CLAY PRODUCTS	0	0	0	457	0	471	772	0
21. PRIMARY METAL PRODUCTS	0	0	0	0	0	16	45	0
22. FABRICATED METAL PRODUCTS	0	0	0	0	0	0	0	0
23. MACHINERY (EXCEPT ELECTRICAL)	0	11	0	0	2	0	0	0
24. ELECTRICAL MACHINERY + APPARATUS	9	0	0	0	5	16	0	0
25. INSTRUMENTS + RELATED PRODUCTS	0	0	0	0	0	0	0	0
26. TRANSPORTATION EQUIPMENT	263	0	0	0	0	0	0	0
27. ALL OTHER MANUFACTURING ESTABLISHMENTS	58	122	327	472	435	309	51	300
28. EATING + DRINKING	3126	161	2096	172	237	378	214	637
29. WHOLESALE TRADE	0	965	0	751	0	0	0	5638
30. RETAIL FOOD STORES	308	82	477	425	21	452	68	444
31. RETAIL GASOLINE SERVICE STATIONS	486	111	766	63	0	0	0	3266
32. ALL OTHER RETAIL	719	33	533	26	62	340	128	290
33. BANKING	1261	0	247	0	0	87	0	28
34. OTHER FINANCE	255	365	1533	817	743	2214	312	2001
35. INSURANCE AGENTS + BROKERS	0	110	0	0	0	1271	4	2783
36. REAL ESTATE FIN + REAL ESTATE	0	14	2	0	0	1092	0	359
37. ALL OTHER FIN + REAL ESTATE	0	49	36	103	3	51	9	20
38. HOTELS + OTHER LODGING PLACES	767	0	0	151	2	361	129	377
39. MEDICAL + LEGAL SERVICES	0	49	0	0	0	0	0	110
40. EDUCATIONAL SERVICES	0	2153	3124	439	459	1207	1148	3773
41. ALL OTHER SERVICES	6	0	0	0	2	119	0	0
42. RAILROADS	799	328	131	602	673	721	184	898
43. TRUCKING + WAREHOUSING	558	63	223	551	120	331	138	574
44. ALL OTHER TRANSPORTATION	177	116	482	743	1843	874	312	1409
45. COMMUNICATIONS	1068	359	1968	139	641	1042	363	507
46. ELECTRIC COMPANIES + SYSTEMS	295	92	1919	156	278	273	502	632
47. GAS COMPANIES AND SERVICES	158	95	87	428	63	50	194	126
48. WATER + SANITARY SERVICES								
49. HOUSEHOLDS	10471	16197	15014	12116	37363	44309	10929	42319
50. ALL OTHER FINAL PAYMENTS	46273	17757	40980	20165	13264	14128	27257	23076
51. IMPORTS	4940	2878	8650	15787	16135	15188	16999	36457
52. TOTAL FINAL PAYMENTS	61684	36832	64644	48068	66762	73625	55215	101852
53. TOTAL GROSS OUTLAY	96000	58400	80200	56700	74300	109640	70650	160500

10

TABLE I (CONTINUED)
 INTERINDUSTRY FLOWS OF GOODS AND SERVICES, WEST VIRGINIA, 1975
 (THOUSANDS OF DOLLARS)

	CHEMICAL	PETRO·UM	GLASS	STONE & CLAY	PRIMARY METALS	FABRIC·D METALS	MACHIN·Y EXC ELEC	ELEC MACH INERY
1. AGRICULTURE (UNDERGROUND)	34610	0	0	137	0	0	0	0
2. COAL MINING (STRIP + AUGER)	297	3639	120	2165	37922	200	18	0
3. PETROLEUM + NATURAL GAS	13037	0	0	0	76	0	0	0
4. ALL OTHER MINING	1971	9056	0	0	0	0	0	0
5. GENERAL CONTRACTORS (BUILDING)	502	10672	5119	10384	6774	67	0	0
6. GENERAL CONTRACTORS (NON-BUILDING)	1004	0	41	0	669	48	18	0
7. SPECIAL TRADES CONTRACTORS	15901	11	0	206	167	2835	44	0
8. FOOD + KINDRED PRODUCTS (DAIRIES)	353	0	0	0	86	96	0	0
9. FOOD + KINDRED PRODUCTS (BAKETTES)	0	0	0	0	0	0	0	0
10. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	0	0	0	0	0
11. FOOD + KINDRED PRODUCTS (BREADS)	0	0	0	0	0	0	0	0
12. APPAREL + ACCESSORIES	0	0	0	0	0	0	0	0
13. APPAREL + SAMMILLS	37	0	0	87	0	0	0	0
14. LOGGING + SAWMILLS	0	57	6	0	0	0	0	0
15. FURNITURE + OTHER WOOD FABRICATTON	0	1	155	0	0	3	7	221
16. PRINTING + PUBLISHING	0	80	933	1065	152	413	661	221
17. CHEMICALS	1487	80	5646	1065	152	413	661	221
18. PETROLEUM	225444	3849	3532	895	6576	501	0	253
19. GLASS	1487	5646	443	10197	137	0	0	4298
20. STONE + CLAY PRODUCTS	1487	3497	8589	5404	0	0	0	0
21. PRIMARY METAL PRODUCTS	1636	0	1247	0	0	0	0	0
22. FABRICATED METAL PRODUCTS	167	0	756	0	3836	219	8925	33124
23. MACHINERY (EXCEPT ELECTRICAL)	4742	871	113	4227	1431	236	3954	23
24. ELECTRICAL MACHINERY + APPARATUS	1432	0	98	124	1933	436	0	916
25. TRANSPORTATION EQUIPMENT	5932	0	0	162	487	9	2119	471
26. INSTRUMENTS + RELATED PRODUCTS	0	0	0	25	0	25	0	559
27. ALL OTHER MANUFACTURING	16477	58	12619	1666	6394	1422	29	154
28. EATING + DRINKING ESTABLISHMENTS	16464	35	0	4051	6820	3924	1524	996
29. WHOLESALE TRADE	11921	2740	4964	0	0	0	0	0
30. RETAIL FOOD STORES	0	0	0	0	0	0	0	0
31. RETAIL GASOLINE SERVICE STATIONS	0	22	750	1510	4536	927	92	45
32. ALL OTHER RETAIL	0	276	0	2990	1689	139	332	976
33. BANKING	3886	405	1427	879	30	236	743	240
34. INSURANCE AGENTS + BROKERS	929	110	0	0	0	501	0	0
35. OTHER FINANCE	6713	0	6176	1997	2237	1322	2013	1794
36. REAL ESTATE	4779	17	0	0	1461	824	0	451
37. ALL OTHER FIN + INSUR + REAL ESTATE	650	36	60	0	91	38	0	8
38. HOTELS + OTHER LODGING PLACES	3273	258	196	1425	2283	126	46	150
39. MEDICAL + LEGAL SERVICES	0	0	0	0	274	0	120	682
40. EDUCATIONAL SERVICES	0	0	0	0	0	0	0	191
41. ALL OTHER SERVICES	6490	476	4036	4338	30	1419	626	1886
42. RAILROADS	14618	102	82	964	6454	77	1018	193
43. TRUCKING + WAREHOUSING	13309	5481	1370	8658	12909	908	0	531
44. ALL OTHER TRANSPORTATION	7309	1940	63	556	943	229	1243	858
45. COMMUNICATIONS	8145	4176	994	1065	5374	827	743	1277
46. ELECTRIC COMPANIES + SYSTEMS	14896	1051	3682	2799	10047	3187	974	5105
47. GAS COMPANIES AND SYSTEMS	24121	2787	10191	6695	5267	3443	754	2771
48. WATER + SANITARY SERVICES	3682	49	123	144	15	400	29	808
49. HOUSEHOLDS	388121	21104	126918	80163	4394771	89948	83831	47490
50. ALL OTHER FINAL PAYMENTS	673786	49518	68524	62062	804664	141524	47635	83032
51. IMPORTS	341477	18876	56785	41622	150184	33681	28388	25553
52. TOTAL FINAL PAYMENTS	1403384	89498	252227	183847	1394319	265153	159854	156075
53. TOTAL GROSS OUTLAY	1859800	147000	316600	258700	1522400	323300	185900	215150

11

TABLE I (CONTINUED)

INTERINDUSTRY FLOWS OF GOODS AND SERVICES, WEST VIRGINIA, 1975
(THOUSANDS OF DOLLARS)

	25	26	27	28	29	30	31	32
	TRANSPORT EQUIPM	INSTRUMTS & PRODUCT	ALL OTHER MANUF	EATING & DRING ES	WHOLESALE TRADE	RETAIL FOOD STR	RETAIL GAS STAT	ALL OTHER RETAIL
1. AGRICULTURE	0	0	1066	1177	34	24	0	0
2. COAL MINING (UNDERGROUND)	0	0	261	23	565	0	66	3738
3. COAL MINING (STRIP + AUGER)	0	0	2305	51	0	0	15	1101
4. PETROLEUM + NATURAL GAS	0	0	61	0	0	0	0	96
5. ALL OTHER MINING	420	0	7	0	0	0	0	0
6. GENERAL CONTRACTORS (BUILDING)	0	0	0	0	0	0	0	651
7. GENERAL CONTRACTORS (NON-BUILDING)	0	0	524	21	678	0	0	160
8. SEECIAL TRADES CONTRACTORS	0	0	2517	10135	34	816	0	5635
9. FOOD + KINDRED PRODUCTS + N.E.C.	0	0	0	7075	0	17	0	0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0	0	0	8020	0	0	0	546
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0	0	0	5010	0	0	0	538
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	16	0	0	0	506
13. APPAREL + ACCESSORIES	0	0	0	0	0	0	0	0
14. LOGGING + SAWMILLS	13	22	7	0	0	0	0	0
15. FURNITURE + OTHER WOOD FABRICATION	78	53	12	129	83	101	15	1045
16. PRINTING + PUBLISHING	0	0	1369	225	393	12659	504	24142
17. CHEMICALS	5	0	179	0	830	63	0	0
18. PETROLEUM	0	0	184	211	93	0	3599	0
19. GLASS	0	0	81	0	0	0	0	7733
20. STONE + CLAY PRODUCTS	15426	0	14	0	0	0	0	56
21. PRIMARY METAL PRODUCTS	93	0	7415	0	0	0	0	0
22. FABRICATED METAL PRODUCTS	0	0	7415	0	34	0	0	32
23. MACHINERY (EXCEPT ELECTRICAL)	1991	0	2276	0	0	0	0	0
24. ELECTRICAL MACHINERY + APPARATUS	15	0	519	9	231	0	0	0
25. TRANSPORTATION EQUIPMENT	0	0	98	0	98	0	0	40
26. INSTRUMENTS + RELATED PRODUCTS	0	80	0	18	0	0	0	80
27. ALL OTHER MANUFACTURING	0	247	1564	0	476	1730	24	900
28. EATING + DRINKING ESTABLISHMENTS	11	0	4	1877	963	14	13	506
29. WHOLESALE TRADE	313	0	421	12657	7619	2438	1813	1985
30. RETAIL FOOD STORES	0	0	0	935	7678	31	0	0
31. RETAIL GASOLINE SERVICE STATIONS	38	6	142	21	4311	767	271	3143
32. ALL OTHER RETAIL	145	0	61	242	933	119	249	6511
33. BANKING	217	284	588	676	1848	353	598	8232
34. OTHER FINANCE	447	130	475	157	3273	6139	1558	2886
35. INSURANCE AGENTS + BROKERS	0	0	330	1652	5721	21956	921	8521
36. REAL ESTATE	0	0	14	145	14	0	31	1045
37. REAL ESTATE FIN + REAL ESTATE	1	2	17	0	516	0	0	1318
38. HOTELS + OTHER LODGING PLACES	128	0	202	30	899	332	89	4502
39. MEDICAL + LEGAL SERVICES	0	0	0	14	181	0	0	410
40. EDUCATIONAL SERVICES	870	312	1409	1057	3441	7673	2256	34979
41. ALL OTHER SERVICES	2368	324	1069	265	2561	249	249	2444
42. RAILROADS + WAREHOUSING	93	277	433	89	7471	2326	3785	13353
43. TRUCKING + TRANSPORTATION	5	100	692	939	4984	220	194	1969
44. ALL OTHER TRANSPORTATION	1138	128	1465	2441	3652	5161	2143	3746
45. COMMUNICATIONS	1348	172	879	4829	8410	9499	1480	7806
46. ELECTRIC COMPANIES + SYSTEMS	931	111	93	350	8253	6643	1308	7589
47. GAS COMPANIES AND SERVICES	299	0	0	0	206	840	367	1615
48. WATER + SANITARY SERVICES	0	0	0	0	0	0	0	0
49. HOUSEHOLDS	46310	7126	43273	62213	302097	101360	52783	437855
50. ALL OTHER FINAL PAYMENTS	75306	42739	139567	73113	23610	79467	27478	103275
51. IMPORTS	19456	14969	27435	39162	95881	88921	49199	90581
52. TOTAL FINAL PAYMENTS	141072	64834	210275	174488	421588	269748	129460	631711
53. TOTAL GROSS OUTLAY	167500	67100	246350	235000	491575	350400	151040	803950

TABLE I (CONTINUED)
 INTERINDUSTRY FLOWS OF GOODS AND SERVICES, WEST VIRGINIA, 1975
 (THOUSANDS OF DOLLARS)

	BANKING	OTHER FINANCE	INSURANCE AGENTS	REAL ESTATE	ALL OTHER FIRE	HOTELS & LODGING	MEDICAL & LEGAL	EDUCATIONAL SERVICES
1. AGRICULTURE	0	0	0	0	0	611	139	0
2. COAL MINING (UNDERGROUND)	0	0	0	0	0	398	856	1717
3. COAL MINING (STRIP + AUGER)	0	0	0	0	0	1425	0	1127
4. PETROLEUM + NATURAL GAS	0	0	0	0	0	0	0	0
5. ALL OTHER MINING	0	0	0	0	0	0	0	0
6. GENERAL CONTRACTORS (BUILDING)	126	4	0	7962	0	121	5	16098
7. GENERAL CONTRACTORS (NON-BUILDING)	0	4	0	252	0	380	0	18388
8. SPECIAL TRADES CONTRACTORS	1117	4	40	3952	0	2717	2502	24995
9. FOOD + KINDRED PRODUCTS (DAIRIES)	0	0	0	0	0	4	2165	367
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0	0	0	0	0	2	655	538
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	0	0	3	638	512
12. APPAREL + ACCESSORIES	0	0	0	0	0	31	2362	675
13. LOGGING + SAWMILLS	0	0	0	0	0	0	50	0
14. FURNITURE + OTHER WOOD FABRICATION	6	0	0	3	0	2	414	17
15. PRINTING + PUBLISHING	1386	2128	742	4147	418	221	50	1632
16. CHEMICALS	16	0	0	0	0	0	2054	0
17. PETROLEUM	0	0	0	0	0	0	1192	17
18. GLASS	0	0	0	0	0	0	0	0
19. STONE + CLAY PRODUCTS	0	0	0	105	0	0	0	555
20. PRIMARY METAL PRODUCTS	0	0	0	0	0	0	0	0
21. FABRICATED METAL PRODUCTS	0	0	0	0	0	0	0	0
22. MACHINERY (EXCEPT ELECTRICAL)	0	0	0	0	0	0	0	0
23. ELECTRICAL MACHINERY + APPARATUS	0	0	0	0	0	0	0	34
24. TRANSPORTATION EQUIPMENT	0	0	0	0	0	0	0	0
25. INSTRUMENTS + RELATED PRODUCTS	0	0	71	0	0	0	0	0
26. ALL OTHER MANUFACTURING	96	0	71	0	0	0	699	0
27. EATING + DRINKING ESTABLISHMENTS	34	0	71	282	23	25	845	401
28. WHOLESALE TRADE	126	118	841	4736	20	1	16	1404
29. RETAIL FOOD STORES	29	0	102	0	0	2643	6326	8382
30. RETAIL GASOLINE SERVICE STATIONS	528	0	0	0	0	550	1371	170
31. ALL OTHER RETAIL	22	318	277	122	0	884	884	0
32. BANKING	236	11129	420	11133	780	639	4288	9459
33. OTHER FINANCE	2412	485	1315	363	159	2430	1685	957
34. INSURANCE AGENTS + BROKERS	1189	798	1543	443	447	2018	2144	0
35. REAL ESTATE	1989	1493	698	11655	218	567	6712	5366
36. REAL ESTATE	1189	0	29706	644	66	4	139	401
37. ALL OTHER FINANCIAL SERVICES	41	11	232	280	30	354	201	427
38. HOTELS + OTHER LODGING PLACES	41	4423	492	644	44078	14	18173	2708
39. MEDICAL + LEGAL SERVICES	8316	349	0	5566	1994	5118	16605	19362
40. EDUCATIONAL SERVICES	105	10786	0	15485	0	114	403	23976
41. ALL OTHER SERVICES	8231	833	0	0	0	114	526	0
42. TRUCKING + WAREHOUSING	2166	2496	165	471	82	27	326	2366
43. ALL OTHER TRANSPORTATION	377	161	2170	4177	892	2518	520	7266
44. COMMUNICATIONS	717	202	420	651	303	3578	4131	5887
45. ELECTRIC COMPANIES + SYSTEMS	223	41	1874	2151	793	1421	1892	5955
46. GAS COMPANIES AND SYSTEMS								8049
47. WATER + SANITARY SERVICES								1452
48. HOUSEHOLDS	69372	37265	61619	45756	14948	30026	263225	409304
49. ALL OTHER FINAL PAYMENTS	22201	40042	301459	16012	20776	5300	111101	93172
50. IMPORTS	107462	51786	37380	62593	18977	6810	99069	209740
51. TOTAL FINAL PAYMENTS	199035	129093	400458	124361	105000	42136	473395	712216
52. TOTAL FINAL GROSS OUTLAY	230000	165000	447462	185655	14948	70700	559875	854480
53. TOTAL		13						

TABLE I (CONTINUED)

INTERINDUSTRY FLOWS OF GOODS AND SERVICES, WEST VIRGINIA, 1975
(THOUSANDS OF DOLLARS)

	41	42	43	44	45	46	47	48
	ALL OTHER SERVICES	RAILROADS	TRUCK & WAREHOUSES	ALL OTHER TRANSPORT	COMMUNICATIONS	ELEC CO. SYSTEMS	GAS CO. SYSTEMS	WATER & SANITARY
1. AGRICULTURE	0	0	0	0	0	0	0	0
2. COAL MINING (UNDERGROUND)	0	34	0	0	0	128749	797	0
3. COAL MINING (STRIP + AUGER)	0	0	0	0	0	350772	0	44
4. PETROLEUM + NATURAL GAS	61	0	2219	4393	0	0	19340	0
5. ALL OTHER MINING	0	2443	113	0	0	14	11	1540
6. GENERAL CONTRACTORS (NON-BUILDING)	69	1404	2756	0	1258	0	16	17
7. SPECIAL TRADES CONTRACTORS	2338	3051	584	485	0	0	11	4122
8. FOOD + KINDRED PRODUCTS + N.E.C.	0	0	0	0	0	0	0	0
9. FOOD + KINDRED PRODUCTS (DAIRIES)	38	0	0	0	0	0	0	0
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0	0	0	0	0	0	0	0
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	0	0	0	0	0
12. APPAREL + ACCESSORIES	0	247	0	0	0	0	0	3
13. LOGGING + SAWMILLS	130	0	15	133	7	58	17	2
14. FURNITURE + PUBLISHING	146226	43	2980	39	697	1830	258	57
15. PRINTING + PUBLISHING	3346	0	23	15	0	0	0	1086
16. CHEMICALS	1284	3821	352	933	455	1626	0	36
17. PETROLEUM	0	0	0	0	0	1641	276	282
18. GLASS	0	321	27	0	5634	0	0	222
19. STONE + CLAY PRODUCTS	161	2430	0	8741	285	0	0	506
20. PRIMARY METAL PRODUCTS	3600	365	0	3094	9	101	101	226
21. FABRICATED METAL PRODUCTS	723	704	0	550	0	167	0	346
22. MACHINERY (EXCEPT ELECTRICAL)	4824	26	0	19	901	172	0	0
23. ELECTRICAL MACHINERY + APPARATUS	169	3499	250	0	0	0	4	0
24. TRANSPORTATION EQUIPMENT	76	4	0	0	17	21	76	2
25. INSTRUMENTS + RELATED PRODUCTS	161	39	164	2753	51	581	71	71
26. ALL OTHER MANUFACTURING	14326	386	141	2727	147	2839	498	16
27. EATING + DRINKING ESTABLISHMENTS	0	0	22561	726	394	0	314	982
28. WHOLESALE TRADE	0	0	0	0	0	0	0	0
29. RETAIL FOOD STORES	2362	1021	1572	235	147	7	190	120
30. RETAIL GASOLINE SERVICE STATIONS	13864	0	2505	0	178	123	143	1931
31. ALL OTHER RETAIL	4031	0	1702	1044	746	210	285	44
32. BANKING	38	0	164	0	0	820	0	0
33. OTHER FINANCE	5270	9276	8011	0	317	0	71	308
34. INSURANCE AGENTS + BROKERS	3993	0	392	0	243	551	1109	0
35. REAL ESTATE	684	56	3	0	372	203	265	71
36. FIN INSUR + REAL ESTATE	1684	843	223	52	91	406	251	0
37. HOTELS + LODGING PLACES	14056	1708	35	0	0	1234	67	13
38. MEDICAL + LEGAL SERVICES	21935	0	0	0	0	0	0	0
39. EDUCATIONAL SERVICES	292	739	415	1522	5730	2244	359	64
40. RAILROADS	3862	2573	31	276	2113	9347	226	314
41. TRUCKING + WAREHOUSING	3000	2334	1058	549	1473	17067	332	200
42. ALL OTHER TRANSPORTATION	6270	1717	1752	693	1268	7037	1835	27
43. COMMUNICATIONS	2508	1486	1505	325	1803	3144	896	640
44. ELECTRIC COMPANIES + SYSTEMS	7853	439	1439	315	1436	25267	220	2495
45. GAS COMPANIES AND SYSTEMS	2054	108	262	11	0	791	1323	162
46. WATER + SANITARY SERVICES	319208	130460	112536	34019	109320	158520	32009	13247
47. HOUSEHOLDS	229812	160443	133109	49552	41760	115109	136421	12296
48. ALL OTHER FINAL PAYMENTS	79979	104789	93249	21851	68638	211350	26721	9740
49. IMPORTS								
50. TOTAL FINAL PAYMENTS	628999	395692	338894	105422	219718	484979	195151	35283
51. TOTAL GROSS OUTLAY	769400	434723	392168	132367	246362	726292	224625	51568

TABLE I (CONTINUED)
FINAL DEMAND AND TOTAL GROSS OUTPUT WEST VIRGINIA, 1975
(THOUSANDS OF DOLLARS)

	49	50	51	52	53	54	55
	HOUSE- HOLDS	LOCAL GOVT.	STATE GOVT.	FEDERAL GOVT.	EXPORTS INVENTORY	TOTAL FI- NAL DEMD	TOTAL GR- OUTPUT
1. AGRICULTURE	61955	64	1457	6423	45900	115799	173740
2. COAL MINING (UNDERGROUND)	3812	136	457	509	2528355	2533269	2861100
3. COAL MINING (STRIP + AUGER)	1064	146	0	0	215638	215638	438900
4. PETROLEUM + NATURAL GAS	0	0	0	0	37477	37477	92459
5. ALL OTHER MINING	25037	252	4903	0	136994	43886	101839
6. GENERAL CONTRACTORS (BUILDING)	80769	14481	38332	60699	13363	207644	244509
7. GENERAL CONTRACTORS (NON-BUILDING)	61994	17721	138218	113276	12089	343298	399897
8. SPECIAL TRADES CONTRACTORS	81354	11303	19672	3684	7913	123926	263493
9. FOOD + KINDRED PRODUCTS (DAIRIES)	46792	161	0	460	23445	70858	96000
10. FOOD + KINDRED PRODUCTS (N.E.C.)	36313	94	1736	0	9977	48120	58400
11. FOOD + KINDRED PRODUCTS (BAKERIES)	54260	69	0	0	16030	70359	80200
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	34666	5	0	0	14973	49644	56700
13. APPAREL + ACCESSORIES	28042	15	73	485	43633	71690	74300
14. LOGGING + SAWMILLS	17377	254	423	0	27321	45510	109640
15. FURNITURE + OTHER WOOD FABRICATION	12058	968	77	0	51878	65327	109640
16. PRINTING + PUBLISHING	22342	2741	421	0	11684	45692	160500
17. CHEMICALS	132192	128	948	1454	1442815	1603954	1859800
18. PETROLEUM	34369	1193	16213	27871	10027	62190	147000
19. GLASS	54615	94	248	0	240611	295568	316600
20. STONE + CLAY PRODUCTS	11526	11553	15108	7133	126459	171779	258700
21. PRIMARY METAL PRODUCTS	12127	156	0	0	1398782	1400155	1522400
22. FABRICATED METAL PRODUCTS	28283	133	0	3587	212876	224879	323300
23. ELECTRICAL MACHINERY (ELECTRICAL)	4256	20	0	3635	162864	1671140	185900
24. ELECTRICAL MACHINERY + APPARATUS	28371	3	0	0	167688	199697	215150
25. TRANSPORTATION RELATED PRODUCTS	0	22	3371	68563	90715	162671	167500
26. INSTRUMENTS + RELATED PRODUCTS	6029	0	0	24	51984	58037	67100
27. ALL OTHER MANUFACTURING	31386	0	0	0	152883	184269	246350
28. EATING + DRINKING ESTABLISHMENTS	195356	82	292	50	29320	225300	235000
29. WHOLESALE TRADE	158021	2318	4568	848	145540	311295	491575
30. RETAIL FOOD STORES	328807	188	0	0	13349	342344	350400
31. RETAIL GASOLINE SERVICE STATIONS	114132	1081	496	73	10336	126118	151040
32. ALL OTHER RETAIL	554746	1837	4203	242	164211	725239	803950
33. BANKING	93639	1262	4816	32161	32875	164753	230000
34. OTHER FINANCE	123750	499	2700	6156	15972	149077	165000
35. INSURANCE AGENTS + BROKERS	232910	1481	890	751	55684	290965	447462
36. REAL ESTATE	93870	40	4086	0	16340	115087	185655
37. ALL OTHER FIN. INSUR. + REAL ESTATE	9437	12864	16381	0	11761	50443	105000
38. HOTELS + OTHER LODGING PLACES	24913	383	438	121	38104	63959	70700
39. MEDICAL + LEGAL SERVICES	166495	25760	82821	438	69844	458941	559875
40. EDUCATIONAL SERVICES	57839	325784	374224	114021	12946	819265	854480
41. ALL OTHER SERVICES	481321	5760	6990	48472	34356	531153	769400
42. RAILROADS	14256	3003	4897	2726	337555	377559	434723
43. TRUCKING + WAREHOUSING	61619	20	4159	17848	183646	254267	392168
44. ALL OTHER TRANSPORTATION	14590	14590	2635	4823	41075	69412	132367
45. COMMUNICATIONS	72697	7264	2635	3848	41075	69412	132367
46. ELECTRIC COMPANIES + SYSTEMS	50595	4351	6525	1797	65390	150360	246362
47. GAS COMPANIES AND SYSTEMS	52575	1898	2024	741	496553	551811	726292
48. WATER + SANITARY SERVICES	24758	1407	613	145	39328	95045	224625
				48	1207	28033	51568
49. HOUSEHOLDS	82188	104421	486449	1203696	1083438	2960192	8866065
50. ALL OTHER FINAL PAYMENTS	2177135	20364	26881	506336	21384	2752100	8565717
51. IMPORTS	2780737	13019	172651	180494	25187	3172088	5992710
52. TOTAL FINAL PAYMENTS	5040060	137804	685981	1890526	1130009	8884380	23424492
53. TOTAL GROSS OUTLAY	8866065	599003	1459361	2423588	10076475	23424492	41644261

TABLE II

DIRECT REQUIREMENTS PER DOLLAR OF OUTPUT, WEST VIRGINIA, 1975

	1	2	3	4	5	6	7	8
	AGRICUL- TURE	COAL MIN UNDER	COAL MIN STRIP/EAU	PETROL & NAT GAS	ALL OTHR MINING	GEN CONT BLDG	GEN CONT NON-BLDG	SP TRADE CONTR'S
1. AGRICULTURE	0.10292	0.0	0.0	0.0	0.00409	0.0	0.0	0.0
2. COAL MINING (UNDERGROUND)	0.00297	0.00755	0.20113	0.0	0.0	0.00124	0.0	0.00083
3. COAL MINING (STRIP + AUGER)	0.0	0.02273	0.26321	0.0	0.00010	0.00002	0.0	0.00003
4. PETROLEUM + NATURAL GAS	0.0	0.00050	0.0	0.05713	0.0	0.00001	0.0	0.0
5. ALL OTHER MINING	0.01795	0.00026	0.00014	0.00068	0.04164	0.00957	0.01651	0.00518
6. GENERAL CONTRACTORS (BUILDING)	0.00366	0.00004	0.0	0.0	0.0	0.03308	0.00017	0.00276
7. GENERAL CONTRACTORS (NON-BUILDING)	0.0	0.00133	0.0	0.00012	0.0	0.02326	0.03586	0.00274
8. SPECIAL TRADES CONTRACTORS	0.00660	0.00230	0.00049	0.00375	0.04755	0.22371	0.03068	0.0
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00801	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13. APPAREL + ACCESSORIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14. LOGGING + SAWMILLS	0.00449	0.01000	0.00112	0.0	0.00643	0.00388	0.00161	0.01711
15. FURNITURE + OTHER WOOD FABRICATION	0.00198	0.00021	0.00004	0.00017	0.00139	0.00465	0.00090	0.00001
16. PRINTING + PUBLISHING	0.00006	0.00076	0.00004	0.00386	0.00368	0.00180	0.00070	0.00033
17. CHEMICALS	0.00387	0.0	0.0	0.0	0.01120	0.0	0.00083	0.00171
18. PETROLEUM	0.0	0.00150	0.00017	0.00011	0.00552	0.00189	0.11998	0.00445
19. GLASS	0.0	0.0	0.0	0.0	0.0	0.0	0.00084	0.00188
20. STONE + CLAY PRODUCTS	0.01125	0.00509	0.00575	0.0	0.00085	0.10402	0.04815	0.00887
21. PRIMARY METAL PRODUCTS	0.00029	0.00748	0.0	0.0	0.0	0.01673	0.01191	0.01429
22. FABRICATED METAL PRODUCTS	0.00270	0.00070	0.00007	0.00743	0.00939	0.02408	0.00269	0.05948
23. MACHINERY (EXCEPT ELECTRICAL)	0.0	0.00066	0.00054	0.0	0.00419	0.00079	0.01874	0.00231
24. ELECTRICAL MACHINERY + APPARATUS	0.0	0.0	0.00271	0.0	0.0	0.00106	0.00013	0.00088
25. TRANSPORTATION EQUIPMENT	0.00006	0.00002	0.00028	0.0	0.00033	0.00007	0.00001	0.00001
26. INSTRUMENTS + RELATED PRODUCTS	0.0	0.00011	0.0	0.00989	0.0	0.0	0.0	0.0
27. ALL OTHER MANUFACTURING	0.00091	0.00016	0.00035	0.00060	0.00439	0.01608	0.00187	0.02441
28. EATING + DRINKING ESTABLISHMENTS	0.0	0.0	0.00034	0.0	0.0	0.00106	0.00018	0.00062
29. WHOLESALE TRADE	0.05150	0.00357	0.02102	0.03320	0.03160	0.00904	0.00630	0.01258
30. RETAIL FOOD STORES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31. RETAIL GASLINE SERVICE STATIONS	0.01118	0.0	0.00080	0.00980	0.00097	0.0	0.00045	0.00803
32. ALL OTHER RETAIL	0.00206	0.00359	0.00185	0.01330	0.00225	0.00064	0.00162	0.00056
33. BANKING	0.02217	0.0	0.01303	0.00483	0.00517	0.00329	0.00408	0.01233
34. OTHER FINANCE	0.00488	0.0	0.0387	0.00383	0.00049	0.00063	0.0	0.00068
35. INSURANCE AGENTS + BROKERS	0.00886	0.00891	0.01020	0.09610	0.01440	0.00517	0.02619	0.01762
36. REAL ESTATE	0.00891	0.0	0.0	0.00412	0.00027	0.00389	0.00191	0.00914
37. ALL OTHER FIN, INSUR, + REAL ESTATE	0.0	0.00308	0.0	0.00076	0.00090	0.00023	0.0	0.00243
38. HOTELS + OTHER LODGING PLACES	0.0	0.0	0.0	0.0	0.00002	0.00109	0.00035	0.00082
39. MEDICAL + LEGAL SERVICES	0.00061	0.00096	0.00408	0.01894	0.00170	0.00301	0.00222	0.00099
40. EDUCATIONAL SERVICES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41. ALL OTHER SERVICES	0.01074	0.00417	0.02588	0.03370	0.01147	0.00379	0.00050	0.01007
42. RAILROADS	0.02674	0.00688	0.00530	0.00571	0.00360	0.00041	0.00287	0.0
43. TRUCKING + WAREHOUSING	0.01510	0.00389	0.00834	0.00273	0.01760	0.00052	0.02441	0.00861
44. ALL OTHER TRANSPORTATION	0.00365	0.00368	0.00001	0.00006	0.00005	0.00028	0.00256	0.00200
45. COMMUNICATIONS	0.00184	0.00159	0.00324	0.00402	0.00112	0.00283	0.00321	0.00108
46. ELECTRIC COMPANIES + SYSTEMS	0.00450	0.01459	0.00167	0.00525	0.00313	0.00126	0.00079	0.00161
47. GAS COMPANIES AND SYSTEMS	0.00106	0.00002	0.00009	0.00143	0.0	0.00207	0.00758	0.00521
48. WATER + SANITARY SERVICES	0.00004	0.00003	0.00012	0.00072	0.00003	0.02425	0.00008	0.00054
49. HOUSEHOLDS	0.22107	0.34007	0.21632	0.32749	0.29116	0.38561	0.34614	0.55892
50. ALL OTHER FINAL PAYMENTS	0.29851	0.34309	0.12145	0.10587	0.37438	0.05551	0.09137	0.08350
51. IMPORTS	0.13882	0.20668	0.08635	0.24438	0.09894	0.02948	0.18561	0.09028
52. TOTAL	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE II (CONTINUED)
DIRECT REQUIREMENTS PER DOLLAR OF OUTPUT, WEST VIRGINIA, 1975

	9	10	11	12	13	14	15	16
1. AGRICULTURE	0.17099	0.24013	0.00767	0.0	0.0	0.04917	0.00010	0.0
2. COAL MINING (UNDERGROUND)	0.0	0.00012	0.0	0.00320	0.0	0.00097	0.00735	0.00076
3. COAL MINING (STRIP + AUGER)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. PETROLEUM + NATURAL GAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. ALL OTHER MINING	0.00005	0.0	0.00044	0.0	0.00005	0.0	0.00149	0.0
6. GENERAL CONTRACTORS (BUILDING)	0.0	0.00033	0.0	0.0	0.00005	0.00050	0.0	0.0
7. SPECIAL TRADES CONTRACTORS	0.00156	0.00677	0.00015	0.00004	0.02093	0.000611	0.0	0.0
8. GENERAL CONTRACTORS (NON-BUILDING)	0.0	0.01493	0.00106	0.0	0.0	0.0	0.0	0.0
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.07512	0.01481	0.00720	0.0	0.0	0.0	0.0	0.0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.0	0.0	0.00112	0.0	0.0	0.0	0.0	0.0
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.0	0.0	0.0	0.00798	0.0	0.0	0.0	0.0
12. APPAREL + ACCESSORIES	0.0	0.0	0.0	0.00124	0.0	0.0	0.0	0.0
13. LOGGING + SAWMILLS	0.0	0.0	0.00010	0.00003	0.00435	0.16365	0.13014	0.00013
14. FURNITURE + OTHER WOOD FABRICAT ION	0.00178	0.00251	0.00217	0.01243	0.00008	0.00002	0.00122	0.21295
15. PRINTING + PUBLISHING	0.0	0.0	0.0	0.02250	0.00008	0.000147	0.00003	0.00090
16. CHEMICALS	0.0	0.0	0.0	0.0	0.0	0.0	0.00136	0.0
17. PETROLEUM	0.00040	0.0	0.0	0.01011	0.0	0.0	0.0	0.0
18. GLASS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19. STONE + CLAY PRODUCTS	0.0	0.0	0.0	0.00807	0.0	0.0	0.0	0.0
20. PRIMARY METAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21. FABRICATED METAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.00430	0.01094	0.0
22. MACHINERY (EXCEPT ELECTRICAL)	0.00010	0.00020	0.0	0.0	0.00004	0.00015	0.00065	0.0
23. ELECTRICAL MACHINERY + APPARATUS	0.0	0.0	0.0	0.0	0.00008	0.00015	0.0	0.0
24. TRANSPORTATION EQUIPMENT	0.000275	0.00210	0.00408	0.0	0.0	0.00015	0.00073	0.0
25. INSTRUMENTS + RELATED PRODUCTS	0.00061	0.00276	0.00217	0.00305	0.00586	0.00282	0.00073	0.0
26. ALL OTHER MANUFACTURING	0.03257	0.01653	0.02614	0.01326	0.00320	0.00345	0.00304	0.00187
27. EATING + DRINKING ESTABLISHMENTS	0.00321	0.00142	0.00595	0.00750	0.00029	0.00413	0.00397	0.00313
28. WHOLESALE TRADE	0.00507	0.00191	0.00956	0.00112	0.0	0.00413	0.00097	0.00277
29. RETAIL FOOD STORES	0.00750	0.00057	0.00665	0.00047	0.00084	0.00311	0.00182	0.02035
30. RETAIL GASOLINE SERVICE STATIONS	0.01314	0.00626	0.00309	0.01442	0.01001	0.002020	0.00182	0.00181
31. ALL OTHER RETAIL	0.00266	0.00190	0.01912	0.0	0.0	0.02020	0.00442	0.01247
32. REAL ESTATE	0.0	0.00025	0.00003	0.0	0.0	0.00996	0.00007	0.01734
33. ALL OTHER FIN. INSUR. + REAL ESTATE	0.0	0.00085	0.00045	0.00182	0.00005	0.00047	0.00014	0.00224
34. HOTELS + OTHER LODGING PLACES	0.00800	0.00085	0.00045	0.00268	0.00004	0.00330	0.00184	0.00235
35. MEDICAL + LEGAL SERVICES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00069
36. EDUCATIONAL SERVICES	0.0	0.03688	0.03896	0.00775	0.00618	0.01101	0.01626	0.02351
37. RAILROADS	0.00007	0.0	0.0	0.0	0.00004	0.00109	0.0	0.0
38. TRUCKING + WAREHOUSING	0.00833	0.00562	0.00164	0.01062	0.00906	0.00109	0.00261	0.00560
39. ALL OTHER TRANSPORTATION	0.00582	0.00108	0.00279	0.00972	0.00162	0.00658	0.00196	0.00358
40. COMMUNICATIONS	0.00185	0.00199	0.00601	0.01311	0.02481	0.00302	0.00443	0.00878
41. ELECTRIC COMPANIES + SYSTEMS	0.01113	0.00615	0.02454	0.00246	0.00864	0.00951	0.00515	0.00316
42. GAS COMPANIES AND SYSTEMS	0.00308	0.00159	0.02394	0.00276	0.00375	0.00249	0.00711	0.00394
43. WATER + SANITARY SERVICES	0.00165	0.00164	0.00109	0.00755	0.00086	0.00046	0.00275	0.00079
49. HOUSEHOLDS	0.10908	0.27735	0.18721	0.21369	0.50288	0.40414	0.15470	0.26367
50. ALL OTHER FINAL PAYMENTS	0.48202	0.30406	0.51098	0.35565	0.17852	0.12886	0.38624	0.14378
51. IMPORTS	0.05146	0.04929	0.10786	0.27844	0.21717	0.13853	0.24062	0.22715
52. TOTAL	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE II (CONTINUED)

DIRECT REQUIREMENTS PER DOLLAR OF OUTPUT, WEST VIRGINIA, 1975

	17	18	19	20	21	22	23	24
	CHEMICAL	PETRO·UM	GLASS	STONE & CLAY	PRIMARY METALS	FABRIC'D METALS	MACHIN'Y EXC ELEC	ELEC MACH INERY
1. AGRICULTURE (UNDERGROUND)	0.0	0.0	0.0	0.00053	0.0	0.0	0.0	0.0
2. COAL MINING (STRIP + AUGER)	0.01861	0.02476	0.00038	0.00837	0.02491	0.00062	0.00010	0.0
3. COAL MINING (STRIP + AUGER)	0.00016	0.0	0.0	0.0	0.00005	0.0	0.0	0.0
4. PETROLEUM + NATURAL GAS	0.00701	0.06161	0.0	0.0	0.0	0.0	0.0	0.0
5. ALL OTHER MINING	0.00106	0.07260	0.01617	0.04014	0.00445	0.00021	0.0	0.0
6. GENERAL CONTRACTORS (BUILDING)	0.00027	0.0	0.00013	0.0	0.00044	0.00015	0.00010	0.00001
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00054	0.00008	0.0	0.0	0.00011	0.00877	0.0	0.00004
8. SPECIAL TRADES CONTRACTORS	0.00855	0.0	0.0	0.00080	0.00057	0.00030	0.00024	0.0
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00019	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.0	0.0	0.0	0.00034	0.0	0.0	0.0	0.0
13. APPAREL + ACCESSORIES	0.00002	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14. LGGGING + SAWMILLS	0.0	0.00039	0.00002	0.0	0.0	0.0	0.0	0.0
15. FURNITURE + PUBLISHING	0.0	0.00001	0.00049	0.0	0.0	0.00001	0.00004	0.00103
16. CHEMICALS	0.00080	0.00055	0.00295	0.00412	0.00010	0.00128	0.00356	0.00118
17. PETROLEUM	0.12122	0.03841	0.00140	0.00346	0.00432	0.00155	0.0	0.01998
18. GLASS	0.00207	0.02403	0.00002	0.03942	0.00009	0.0	0.0	0.0
19. STONE + CLAY PRODUCTS	0.00080	0.0	0.02713	0.0	0.0	0.0	0.0	0.0
20. PRIMARY METAL PRODUCTS	0.00009	0.0	0.00394	0.02089	0.0	0.0	0.0	0.0
21. FABRICATED METAL PRODUCTS	0.00255	0.00593	0.00036	0.1634	0.00252	0.10275	0.04801	0.15396
22. MACHINERY (EXCEPT ELECTRICAL)	0.00009	0.0	0.00031	0.00009	0.00094	0.00073	0.02127	0.00011
23. ELECTRICAL MACHINERY + APPARATUS	0.00077	0.0	0.0	0.00063	0.00127	0.00135	0.0	0.00426
24. TRANSPORTATION EQUIPMENT	0.0	0.0	0.0	0.00048	0.00032	0.00003	0.01140	0.00219
25. INSTRUMENTS + RELATED PRODUCTS	0.00319	0.0	0.0	0.00010	0.0	0.0	0.0	0.00260
26. ALL OTHER MANUFACTURING	0.00866	0.00040	0.03986	0.00644	0.00420	0.00440	0.0	0.00072
27. EATING + DRINKING ESTABLISHMENTS	0.00025	0.00024	0.0	0.0	0.00003	0.00029	0.00016	0.00031
28. WHOLESALE TRADE	0.00641	0.01864	0.01568	0.01566	0.00448	0.01214	0.00820	0.00463
29. RETAIL FOOD STORES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30. RETAIL GASOLINE SERVICE STATIONS	0.0	0.00015	0.0	0.00584	0.0	0.0	0.00050	0.00021
31. ALL OTHER RETAIL	0.00209	0.00190	0.00237	0.01156	0.00298	0.00287	0.00179	0.00454
32. BANKING	0.00050	0.00274	0.00451	0.00340	0.00111	0.00043	0.00400	0.00112
33. INSURANCE AGENTS + BROKERS	0.0	0.00276	0.0	0.0	0.00002	0.00073	0.0	0.0
34. REAL ESTATE	0.00361	0.00075	0.01951	0.00772	0.00147	0.00155	0.01083	0.00834
35. ALL OTHER FIN, INSUR. + REAL ESTATE	0.0	0.0	0.0	0.0	0.0	0.00409	0.0	0.00210
36. HOTELS + OTHER LODGING PLACES	0.00257	0.00012	0.0	0.0	0.00096	0.00255	0.0	0.00004
37. MEDICAL + LEGAL SERVICES	0.00035	0.00025	0.00019	0.0	0.00006	0.00012	0.00025	0.00070
38. EDUCATIONAL SERVICES	0.00176	0.00176	0.00062	0.00551	0.00150	0.00039	0.00065	0.00317
39. ALL OTHER SERVICES	0.0	0.0	0.0	0.0	0.00018	0.0	0.0	0.00089
40. RAILROADS	0.00349	0.00324	0.01275	0.01677	0.00002	0.00439	0.00337	0.00877
41. TRUCKING + WAREHOUSING	0.00786	0.00070	0.00026	0.00373	0.00024	0.00024	0.00548	0.00090
42. ALL OTHER TRANSPORTATION	0.00752	0.03729	0.00433	0.03347	0.00848	0.00281	0.0	0.00247
43. COMMUNICATIONS	0.00393	0.01320	0.00020	0.00215	0.00062	0.00071	0.00669	0.00399
44. ELECTRIC COMPANIES + SYSTEMS	0.00438	0.02841	0.00314	0.00412	0.00353	0.00256	0.00400	0.00594
45. GAS COMPANIES AND SYSTEMS	0.00801	0.00715	0.01163	0.01082	0.00660	0.00986	0.00524	0.02373
46. WATER + SANITARY SERVICES	0.01297	0.01896	0.03219	0.02588	0.00346	0.01055	0.00406	0.01288
47. HOUSEHOLDS	0.00198	0.00034	0.00039	0.00056	0.00001	0.00124	0.00016	0.00376
48. HOUSEHOLDS	0.20869	0.14357	0.40088	0.30987	0.28867	0.27822	0.45095	0.22073
49. ALL OTHER FINAL PAYMENTS	0.36229	0.33686	0.21644	0.23990	0.52855	0.43775	0.25624	0.38593
50. IMPORTS	0.18361	0.12841	0.17936	0.16089	0.09865	0.10418	0.15271	0.11877
51. TOTAL	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE II (CONTINUED)

DIRECT REQUIREMENTS PER DOLLAR OF OUTPUT, WEST VIRGINIA, 1975

	25	26	27	28	29	30	31	32
	TRANSPOT EQUIPM	INSTRUC'S PRODUCT	ALL OTHER MANUF	EATING & DRING ES	WHOLESALE TRADE	RETAIL FOOD STR	RETAIL GAS STAT	ALL OTHER RETAIL
1. AGRICULTURE (UNDERGROUND)	0.0	0.0	0.00433	0.00501	0.00007	0.00007	0.0	0.0
2. COAL MINING (STRIP + AUGER)	0.0	0.0	0.00106	0.00010	0.00115	0.0	0.00044	0.00465
3. COAL MINING (PETROLEUM + NATURAL GAS)	0.0	0.0	0.00936	0.00022	0.0	0.0	0.00010	0.00137
4. PETROLEUM + NATURAL GAS	0.0	0.0	0.00025	0.0	0.0	0.0	0.0	0.00012
5. ALL OTHER MINING	0.000251	0.0	0.00003	0.0	0.0	0.0	0.0	0.0
6. GENERAL CONTRACTORS (BUILDING)	0.00003	0.0	0.00213	0.0	0.0	0.0	0.0	0.00081
7. GENERAL CONTRACTORS (NON-BUILDING)	0.0	0.0	0.02345	0.00009	0.00138	0.00233	0.0	0.00020
8. SPECIAL TRADES CONTRACTORS	0.0	0.0	0.01022	0.03011	0.00007	0.0	0.0	0.00701
9. FODD + KINDRED PROD-MEATS + N.E.C.	0.0	0.0	0.0	0.03413	0.0	0.00005	0.0	0.00068
10. FCCD + KINDRED PRODUCTS (DAIRIES)	0.0	0.0	0.0	0.02132	0.0	0.0	0.0	0.00067
11. FCCD + KINDRED PRODUCTS (BAKERIES)	0.0	0.0	0.0	0.00007	0.0	0.0	0.0	0.00063
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.0	0.0	0.0	0.00007	0.0	0.0	0.0	0.0
13. APPAREL + ACCESSORIES	0.00008	0.00033	0.00003	0.00007	0.0	0.0	0.0	0.0
14. LOGGING + SAWMILLS	0.00009	0.00002	0.00005	0.00055	0.00017	0.00029	0.00010	0.00130
15. FURNITURE + OTHER WOOD FABRICATIGN	0.00009	0.00002	0.00005	0.00096	0.00080	0.03613	0.00334	0.03003
16. PRINTING + PUBLISHING	0.00047	0.00080	0.00222	0.00096	0.00169	0.0	0.0	0.0
17. CHEMICALS	0.00003	0.0	0.00556	0.0	0.00169	0.0	0.0	0.0
18. PETROLEUM	0.0	0.0	0.00073	0.00090	0.0	0.00018	0.02383	0.0
19. GLASS	0.0	0.0	0.00075	0.00090	0.00019	0.0	0.0	0.00962
20. STONE + CLAY PRODUCTS	0.0	0.0	0.00033	0.0	0.0	0.0	0.0	0.00007
21. PRIMARY METAL PRODUCTS	0.09210	0.0	0.00006	0.0	0.0	0.0	0.0	0.0
22. FABRICATED METAL PRODUCTS	0.00056	0.0	0.03010	0.0	0.00007	0.0	0.0	0.00004
23. MACHINERY (EXCEPT ELECTRICAL)	0.0	0.0	0.00924	0.0	0.0	0.0	0.0	0.0
24. ELECTRICAL MACHINERY + APPARATUS	0.01189	0.0	0.00211	0.00004	0.00047	0.0	0.0	0.0
25. TRANSPORTATION EQUIPMENT	0.00009	0.0	0.00040	0.0	0.00020	0.0	0.00006	0.00005
26. INSTRUMENTS + RELATED PRODUCTS	0.0	0.00120	0.00635	0.00008	0.0	0.0	0.0	0.00010
27. ALL OTHER MANUFACTURING	0.0	0.00369	0.00002	0.00799	0.00196	0.00094	0.00016	0.00012
28. EATING + DRINKING ESTABLISHMENTS	0.00007	0.0	0.00002	0.05386	0.01550	0.00696	0.00009	0.00063
29. WHOLESALE TRADE	0.00187	0.0	0.00171	0.00398	0.00016	0.00009	0.01201	0.00247
30. RETAIL FOOD STORES	0.0	0.0	0.00058	0.00009	0.00877	0.00219	0.00180	0.00391
31. RETAIL GASLINE SERVICE STATIONS	0.00023	0.00010	0.00025	0.00103	0.00190	0.00203	0.00165	0.00810
32. ALL OTHER RETAIL	0.00087	0.0	0.00039	0.00288	0.00376	0.00203	0.00396	0.01024
33. BANKING	0.00130	0.0	0.00003	0.00067	0.00666	0.01101	0.00008	0.00359
34. OTHER FINANCE	0.0	0.00195	0.00193	0.00703	0.01164	0.01752	0.01032	0.01060
35. INSURANCE AGENTS + BROKERS	0.00267	0.0	0.00134	0.00062	0.00003	0.06266	0.00610	0.01575
36. REAL ESTATE	0.0	0.0	0.00007	0.0	0.00221	0.0	0.00021	0.00130
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00001	0.00003	0.00006	0.00013	0.00105	0.0	0.00059	0.00164
38. HOTELS + OTHER LODGING PLACES	0.00077	0.0	0.00082	0.00006	0.00183	0.00095	0.00059	0.00560
39. MEDICAL + LEGAL SERVICES	0.0	0.0	0.0	0.00013	0.00183	0.0	0.0	0.00560
40. EDUCATIONAL SERVICES	0.00077	0.0	0.00082	0.00006	0.00183	0.00095	0.00059	0.00560
41. ALL OTHER SERVICES	0.00520	0.00466	0.00572	0.000450	0.00037	0.0	0.0	0.00051
42. RAILROADS	0.01414	0.00012	0.00394	0.00113	0.00700	0.02190	0.01494	0.04351
43. TRUCKING + WAREHOUSING	0.00056	0.00484	0.00434	0.000113	0.00521	0.00002	0.00165	0.00304
44. ALL OTHER TRANSPORTATION	0.00003	0.00413	0.00176	0.00038	0.01520	0.00664	0.02506	0.01661
45. COMMUNICATIONS	0.00680	0.00150	0.00281	0.000400	0.01014	0.00063	0.00129	0.00245
46. ELECTRIC COMPANIES + SYSTEMS	0.00805	0.00150	0.00595	0.00400	0.00743	0.01473	0.01419	0.00466
47. GAS COMPANIES AND SYSTEMS	0.00556	0.00257	0.00357	0.01039	0.01711	0.02711	0.00980	0.00971
48. WATER + SANITARY SERVICES	0.00179	0.00166	0.000038	0.00149	0.00042	0.00240	0.00243	0.00201
49. HOUSEHOLDS	0.27648	0.10620	0.17566	0.26474	0.61455	0.28927	0.34947	0.54463
50. ALL OTHER FINAL PAYMENTS	0.44959	0.63695	0.56654	0.31112	0.04803	0.22679	0.18193	0.12846
51. IMPORTS	0.11616	0.22309	0.11137	0.16665	0.19505	0.25377	0.32574	0.11267
52. TOTAL	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE II (CONTINUED)

DIRECT REQUIREMENTS PER DOLLAR OF OUTPUT, WEST VIRGINIA, 1975

	33	34	35	36	37	38	39	40
	BANKING	OTHER FINANCE	INSURANC AGENTS	REAL EST	ALL OTHR FIRE	HOTELS & LODGING	MEDICAL & LEGAL	EDUCAT'L SERVICES
1. AGRICULTURE	0.0	0.0	0.0	0.0	0.0	0.00865	0.00025	0.0
2. COAL MINING (UNDERGROUND)	0.0	0.0	0.0	0.0	0.0	0.00564	0.00153	0.00201
3. COAL MINING (STRIP + AUGER)	0.0	0.0	0.0	0.0	0.0	0.02016	0.0	0.00132
4. PETROLEUM + NATURAL GAS	0.0	0.0	0.0	0.0	0.0	0.0	0.00001	0.0
5. ALL OTHER MINING	0.0	0.0	0.0	0.0	0.0	0.00172	0.0	0.01884
6. GENERAL CONTRACTORS (BUILDING)	0.00055	0.00003	0.0	0.04289	0.0	0.00538	0.0	0.02152
7. GENERAL CONTRACTORS (NON-BUILDING)	0.0	0.00003	0.0	0.0136	0.0	0.03844	0.00447	0.00292
8. SPECIAL TRADES CONTRACTORS	0.00486	0.00003	0.00009	0.02129	0.0	0.00010	0.00387	0.00043
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.0	0.0	0.0	0.0	0.0	0.00006	0.00117	0.00063
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.0	0.0	0.0	0.0	0.0	0.00004	0.00114	0.00060
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.0	0.0	0.0	0.0	0.0	0.00005	0.00073	0.00079
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.0	0.0	0.0	0.0	0.0	0.00045	0.00422	0.0
13. APPAREL + ACCESSORIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14. LOGGING + SAWMILLS	0.0	0.0	0.0	0.00002	0.0	0.00004	0.00009	0.00002
15. FURNITURE + OTHER WOOD FABRICATION	0.00003	0.01290	0.00166	0.02234	0.00399	0.00313	0.00074	0.00191
16. PRINTING + PUBLISHING	0.00007	0.0	0.0	0.0	0.0	0.0	0.00367	0.0
17. CHEMICALS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00002
18. PETROLEUM	0.0	0.0	0.0	0.0	0.0	0.0	0.00213	0.0
19. GLASS	0.0	0.0	0.0	0.00057	0.0	0.0	0.0	0.00065
20. STONE + CLAY PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21. PRIMARY METAL PRODUCTS	0.0	0.0	0.0	0.0	0.0	0.00010	0.0	0.00004
22. FABRICATED METAL PRODUCTS	0.0	0.00001	0.0	0.0	0.0	0.0	0.0	0.0
23. MACHINERY (EXCEPT ELECTRICAL)	0.0	0.0	0.0	0.0	0.0	0.00008	0.0	0.0
24. ELECTRICAL MACHINERY + APPARATUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25. TRANSPORTATION EQUIPMENT	0.0	0.0	0.00016	0.0	0.0	0.0	0.0	0.0
26. INSTRUMENTS + RELATED PRODUCTS	0.00042	0.0	0.00016	0.0	0.0	0.00036	0.00125	0.0
27. ALL OTHER MANUFACTURING	0.00015	0.00072	0.00016	0.00152	0.00022	0.00002	0.00151	0.00004
28. EATING + DRINKING ESTABLISHMENTS	0.00055	0.00067	0.00023	0.02551	0.0	0.03739	0.00003	0.00164
29. WHOLESALE TRADE	0.0	0.0	0.00023	0.0	0.0	0.00008	0.01130	0.00981
30. RETAIL FOOD STORES	0.0	0.0	0.0	0.0	0.0	0.0	0.00245	0.0
31. RETAIL GASOLINE SERVICE STATIONS	0.00013	0.0	0.00062	0.00066	0.0	0.00779	0.00158	0.00020
32. ALL OTHER RETAIL	0.00230	0.00193	0.00094	0.00600	0.00743	0.00905	0.00766	0.01107
33. BANKING	0.0010	0.06745	0.00294	0.00810	0.00152	0.03438	0.00301	0.00112
34. OTHER FINANCE	0.0103	0.00294	0.00038	0.00196	0.0	0.00067	0.00383	0.0
35. INSURANCE AGENTS + BROKERS	0.01049	0.00484	0.00345	0.00239	0.00426	0.02855	0.01199	0.00628
36. REAL ESTATE	0.00517	0.00905	0.00156	0.06278	0.00208	0.00802	0.0	0.00047
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00865	0.0	0.06639	0.00347	0.00063	0.0	0.00025	0.0
38. HOTELS + OTHER LODGING PLACES	0.00018	0.00007	0.00052	0.00151	0.00029	0.00006	0.00036	0.00050
39. MEDICAL + LEGAL SERVICES	0.00602	0.02681	0.00110	0.00300	0.41980	0.00501	0.03246	0.00317
40. EDUCATIONAL SERVICES	0.00033	0.00212	0.0	0.0	0.0	0.0020	0.00031	0.02266
41. ALL OTHER SERVICES	0.03616	0.06537	0.01244	0.08341	0.01900	0.07240	0.02966	0.02806
42. RAILROADS	0.0	0.0	0.0	0.0	0.0	0.0	0.00072	0.0
43. TRUCKING + WAREHOUSING	0.00046	0.0	0.0	0.0	0.0	0.00162	0.00094	0.00277
44. ALL OTHER TRANSPORTATION	0.03579	0.00505	0.00037	0.0254	0.00079	0.00039	0.00093	0.00085
45. COMMUNICATIONS	0.00942	0.01513	0.00485	0.02250	0.00850	0.03562	0.00738	0.00806
46. ELECTRIC COMPANIES + SYSTEMS	0.00164	0.00094	0.00351	0.00351	0.00289	0.05062	0.00338	0.00697
47. GAS COMPANIES AND SYSTEMS	0.00312	0.00123	0.00419	0.01159	0.00756	0.02011	0.00801	0.00942
48. WATER + SANITARY SERVICES	0.00097	0.00025	0.00017	0.00122	0.00006	0.00769	0.00143	0.00170
49. HOUSEHOLDS	0.30162	0.22585	0.13771	0.24646	0.14237	0.42471	0.47015	0.47901
50. ALL OTHER FINAL PAYMENTS	0.09653	0.24268	0.67371	0.08625	0.19787	0.07497	0.19844	0.10904
51. IMPORTS	0.46723	0.31386	0.08354	0.33715	0.18074	0.09633	0.17695	0.24546
52. TOTAL	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE 11 (CONTINUED)

DIRECT REQUIREMENTS PER DOLLAR OF OUTPUT, WEST VIRGINIA, 1975

	41	42	43	44	45	46	47	48
	ALL OTHER SERVICES	RAILR'DS	TRUCK & WAREHOUS	ALL OTHER TRANSPOT	COMMUNICATI'NS	ELEC CO. SYSTEMS	GAS CO. SYSTEMS	WATER & SANITARY
1. AGRICULTURE (UNDERGROUND)	0.0	0.00008	0.0	0.0	0.0	0.0	0.0	0.0
2. COAL MINING	0.0	0.0	0.0	0.0	0.0	0.17727	0.00355	0.00087
3. PETROLEUM (STRIP + AUGER)	0.0	0.0	0.0	0.0	0.0	0.04829	0.0	0.0
4. PETROLEUM + NATURAL GAS	0.00008	0.0	0.00566	0.03319	0.0	0.0	0.08610	0.0
5. ALL OTHER MINING	0.0	0.00562	0.0	0.0	0.0	0.0	0.0	0.02987
6. GENERAL CONTRACTORS (BUILDING)	0.0	0.00323	0.00029	0.0	0.0	0.00002	0.00005	0.00034
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00009	0.0	0.00703	0.0	0.00511	0.0	0.00003	0.07995
8. SPECIAL TRADES CONTRACTORS	0.00304	0.00702	0.00149	0.00367	0.0	0.0	0.00005	0.0
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11. FCCD + KINDRED PRODUCTS (BAKERIES)	0.00005	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13. APPAREL + ACCESSORIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14. LUGGING + SAWMILLS	0.0	0.00057	0.0	0.0	0.0	0.0	0.0	0.00007
15. FURNITURE + OTHER WOOD FABRICATI'N	0.00017	0.0	0.00004	0.00101	0.00003	0.00008	0.00008	0.00004
16. PRINTING + PUBLISHING	0.01901	0.00010	0.00760	0.00030	0.00283	0.00252	0.00115	0.00012
17. CHEMICALS	0.00435	0.0	0.00006	0.00012	0.0	0.0	0.0	0.02107
18. PETROLEUM	0.00167	0.00879	0.00090	0.00705	0.00185	0.00224	0.0	0.00070
19. GLASS	0.0	0.00074	0.00007	0.0	0.02287	0.0	0.0	0.0
20. STONE + CLAY PRODUCTS	0.00021	0.00359	0.0	0.06604	0.00287	0.00226	0.00123	0.00547
21. PRIMARY METAL PRODUCTS	0.000468	0.00084	0.0	0.02338	0.00116	0.0	0.00051	0.00051
22. FABRICATED METAL PRODUCTS	0.00094	0.00162	0.0	0.00416	0.00004	0.00014	0.00045	0.00983
23. MACHINERY (EXCEPT ELECTRICAL)	0.00627	0.00006	0.0	0.0	0.00366	0.00023	0.00007	0.00007
24. ELECTRICAL MACHINERY + APPARATUS	0.00022	0.00805	0.00064	0.00015	0.0	0.00023	0.00002	0.0
25. TRANSPORTATION EQUIPMENT	0.00010	0.00001	0.0	0.0	0.00007	0.00003	0.00004	0.00004
26. INSTRUMENTS + RELATED PRODUCTS	0.0	0.00009	0.00042	0.00280	0.00021	0.00003	0.00034	0.00004
27. ALL OTHER MANUFACTURING	0.00021	0.00009	0.00036	0.00021	0.00060	0.00080	0.00222	0.00032
28. EATING + DRINKING ESTABLISHMENTS	0.01862	0.00089	0.05753	0.00549	0.00160	0.00391	0.00140	0.01906
29. WHOLESALE TRADE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30. RETAIL FCCD STORES	0.00307	0.0	0.00401	0.00178	0.00060	0.00001	0.00085	0.00234
31. RETAIL GASLINE SERVICE STATIONS	0.01802	0.00235	0.00639	0.0	0.00032	0.00017	0.00064	0.03746
32. ALL OTHER RETAIL	0.00524	0.0	0.00434	0.00789	0.00303	0.00029	0.00127	0.00086
33. BANKING	0.00005	0.0	0.00042	0.0	0.0	0.0	0.0	0.0
34. OTHER FINANCE	0.00005	0.02134	0.00043	0.0	0.00129	0.00113	0.00032	0.00598
35. INSURANCE AGENTS + BROKERS	0.00519	0.0	0.00100	0.0	0.00099	0.00076	0.00494	0.0
36. REAL ESTATE	0.00089	0.0	0.00001	0.0	0.00151	0.00028	0.00118	0.00139
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00089	0.00013	0.00057	0.00040	0.00037	0.00170	0.00030	0.00027
38. HOTELS + OTHER LODGING PLACES	0.00219	0.00194	0.00009	0.0	0.0	0.0	0.0	0.0
39. MEDICAL + LEGAL SERVICES	0.01827	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40. EDUCATIONAL SERVICES	0.02851	0.00393	0.0	0.01150	0.02326	0.00309	0.00160	0.00125
41. ALL OTHER SERVICES	0.00038	0.000170	0.000106	0.0	0.00858	0.01287	0.00101	0.00610
42. RAILROADS	0.00502	0.000592	0.00008	0.00209	0.02350	0.02350	0.01148	0.00388
43. TRUCKING + WAREHOUSING	0.00390	0.00054	0.000270	0.00415	0.00598	0.00969	0.00817	0.00054
44. ALL OTHER TRANSPORTATION	0.00815	0.00395	0.00447	0.00524	0.00109	0.00433	0.000399	0.00054
45. COMMUNICATIONS	0.00326	0.00342	0.00384	0.00246	0.00732	0.03479	0.00098	0.01243
46. ELECTRIC COMPANIES + SYSTEMS	0.01022	0.00101	0.00367	0.00238	0.00583	0.00109	0.00589	0.04839
47. GAS COMPANIES AND SYSTEMS	0.00267	0.000025	0.000067	0.000009	0.00002	0.00010	0.00080	0.01562
48. WATER + SANITARY SERVICES								
49. HOUSEHOLDS	0.41488	0.30010	0.28696	0.25701	0.44374	0.21826	0.14250	0.25690
50. ALL OTHER FINAL PAYMENTS	0.29869	0.36907	0.33942	0.37436	0.16951	0.15849	0.60733	0.23846
51. IMPORTS	0.10395	0.24105	0.23778	0.16508	0.27861	0.29100	0.11896	0.18888
52. TOTAL	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE III

DIRECT AND INDIRECT REQUIREMENTS PER DOLLAR OF DELIVERY TO FINAL DEMAND, WEST VIRGINIA, 1975

	1	2	3	4	5	6	7	8
	AGRICUL- TURE	COAL MIN UNDER	COAL MIN STRIP&AU	PETROL & NAT GAS	ALL OTHR MINING	GEN CONT BLDG	GEN CONT NON-BLDG	SP TRADE CCNTR'S
1. AGRICULTURE	1.11705	0.00069	0.00033	0.00007	0.00534	0.00097	0.00040	0.00142
2. COAL MINING (UNDERGROUND)	0.00531	1.01725	0.27860	0.00172	0.00170	0.00500	0.00517	0.00273
3. COAL MINING (STRIP + AUGER)	0.00071	0.03245	1.36638	0.00060	0.00062	0.00096	0.00049	0.00075
4. PETROLEUM + NATURAL GAS	0.00083	0.00093	0.00060	1.06108	0.00088	0.00172	0.01018	0.00132
5. ALL OTHER MINING	0.02195	0.00076	0.00089	0.00094	1.04447	0.01876	0.03039	0.00672
6. GENERAL CONTRACTORS (BUILDING)	0.00488	0.00008	0.00011	0.00032	0.00013	1.03461	0.00036	0.00054
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00044	0.00156	0.00062	0.00043	0.00050	0.02838	1.03773	0.00381
8. SPECIAL TRADES CONTRACTORS	0.01083	0.00276	0.00196	0.00492	0.05180	0.24113	0.03492	1.03054
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00001	0.00003	0.00008	0.00014	0.00014	0.00037	0.00009	0.00036
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00001	0.00001	0.00003	0.00005	0.00001	0.00005	0.00002	0.00003
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00001	0.00001	0.00002	0.00004	0.00001	0.00006	0.00002	0.00003
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00001	0.00002	0.00004	0.00011	0.00002	0.00007	0.00004	0.00002
13. APPAREL + ACCESSORIES	0.00686	0.01231	0.00524	0.00018	0.00938	0.01077	0.00323	0.02120
14. LOGGING + SAWMILLS	0.00231	0.00023	0.00015	0.00023	0.00149	0.00492	0.00101	0.00005
15. FURNITURE + OTHER WOOD FABRICATION	0.00192	0.00155	0.00024	0.00075	0.00594	0.00437	0.00255	0.00186
16. PRINTING + PUBLISHING	0.00155	0.000214	0.00014	0.00051	0.01399	0.00287	0.00757	0.00295
17. CHEMICALS	0.001372	0.00006	0.00008	0.00023	0.00649	0.01154	0.13033	0.00596
18. PETROLEUM	0.00009	0.00009	0.00008	0.00023	0.00017	0.00058	0.00102	0.00205
19. STONE + CLAY PRODUCTS	0.00172	0.00197	0.00147	0.00032	0.00174	0.11416	0.05486	0.00989
20. FABRICATED METAL PRODUCTS	0.00466	0.00813	0.00282	0.00851	0.0256	0.02614	0.01514	0.02185
21. MACHINERY (EXCEPT ELECTRICAL)	0.00026	0.00077	0.00104	0.0010	0.00462	0.04280	0.01977	0.06279
22. ELECTRICAL MACHINERY + APPARATUS	0.00036	0.00016	0.00048	0.00033	0.00025	0.00235	0.01977	0.00287
23. TRANSPORTATION EQUIPMENT	0.00006	0.00013	0.00037	0.00008	0.00041	0.00176	0.00052	0.00113
24. INSTRUMENTS + RELATED PRODUCTS	0.00190	0.00048	0.00081	0.01056	0.00023	0.00006	0.00014	0.00004
25. EATING + DRINKING ESTABLISHMENTS	0.00023	0.00007	0.00062	0.00102	0.00623	0.02403	0.00376	0.00008
26. WHOLESALE TRADE	0.02635	0.00028	0.00173	0.01115	0.00207	0.00311	0.00161	0.00879
27. RETAIL FOOD STORES	0.00614	0.000414	0.00486	0.01581	0.00327	0.00407	0.00351	0.00169
28. RETAIL GASOLINE SERVICE STATIONS	0.01345	0.00080	0.01889	0.00568	0.00681	0.00777	0.00612	0.01362
29. BANKING	0.01143	0.00023	0.00562	0.00456	0.00092	0.00111	0.00062	0.00099
30. INSURANCE AGENTS + BROKERS	0.00150	0.00402	0.01842	0.10435	0.01787	0.01329	0.03152	0.02033
31. REAL ESTATE	0.00017	0.00043	0.00071	0.00581	0.00145	0.00749	0.00297	0.01106
32. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00231	0.00005	0.00012	0.00020	0.00261	0.00221	0.00053	0.00096
33. HOTELS + OTHER LODGING PLACES	0.00037	0.00311	0.00774	0.02491	0.00340	0.00563	0.00457	0.00357
34. MEDICAL + LEGAL SERVICES	0.01709	0.00013	0.00080	0.00083	0.00030	0.00024	0.00011	0.00029
35. EDUCATIONAL SERVICES	0.03067	0.00643	0.04043	0.04194	0.01489	0.01171	0.00509	0.01437
36. RAILROADS	0.01995	0.00123	0.00792	0.00657	0.02045	0.00175	0.00399	0.00062
37. TRUCKING + WAREHOUSING	0.00626	0.00533	0.01413	0.00480	0.02045	0.00934	0.03376	0.01107
38. ALL OTHER TRANSPORTATION	0.00419	0.00419	0.00255	0.00129	0.00128	0.00222	0.00553	0.00334
39. COMMUNICATIONS	0.00761	0.00631	0.00631	0.00644	0.00256	0.00576	0.00847	0.00300
40. ELECTRIC COMPANIES + SYSTEMS	0.00372	0.01603	0.00798	0.00751	0.00503	0.00631	0.00387	0.00397
41. GAS COMPANIES AND SYSTEMS	0.00042	0.00076	0.00195	0.00397	0.00200	0.00859	0.01323	0.00780
42. WATER + SANITARY SERVICES				0.00110	0.00024	0.02591	0.00033	0.00083
49. TOTAL	1.44435	1.15606	1.85588	1.39658	1.29935	1.71632	1.51096	1.33514

TABLE III (CONTINUED)
 DIRECT AND INDIRECT REQUIREMENTS PER DOLLAR OF DELIVERY
 TO FINAL DEMAND, WEST VIRGINIA, 1975

	5	10	11	12	13	14	15	16
1. AGRICULTURE	0.20656	0.27551	0.01083	0.00017	0.00008	0.06574	0.00874	0.00009
2. COAL MINING (UNDERGROUND)	0.00376	0.00299	0.00547	0.00453	0.00263	0.00410	0.00946	0.00251
3. COAL MINING (STRIP + AUGER)	0.00013	0.00076	0.00201	0.00089	0.00080	0.00105	0.00084	0.00058
4. PETROLEUM + NATURAL GAS	0.00050	0.00059	0.00255	0.00089	0.00057	0.00079	0.00100	0.00097
5. ALL OTHER MINING	0.00424	0.00557	0.00033	0.00056	0.00023	0.00160	0.00041	0.00014
6. GENERAL CONTRACTORS (BUILDING)	0.00054	0.00134	0.00058	0.00005	0.00009	0.00099	0.00171	0.00128
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00035	0.00074	0.00025	0.00087	0.00039	0.00097	0.00060	0.00038
8. SPECIAL TRADES CONTRACTORS	0.00406	0.01017	0.00094	0.00066	0.02184	0.00901	0.00181	0.00149
9. FOOD + KINDRED PROD-MEATS + N.E.C.	1.08308	0.01896	0.00143	0.00027	0.00008	0.00066	0.00011	0.00015
10. FOOD + KINDRED PRODUCTS (CAIRIES)	0.00002	1.01513	0.00733	0.00012	0.00000	0.00002	0.00002	0.00011
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00002	0.00007	1.00014	0.00012	0.00000	0.00000	0.00001	0.00008
12. APPAREL + KINDRED PRODUCTS (BEVERAGES)	0.00004	0.00001	0.00001	0.00127	0.00000	0.00000	0.00001	0.00002
13. APPAREL + ACCESSORIES	0.00043	0.000187	0.00018	0.00009	0.00004	1.19631	0.00005	0.00002
14. LOGGING + SAWMILLS	0.00046	0.00059	0.00017	0.00006	0.00001	0.00016	1.00622	0.00011
15. FURNITURE + OTHER WOOD FABRICATION	0.00365	0.00511	0.00474	0.01672	0.00001	0.00146	0.00241	1.27567
16. PRINTING + PUBLISHING	0.00125	0.00173	0.00043	0.00333	0.00029	0.00066	0.00886	0.00160
17. CHEMICALS	0.00055	0.00067	0.00043	0.00050	0.00032	0.00235	0.00035	0.00035
18. PETROLEUM	0.00055	0.00009	0.00012	0.01052	0.00005	0.00006	0.00143	0.00026
19. GLASS	0.00272	0.00362	0.00054	0.00054	0.00088	0.00139	0.00066	0.00056
20. STONE + CLAY PRODUCTS	0.00093	0.00083	0.00047	0.00975	0.00072	0.0124	0.00163	0.00054
21. PRIMARY METAL PRODUCTS	0.00127	0.00196	0.00065	0.00078	0.00165	0.00631	0.01274	0.00050
22. FABRICATED METAL PRODUCTS	0.00011	0.00037	0.00012	0.00018	0.00018	0.00032	0.00077	0.00008
23. MACHINERY (EXCEPT ELECTRICAL)	0.00022	0.00035	0.00035	0.00021	0.00027	0.00027	0.00020	0.00030
24. ELECTRICAL MACHINERY + APPARATUS	0.00005	0.00011	0.00003	0.00002	0.00002	0.00023	0.00004	0.00002
25. TRANSPORTATION EQUIPMENT	0.00301	0.00008	0.00004	0.00003	0.00001	0.00001	0.00004	0.00003
26. INSTRUMENTS + RELATED PRODUCTS	0.00134	0.00290	0.00435	0.00924	0.00653	0.00390	0.00154	0.00049
27. ALL OTHER MANUFACTURING PRODUCTS	0.00018	0.00029	0.00024	0.00323	0.00010	0.00015	0.00015	0.00027
28. EATING + DRINKING ESTABLISHMENTS	0.04843	0.03467	0.02900	0.01561	0.00457	0.00578	0.00546	0.00800
29. WHOLESALE TRADE	0.00016	0.00027	0.00018	0.00061	0.00022	0.00008	0.00008	0.00053
30. RETAIL FOOD STORES	0.00646	0.00527	0.00666	0.00796	0.00064	0.00604	0.00193	0.00484
31. RETAIL GASOLINE SERVICE STATIONS	0.00670	0.00398	0.01090	0.00228	0.00048	0.00105	0.00281	0.00390
32. ALL OTHER RETAIL	0.01444	0.00780	0.00790	0.00114	0.00143	0.00603	0.00290	0.00346
33. BANKING	0.01572	0.00191	0.00346	0.00016	0.00007	0.00148	0.00026	0.00053
34. OTHER FINANCE	0.00671	0.01083	0.02091	0.01609	0.01107	0.02618	0.00858	0.00053
35. INSURANCE AGENTS + BROKERS	0.00261	0.00541	0.00100	0.00064	0.00052	0.01594	0.00248	0.01808
36. REAL ESTATE	0.00078	0.00128	0.00170	0.00124	0.00090	0.01390	0.00233	0.00433
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00012	0.00013	0.00016	0.00191	0.00012	0.00067	0.00028	0.00033
38. HOTELS + OTHER LODGING PLACES	0.01024	0.00223	0.00177	0.00357	0.00038	0.01049	0.00366	0.00549
39. MEDICAL + LEGAL SERVICES	0.00018	0.00000	0.00084	0.00021	0.00016	0.00035	0.00038	0.00034
40. EDUCATIONAL SERVICES	0.00594	0.00396	0.04307	0.01023	0.00016	0.01788	0.02001	0.03687
41. ALL OTHER SERVICES	0.00623	0.00117	0.00101	0.00048	0.00048	0.00349	0.00077	0.00041
42. RAILROADS	0.01395	0.01176	0.00378	0.01192	0.00998	0.01008	0.00457	0.00871
43. TRUCKING + WAREHOUSING	0.00858	0.00033	0.00426	0.01044	0.00218	0.00470	0.00305	0.00533
44. ALL OTHER TRANSPORTATION	0.00384	0.00395	0.00746	0.01436	0.02531	0.01110	0.00645	0.01347
45. COMMUNICATIONS	0.01501	0.00540	0.00746	0.01436	0.02531	0.01110	0.00645	0.01347
46. ELECTRIC COMPANIES + SYSTEMS	0.00512	0.00370	0.02560	0.00425	0.00445	0.00439	0.00848	0.00750
47. GAS COMPANIES AND SYSTEMS	0.00195	0.00199	0.00136	0.00787	0.00095	0.00074	0.00305	0.00142
48. WATER + SANITARY SERVICES	0.00195	0.00199	0.00136	0.00787	0.00095	0.00074	0.00305	0.00142
49. TOTAL	1.45607	1.51571	1.24357	1.18789	1.12590	1.45718	1.29948	1.51714

TABLE III (CONTINUED)

DIRECT AND INDIRECT REQUIREMENTS PER DOLLAR OF DELIVERY TO FINAL DEMAND, WEST VIRGINIA, 1975

	17	18	19	20	21	22	23	24
	CHEMICAL	PETRO*UM	GLASS	STONE & CLAY	PRIMARY METALS	FABRIC'D METALS	MACHIN*Y EXC ELEC	ELEC MACH INERY
1. AGRICULTURE	0.00018	0.00050	0.00040	0.00092	0.00008	0.00006	0.00002	0.00006
2. COAL MINING (UNDERGROUND)	0.02386	0.02917	0.00351	0.01282	0.02700	0.00568	0.00282	0.00969
3. COAL MINING (STRIP + AUGER)	0.00184	0.00167	0.00154	0.00142	0.00147	0.00102	0.00055	0.00213
4. PETROLEUM + NATURAL GAS	0.01034	0.07028	0.00329	0.00583	0.00052	0.00126	0.00075	0.00174
5. ALL OTHER MINING	0.00160	0.07508	0.01764	0.04616	0.00476	0.00106	0.00033	0.00095
6. GENERAL CONTRACTORS (BUILDING)	0.00038	0.00010	0.00019	0.00011	0.00049	0.00043	0.00018	0.00025
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00109	0.00080	0.00062	0.00062	0.00029	0.00933	0.00028	0.00055
8. SPECIAL TRADES CONTRACTORS	0.01080	0.00508	0.00216	0.00385	0.00128	0.00119	0.00055	0.00006
9. FOOD + KINDRED PRODUCTS + N.E.C.	0.00039	0.00008	0.00048	0.00013	0.00006	0.00008	0.00002	0.00002
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00002	0.00002	0.00001	0.00002	0.00001	0.00002	0.00001	0.00002
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00004	0.00003	0.00001	0.00003	0.00001	0.00001	0.00001	0.00001
13. APPAREL + ACCESSORIES	0.00054	0.00158	0.00034	0.00064	0.00040	0.00013	0.00007	0.00031
14. LOGGING + SAWMILLS	0.00003	0.00018	0.00055	0.00011	0.00002	0.00004	0.00007	0.00107
15. FURNITURE + OTHER WOOD FABRICATION	0.00082	0.00288	0.00493	0.00738	0.00053	0.00229	0.00496	0.00242
16. PRINTING + PUBLISHING	1.13835	0.04619	0.00234	0.00678	0.00508	0.00249	0.00064	0.02379
17. CHEMICALS	0.00291	1.02671	0.00049	0.04206	0.00032	0.00129	0.00021	0.00035
18. PETROLEUM	0.00101	0.00011	1.02796	0.00017	0.00005	0.00005	0.00003	0.00009
19. GLASS	0.00163	0.02611	0.00444	1.02280	0.00037	0.00072	0.00020	0.00044
20. STONE + CLAY PRODUCTS	0.00133	0.02116	0.00291	0.02247	1.00296	0.10350	0.05269	0.15542
21. PRIMARY METAL PRODUCTS	0.00440	0.00894	0.00221	0.01826	0.00151	1.00128	0.02164	0.00086
22. FABRICATED METAL PRODUCTS	0.00033	0.00050	0.00082	0.00046	0.00138	0.00017	1.00020	0.00455
23. MACHINERY (EXCEPT ELECTRICAL)	0.00100	0.00027	0.00024	0.00086	0.00038	0.00011	0.00006	0.00005
24. ELECTRICAL MACHINERY + APPARATUS	0.00005	0.00010	0.00005	0.00020	0.00014	0.00001	0.00004	0.00271
25. TRANSPORTATION EQUIPMENT	0.00375	0.00086	0.00005	0.00020	0.00020	0.00502	0.00053	0.00179
26. INSTRUMENTS + RELATED PRODUCTS	0.01668	0.00198	0.04152	0.00728	0.00441	0.00502	0.00025	0.00044
27. ALL OTHER MANUFACTURING	0.00039	0.00046	0.00019	0.00021	0.00008	0.00339	0.00025	0.00068
28. EATING + DRINKING ESTABLISHMENTS	0.00926	0.02852	0.01827	0.02230	0.00063	0.01379	0.00932	0.00010
29. WHOLESALE TRADE	0.00008	0.00012	0.00018	0.00028	0.00003	0.00009	0.00018	0.00010
30. RETAIL FOOD STORES	0.00942	0.00169	0.00044	0.00669	0.00015	0.00024	0.00068	0.00045
31. RETAIL GASOLINE SERVICE STATIONS	0.00312	0.00436	0.00322	0.01332	0.00331	0.00364	0.00240	0.00575
32. ALL OTHER RETAIL	0.00116	0.00475	0.00533	0.01332	0.00136	0.00096	0.00035	0.00177
33. BANKING	0.00645	0.01116	0.02165	0.00472	0.00100	0.00088	0.00011	0.00012
34. OTHER FINANCE	0.00047	0.00094	0.00064	0.00099	0.00247	0.00272	0.00011	0.00069
35. INSURANCE AGENTS + BROKERS	0.00356	0.000146	0.00166	0.00112	0.00128	0.00296	0.00099	0.00104
36. REAL ESTATE	0.00047	0.00041	0.00031	0.00016	0.00010	0.00019	0.00031	0.00080
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00047	0.00041	0.00031	0.00016	0.00010	0.00019	0.00031	0.00042
38. HOTELS + OTHER LODGING PLACES	0.00403	0.00460	0.00177	0.00694	0.00226	0.00207	0.00038	0.00426
39. MEDICAL + LEGAL SERVICES	0.00012	0.00021	0.00031	0.00042	0.00021	0.00014	0.00012	0.00115
40. EDUCATIONAL SERVICES	0.00012	0.00021	0.00031	0.00042	0.00021	0.00014	0.00012	0.00180
41. ALL OTHER SERVICES	0.00588	0.01007	0.01555	0.02093	0.00091	0.00588	0.00476	0.01080
42. RAILROADS + WAREHOUSING	0.00942	0.00259	0.00096	0.00469	0.00457	0.00108	0.00595	0.00234
43. TRUCKING + TRANSPORTATION	0.00576	0.04257	0.00610	0.03827	0.00922	0.00476	0.00111	0.00517
44. ALL OTHER TRANSPORTATION	0.00518	0.01515	0.00128	0.00398	0.0106	0.00136	0.00728	0.00496
45. COMMUNICATIONS	0.00575	0.03103	0.00425	0.00681	0.00391	0.00359	0.00477	0.00738
46. ELECTRIC COMPANIES + SYSTEMS	0.01067	0.01072	0.01354	0.01358	0.00769	0.01163	0.00674	0.02678
47. GAS COMPANIES AND SYSTEMS	0.01567	0.02232	0.03441	0.02899	0.00389	0.01180	0.00510	0.01449
48. WATER + SANITARY SERVICES	0.00240	0.00066	0.00056	0.00084	0.00007	0.00134	0.00025	0.00399
49. TOTAL	1.31312	1.50260	1.24916	1.36933	1.10195	1.21324	1.16655	1.32343

TABLE III (CONTINUED)

DIRECT AND INDIRECT REQUIREMENTS PER DOLLAR OF DELIVERY TO FINAL DEMAND, WEST VIRGINIA, 1975

	25	26	27	28	29	30	31	32
	TRANSPCT EQUIPM	INSTRU'S \$PRODUCT	ALL OTHR MANUF	EATING & DRNG ES	WHOLESALE TRADE	RETAIL FOOD STR	RETAIL GAS STAT	ALL OTHR RETAIL
1. AGRICULTURE (UNDERGROUND)	0.000004	0.000047	0.00704	0.02338	0.00018	0.00016	0.00003	0.00029
2. COAL MINING (STRIP + AUGER)	0.00434	0.00047	0.00551	0.00328	0.00500	0.00592	0.00340	0.00758
3. COAL MINING (STRIP + AUGER)	0.00075	0.00021	0.01346	0.00136	0.00144	0.00220	0.00220	0.00295
4. PETROLEUM + NATURAL GAS	0.00064	0.00045	0.00397	0.00227	0.00218	0.00210	0.00281	0.00147
5. ALL OTHER MINING	0.00325	0.00007	0.00060	0.00039	0.00014	0.00026	0.00204	0.00042
6. GENERAL CONTRACTORS (BUILDING)	0.000014	0.000020	0.00016	0.00020	0.00026	0.00306	0.00034	0.00173
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00025	0.000019	0.00272	0.00092	0.00181	0.00500	0.00055	0.00075
8. SPECIAL TRADES CONTRACTORS	0.00002	0.000004	0.01121	0.04779	0.00021	0.00009	0.00002	0.00011
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.000014	0.000000	0.00001	0.03108	0.00007	0.00007	0.00001	0.00074
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.000001	0.000000	0.00001	0.03446	0.00008	0.00002	0.00001	0.00072
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.000001	0.000000	0.00000	0.02168	0.00005	0.00001	0.00001	0.00067
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.000000	0.000000	0.00000	0.00010	0.00002	0.00001	0.00001	0.00003
13. APPAREL + ACCESSORIES	0.00001	0.00000	0.00001	0.00010	0.00002	0.00001	0.00001	0.00050
14. LOGGING + SAWMILLS	0.00021	0.000041	0.00069	0.00029	0.00014	0.00025	0.00010	0.00050
15. FURNITURE + OTHER WOOD FABRICATIGN	0.00012	0.00003	0.00008	0.00064	0.00020	0.00034	0.00012	0.00136
16. PRINTING + PUBLISHING	0.00095	0.00129	0.00345	0.00277	0.00194	0.04925	0.00550	0.04095
17. CHEMICALS	0.00022	0.00011	0.00674	0.00042	0.00210	0.00040	0.00132	0.00050
18. PETROLEUM	0.00028	0.00010	0.00140	0.00020	0.00052	0.00060	0.02476	0.00049
19. GLASS	0.00002	0.00001	0.00085	0.00122	0.00024	0.00005	0.00004	0.01004
20. STONE + CLAY PRODUCTS	0.00030	0.00008	0.00106	0.00056	0.00036	0.00103	0.00113	0.00071
21. PRIMARY METAL PRODUCTS	0.09445	0.00035	0.00048	0.00045	0.00100	0.00086	0.00047	0.00113
22. FABRICATED METAL PRODUCTS	0.00086	0.00029	0.03227	0.00035	0.00062	0.00086	0.00047	0.00018
23. MACHINERY (EXCEPT ELECTRICAL)	0.00023	0.00007	0.00952	0.00005	0.00010	0.00012	0.00006	0.00014
24. ELECTRICAL MACHINERY + APPARATUS	0.01204	0.00006	0.00238	0.00018	0.00059	0.00032	0.00020	0.00039
25. TRANSPORTATION EQUIPMENT	1.00022	0.00001	0.00046	0.00003	0.00027	0.00003	0.00011	0.00011
26. INSTRUMENTS + RELATED PRODUCTS	0.00004	1.00120	0.00007	0.00024	0.00004	0.00003	0.00004	0.00014
27. ALL OTHER MANUFACTURING	0.00048	0.00038	1.00736	0.00068	0.00135	0.00526	0.00032	0.00019
28. EATING + DRINKING ESTABLISHMENTS	0.00012	0.00002	0.00011	0.00842	0.00212	0.00040	0.00023	0.00086
29. WHOLESALE TRADE	0.00028	0.00005	0.00447	0.06061	1.01766	0.01081	0.01526	0.00619
30. RETAIL FOOD STORES	0.00004	0.00005	0.00013	0.00412	0.00025	0.00275	1.00221	0.00146
31. RETAIL GASOLINE SERVICE STATIONS	0.00037	0.00018	0.00106	0.00160	0.00916	0.00275	0.00221	0.00454
32. ALL OTHER RETAIL	0.00155	0.00025	0.00091	0.00235	0.00252	0.00270	0.00264	1.01054
33. BANKING	0.00160	0.00043	0.00343	0.00470	0.00480	0.00337	0.00461	0.01166
34. OTHER FINANCE	0.00005	0.00002	0.00037	0.00198	0.00686	0.00129	0.00032	0.00382
35. INSURANCE AGENTS + BROKERS	0.00365	0.00022	0.00356	0.00162	0.01315	0.01959	0.01193	0.01328
36. REAL ESTATE	0.00020	0.00013	0.00212	0.00162	0.00055	0.06845	0.00697	0.01851
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00041	0.00022	0.00056	0.00094	0.00326	0.00184	0.00120	0.00260
38. HOTELS + OTHER LODGING PLACES	0.00006	0.00005	0.00014	0.00017	0.00114	0.00023	0.00010	0.00180
39. MEDICAL + LEGAL SERVICES	0.00125	0.00017	0.00148	0.00142	0.00375	0.00246	0.00146	0.00760
40. EDUCATIONAL SERVICES	0.00015	0.00010	0.00016	0.00027	0.00058	0.00039	0.00034	0.00015
41. ALL OTHER SERVICES	0.00619	0.00524	0.00776	0.00951	0.00944	0.03163	0.01757	0.05012
42. RAILROADS	0.01485	0.00021	0.00458	0.00127	0.00576	0.00046	0.00216	0.00346
43. TRUCKING + WAREHOUSING	0.00203	0.00503	0.00520	0.00399	0.01654	0.00846	0.00270	0.01818
44. ALL OTHER TRANSPORTATION	0.00050	0.00044	0.00248	0.00236	0.01112	0.00202	0.00246	0.00378
45. COMMUNICATIONS	0.00756	0.00174	0.00359	0.00582	0.00853	0.01772	0.01586	0.00680
46. ELECTRIC COMPANIES + SYSTEMS	0.00573	0.00223	0.00738	0.01427	0.01874	0.02950	0.01130	0.01156
47. GAS COMPANIES AND SYSTEMS	0.00635	0.00277	0.00475	0.02348	0.01788	0.02111	0.01016	0.01152
48. WATER + SANITARY SERVICES	0.00191	0.00172	0.00055	0.00199	0.00056	0.00280	0.00261	0.00241
49. TOTAL	1.18270	1.04127	1.19288	1.33646	1.17535	1.30859	1.18190	1.27736

TABLE III (CONTINUED)

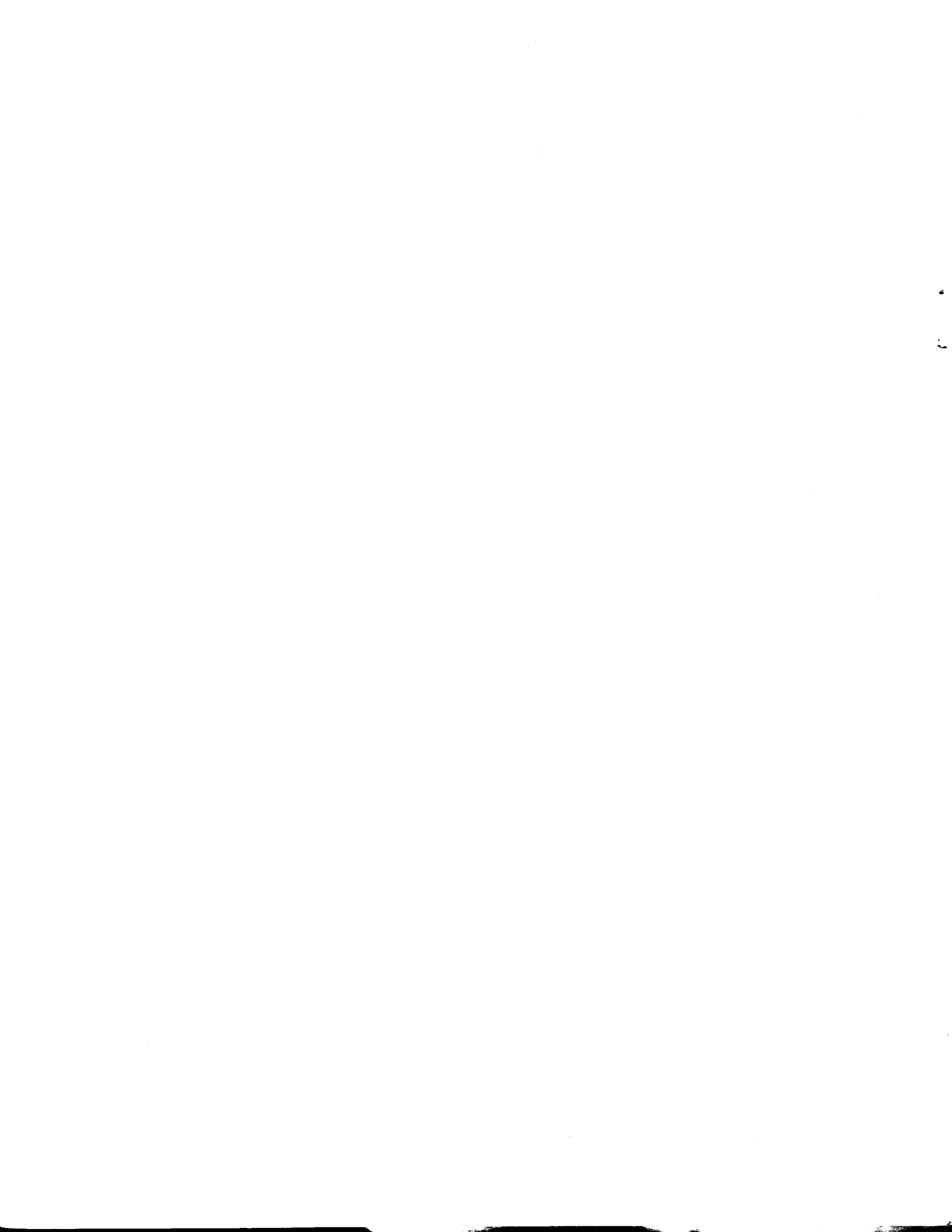
DIRECT AND INDIRECT REQUIREMENTS PER DOLLAR OF DELIVERY TO FINAL DEMAND, WEST VIRGINIA, 1975

	33	34	35	36	37	38	39	40
	BANKING	OTHER FINANCE	INSURANC AGENTS	REAL EST	ALL OTHER FIRE	HOTELS & LODGING	MEDICAL & LEGAL	EDUCATIONAL SERVICES
1. AGRICULTURE	0.00004	0.00007	0.00010	0.00016	0.00064	0.00981	0.00150	0.00037
2. COAL MINING (UNDERGROUND)	0.00064	0.00055	0.00041	0.00163	0.00190	0.02244	0.00275	0.00444
3. COAL MINING (STRIP + AUGER)	0.00021	0.00017	0.00014	0.00054	0.00046	0.03175	0.00045	0.00258
4. PETROLEUM + NATURAL GAS	0.00171	0.00060	0.00053	0.00167	0.00122	0.00245	0.00100	0.00133
5. ALL OTHER MINING	0.00015	0.00009	0.00003	0.00122	0.00012	0.00109	0.00022	0.00119
6. GENERAL CONTRACTORS (BUILDING)	0.00087	0.00064	0.00011	0.04749	0.00017	0.00237	0.00008	0.02003
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00026	0.00032	0.00008	0.00326	0.00020	0.00687	0.00027	0.02368
8. SPECIAL TRADES CONTRACTORS	0.00577	0.00125	0.00044	0.03519	0.00248	0.04145	0.00529	0.00886
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00007	0.00017	0.00022	0.00014	0.00186	0.00027	0.00439	0.00060
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00002	0.00007	0.00010	0.00008	0.00054	0.00009	0.00125	0.00073
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00003	0.00007	0.00010	0.00009	0.00052	0.00007	0.00115	0.00069
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00002	0.00005	0.00007	0.00005	0.00034	0.00007	0.00077	0.00087
13. APPAREL + ACCESSORIES	0.00005	0.00012	0.00003	0.00003	0.00184	0.00048	0.00437	0.00002
14. LOGGING + SAWMILLS	0.00015	0.00004	0.00002	0.00102	0.00009	0.00127	0.00017	0.00042
15. FURNITURE + PUBLISHING	0.00005	0.00004	0.00001	0.00130	0.00007	0.00014	0.00012	0.00017
16. PRINTING + PUBLISHING	0.00918	0.01942	0.00311	0.03367	0.00716	0.00773	0.00260	0.00411
17. CHEMICALS	0.00044	0.00057	0.00023	0.00089	0.00207	0.00101	0.00462	0.00051
18. PETROLEUM	0.00046	0.00031	0.00009	0.00126	0.00020	0.00181	0.00052	0.00334
19. GLASS	0.00047	0.00011	0.00009	0.00019	0.00108	0.00254	0.00238	0.00018
20. STONE + CLAY PRODUCTS	0.00275	0.00077	0.00011	0.00226	0.00029	0.00161	0.00035	0.00112
21. FABRICATED METAL PRODUCTS	0.00150	0.00067	0.00015	0.00408	0.00045	0.00357	0.00066	0.00152
22. MACHINERY (EXCEPT ELECTRICAL)	0.00023	0.00013	0.00002	0.00033	0.00006	0.00039	0.00008	0.00054
23. ELECTRICAL MACHINERY + APPARATUS	0.00031	0.00054	0.00013	0.00083	0.00028	0.00096	0.00028	0.00031
24. TRANSPORTATION EQUIPMENT	0.00002	0.00002	0.00001	0.00005	0.00002	0.00007	0.00002	0.00002
25. INSTRUMENTS + RELATED PRODUCTS	0.00140	0.00033	0.00026	0.00191	0.00089	0.00040	0.00015	0.00078
26. ALL OTHER MANUFACTURING	0.00025	0.00083	0.00196	0.00194	0.00035	0.00172	0.00018	0.00003
27. EATING + DRINKING ESTABLISHMENTS	0.00223	0.00318	0.00121	0.03156	0.00631	0.04315	0.00015	0.01233
28. WHOLESALE TRADE	0.00035	0.00076	0.00019	0.00121	0.00132	0.00030	0.00263	0.00016
29. RETAIL FOOD STORES	0.00045	0.00045	0.00078	0.00185	0.00102	0.00917	0.00205	0.00068
30. RETAIL GASOLINE SERVICE STATIONS	0.00357	0.00427	0.00211	0.00947	0.01183	0.01184	0.00893	0.01249
31. ALL OTHER RETAIL	1.00101	0.06853	0.00340	0.01056	0.00355	0.03692	0.00405	0.00204
32. BANKING	0.00114	1.00320	0.00053	0.00247	0.00181	0.00134	0.00419	0.00021
33. INSURANCE AGENTS + BROKERS	0.01158	0.00704	1.00448	0.00585	0.01051	0.03280	0.01364	0.00846
34. REAL ESTATE	0.00617	0.01104	0.00210	1.06922	0.00303	0.01050	0.00081	0.00135
35. ALL OTHER FIN, INSUR, + REAL ESTATE	0.00557	0.00127	0.06682	0.00463	1.00160	0.00305	0.00135	0.00075
36. HOTELS + OTHER LODGING PLACES	0.00028	0.00021	0.00059	0.00188	0.00054	1.00035	0.00047	0.00065
37. MEDICAL + LEGAL SERVICES	0.01065	0.02911	0.03026	0.00620	0.43499	0.00763	1.03456	0.00413
38. EDUCATIONAL SERVICES	0.00110	0.00360	0.00031	0.00185	0.00081	0.00178	0.00098	0.00471
39. ALL OTHER SERVICES	0.03986	0.07344	0.01591	0.09601	0.03494	0.08177	0.03361	1.02379
40. RAILROADS	0.00022	0.00028	0.00013	0.00068	0.00065	0.00196	0.00112	0.00049
41. TRUCKING + WAREHOUSING	0.00120	0.00097	0.00033	0.00256	0.00136	0.00615	0.00207	0.00480
42. ALL OTHER TRANSPORTATION	0.00360	0.00819	0.00079	0.00448	0.00189	0.00386	0.00174	0.00168
43. COMMUNICATIONS	0.01058	0.01733	0.00603	0.02629	0.01263	0.03863	0.00868	0.00934
44. ELECTRIC COMPANIES + SYSTEMS	0.00242	0.00203	0.00157	0.00598	0.00533	0.05541	0.00471	0.00849
45. GAS COMPANIES AND SERVICES	0.00424	0.00305	0.00537	0.01529	0.01211	0.02336	0.00953	0.01114
46. WATER + SANITARY SERVICES	0.00118	0.00064	0.00030	0.00292	0.00088	0.00831	0.00170	0.00244
49. TOTAL	1.17143	1.26717	1.15224	1.44814	1.57334	1.52103	1.18912	1.22181

TABLE III (CONTINUED)

DIRECT AND INDIRECT REQUIREMENTS PER DOLLAR OF DELIVERY TO FINAL DEMAND, WEST VIRGINIA, 1975

	41	42	43	44	45	46	47	48
	ALL OTHR SERVICES	RAILR'DS	TRUCK & WAREHOUS	ALL OTHR TRANSPOT	COMMUNICATI'NS	ELEC CD. SYSYMS	GAS CO. SYSYMS	WATER & SANITARY
1. AGRICULTURE	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2. COAL MINING (UNDERGROUND)	0.00148	0.00135	0.00130	0.00292	0.00205	0.00018	0.00008	0.00024
3. COAL MINING (STRIP + AUGER)	0.00004	0.00003	0.00004	0.00066	0.00064	0.00438	0.00031	0.001245
4. PETROLEUM + NATURAL GAS	0.00160	0.00084	0.00077	0.03625	0.00120	0.00105	0.09226	0.00171
5. ALL OTHER MINING	0.00035	0.00680	0.00038	0.00100	0.00145	0.00060	0.00021	0.003466
6. GENERAL CONTRACTORS (BUILDING)	0.00072	0.00037	0.00039	0.00008	0.00011	0.00014	0.00022	0.00051
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00059	0.00024	0.000743	0.00040	0.00055	0.00094	0.00083	0.00527
8. SPECIAL TRADES CONTRACTORS	0.00403	0.00847	0.00220	0.00477	0.00026	0.00006	0.00013	0.00006
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00005	0.00002	0.00005	0.00001	0.00002	0.00003	0.00008	0.00005
10. FOOD + KINDRED PRODUCTS (CAIRIES)	0.00004	0.00001	0.00002	0.00001	0.00003	0.00004	0.00008	0.00005
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00010	0.00001	0.00003	0.00001	0.00001	0.00002	0.00005	0.00004
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00004	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00009
13. APPAREL + ACCESSORIES	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00009
14. LOGGING + SAWMILLS	0.00015	0.00095	0.00009	0.00031	0.00008	0.00256	0.00003	0.00074
15. FURNITURE + OTHER WOOD FABRICATIGN	0.00023	0.00003	0.000028	0.00104	0.00006	0.00015	0.00012	0.00025
16. PRINTING + PUBLISHING	0.02653	0.00061	0.01037	0.00132	0.00467	0.00419	0.00245	0.00396
17. CHEMICALS	0.00556	0.00061	0.00035	0.00113	0.00054	0.00027	0.00012	0.02577
18. PETROLEUM	0.00212	0.00925	0.00207	0.00751	0.00377	0.00322	0.00026	0.01220
19. GLASS	0.00022	0.00005	0.00010	0.00005	0.00002	0.00003	0.00004	0.00051
20. STONE + CLAY PRODUCTS	0.00052	0.00157	0.00072	0.00045	0.00384	0.00417	0.00148	0.00186
21. PRIMARY METAL PRODUCTS	0.00229	0.00691	0.00052	0.06949	0.00244	0.00134	0.00078	0.00422
22. FABRICATED METAL PRODUCTS	0.00536	0.00171	0.00039	0.02504	0.00086	0.000217	0.000152	0.00192
23. MACHINERY (EXCEPT ELECTRICAL)	0.00107	0.00171	0.00018	0.00454	0.00021	0.00028	0.00006	0.00192
24. ELECTRICAL MACHINERY + APPARATUS	0.00659	0.00025	0.00009	0.00025	0.00386	0.00053	0.00007	0.00704
25. TRANSPORTATION EQUIPMENT	0.00025	0.00808	0.00067	0.00018	0.00010	0.00027	0.00004	0.00011
26. INSTRUMENTS + RELATED PRODUCTS	0.00016	0.00003	0.00008	0.00037	0.00010	0.00004	0.00002	0.00017
27. ALL OTHER MANUFACTURING	0.00039	0.00008	0.00068	0.02163	0.00058	0.00094	0.00065	0.00104
28. EATING + DRINKING ESTABLISHMENTS	0.00044	0.00004	0.00035	0.00028	0.00067	0.00093	0.00231	0.00054
29. WHOLESALE TRADE	0.02113	0.00221	0.05932	0.00847	0.00356	0.00867	0.00539	0.02364
30. RETAIL FOOD STORES	0.00094	0.00003	0.00038	0.00005	0.00017	0.00016	0.00011	0.00015
31. RETAIL GASOLINE SERVICE STATIONS	0.00366	0.00020	0.00475	0.00237	0.00096	0.00039	0.00192	0.00306
32. ALL OTHER RETAIL	0.01958	0.00272	0.00708	0.00123	0.00139	0.00164	0.00227	0.00241
33. BANKING	0.00616	0.00044	0.00504	0.00860	0.00352	0.00175	0.00211	0.00041
34. OTHER FINANCE	0.00033	0.00009	0.00091	0.00027	0.00007	0.00040	0.00044	0.00041
35. INSURANCE AGENTS + BROKERS	0.00883	0.02223	0.02260	0.00440	0.00263	0.00516	0.00973	0.01092
36. REAL ESTATE	0.00685	0.00028	0.00165	0.00060	0.00145	0.00136	0.00593	0.00127
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00180	0.00156	0.00176	0.00061	0.00180	0.00136	0.00200	0.00021
38. HOTELS + OTHER LODGING PLACES	0.00104	0.00018	0.00068	0.00129	0.00114	0.00064	0.00117	0.00021
39. MEDICAL + LEGAL SERVICES	0.00360	0.00286	0.00132	0.00046	0.00114	0.00312	0.00312	0.00233
40. EDUCATIONAL SERVICES	0.01937	0.00010	0.00008	0.00029	0.00254	0.00015	0.00015	0.00069
41. ALL OTHER SERVICES	1.03345	0.00518	0.00242	0.01448	0.02534	0.00736	0.00640	0.00569
42. RAILROADS	0.00086	1.00203	0.00162	0.00083	0.00892	0.01413	0.00169	0.00800
43. TRUCKING + WAREHOUSING	0.00067	0.00098	1.00183	0.00381	0.00963	0.02657	0.00220	0.01040
44. ALL OTHER TRANSPORTATION	0.00502	0.00090	0.00379	1.00501	0.00663	0.01128	0.00856	0.01234
45. COMMUNICATIONS	0.00983	0.00468	0.00552	0.00650	1.00196	0.00578	0.00297	0.01461
46. ELECTRIC COMPANIES + SYSTEMS	0.00512	0.00410	0.00552	0.00418	0.00843	1.03990	0.00208	0.05325
47. GAS COMPANIES AND SYSTEMS	0.01216	0.00172	0.00528	0.00375	0.00722	0.00193	1.00663	0.00622
48. WATER + SANITARY SERVICES	0.00303	0.00041	0.00080	0.00025	0.00017	0.00021	0.00096	1.01614
49. TOTAL	1.23148	1.11269	1.16847	1.24763	1.13936	1.43139	1.17745	1.42762



BIBLIOGRAPHY

Books:

Bourque, Philip J., and Richard S. Conway, Jr. *The 1972 Washington Input-Output Study*. Seattle: University of Washington Press, 1977.

Carter, Anne P. *Structural Change in the American Economy*. Cambridge: Harvard University Press, 1970.

Chicago, Alpha C. *Fundamental Methods of Mathematical Economics*. 2nd Edition. New York: McGraw-Hill Book Company, 1974.

Czarnanski, Stan. *Regional Science Techniques in Practice*. Lexington: D. C. Heath & Company, 1972.

Harmon, Floyd K., Vamon Rao, Jasbir S. Jaswal, and Wayne S. Chow. *Intersectoral Analysis of the Missouri Economy and Services in Current and Constant Dollars*. Published by State of Missouri, 1977.

Iard, Walter, ed. *Methods of Regional Analysis*. Cambridge: MIT Press, 1960.

Langford, Thomas W. *Regional Input-Output Study: Reflections, Reflections, and Diverse Notes on the Philadelphia Experience*. Cambridge: MIT Press, 1971.

Thomas W. Langford, and Eliahu Romanoff. *Philadelphia Region Input-Output Study - Working Papers*. Philadelphia: University of Pennsylvania, 1966.

Johnston, J. *Econometric Methods*, 2nd Edition. New York: McGraw-Hill Book Company, 1972.

Leonief, Wassily. *Input-Output Economics*. New York: Oxford University Press, 1966.

Miemyk, William H. *The Elements of Input-Output Analysis*. New York: Random House, 1965.

Ernest R. Bonner, John H. Chapman, Jr., and Kenneth Shellhammer. *Impact of the Space Program on a Local Economy*. Morgantown, WV: The West Virginia University Library, 1967.

Kenneth L. Shellhammer, Douglas M. Brown, Ronald L. Coccarri, Charles J. Gallagher, and Wesley H. Wineman. *Simulating Regional Economic Development*. Lexington: D. C. Heath & Company, 1970.

Richardson, Harry W. *Input-Output and Regional Economics*. New York: John Wiley & Sons, Inc., 1972.

Van, Chou-Shuang. *Introduction to Input-Output Economics*. New York: Holt, Rinehart & Winston, Inc., 1969.

Articles:

Bralley, I. E. and J. P. Cander. "Input-Output Multipliers: Some Theoretical Comments." *Journal of Regional Science*, 9 (1969), pp. 309-317.

Czarnanski, S. and E. E. Malizia. "Applicability and Limitations in the Use of National Input-Output Tables for Regional Studies." *Papers and Proceedings of the Regional Science Association*, 23 (1969), pp. 65-77.

Ciarra, F. "A Note on the McMenamin-Haring Input-Output Projection Technique." *Journal of Regional Science* (December 1975), pp. 371-373.

Hirsch, W. Z. "Interindustry Relations of a Metropolitan Area." *Review of Economics and Statistics*, 41 (1959), pp. 360-369.

Jensen, R. C. and D. McGuarr. "Reconciliation of Purchases and Sales Estimates in an Input-Output Table." *Urban Studies*, 13 (February 1976), pp. 61-62.

Leonief, W. "An Alternative to Aggregation in Input-Output Analysis and National Accounts." *Review of Economics and Statistics*, 49 (1967), pp. 412-419.

"Environmental Repercussions and the Economic Structure: An Input-Output Approach." *Review of Economics and Statistics*, 52 (1970), pp. 262-271.

"The Structure of Development." *Scientific American*, 209 (September 1963).

Leven, C. L. "Regional Income and Product Accounts: Construction and Application." In W. Hochwald (ed.) *Design of Regional Accounts*. Baltimore: John Hopkins Press, 1961, pp. 148-195.

McMenamin, D. G. and J. E. Haring. "An Appraisal of Non-Regional Accounts." *Journal of Regional Science*, 1 (1961), pp. 148-195.

Malizia, E. E. and Daniel L. Bond. "Empirical Tests of the RAS Method of Interindustry Coefficient Adjustment." *Journal of Regional Science*, 14 (December 1974), pp. 355-366.

Miemyk, William H. "Comments on Recent Developments in Regional Input-Output Analysis." *International Regional Science Review*, 2 Fall (1976).

"The Projection of Technical Coefficients for Medium-Term Dynamic Forecasting." In W. F. Goslin (ed.) *Medium-Term Dynamic Forecasting*. London: Input-Output Publishing Company, 1975, pp. 29-41.

"Regional and Interregional Input-Output Models: A Reappraisal." In Benjamin Chinitz, et al., (eds) *Spatial, Regional and Population Economics*. Essays in Honor of Edgar M. Hoover. New York: Gordon and Breach, 1973, pp. 263-292.

Sandoval, A. D. "Constant Relation Between Input-Output Income Multipliers." *Review of Economics and Statistics*, 49 (1967), pp. 599-600.

Scharfer, W. A. and K. Chu. "Non-Survey Techniques for Constructing Regional Interindustry Models." *Papers and Proceedings of the Regional Science Association*, 23 (1969), pp. 83-101.

U. S. Department of Commerce. "The Input-Output Structure of the U. S. Economy: 1967." *Survey of Current Business* (February 1974), pp. 24-59.

U. S. Government Documents:

Association of American Railroads, Economics and Finance Dept. *Yearbook of Railroad Facts* (1975) Association of American Railroads, Washington, D. C.

Economics Research Service. *Balance Sheet of the Farming Sector: 1976*. Department of Agriculture, Bulletin 403 (September 1976).

The Farm Cost Situation. Department of Agriculture, Bulletin 43 (February 1972).

U. S. Bureau of the Census. *Annual Survey of Manufactures, 1973, Industry Profiles, M71(AS) - 10* (1975).

U. S. Bureau of the Census. *Annual Survey of Manufactures, 1975, Industry Profiles, M76(AS) - 6* (1977).

County Business Patterns, 1975 - West Virginia 1977).

Census of Construction Industries, 1972. Area Series - South Atlantic States.

Census of Manufacturers, 1972. Area Series - West Virginia.

Census of Mineral Industries, 1972. Area Series - South Atlantic States.

Census of Retail Trade, 1972. Area Series - West Virginia.

Census of Selected Services, 1972. Area Series - West Virginia.

Census of Wholesale Trade, 1972. Area Series - West Virginia.

Local Government Finances in Selected Metropolitan Areas and Large Counties 1973-1974 and 1974-1975. Series GF-74, GF-75, No. 6 (1976) (1977).

1974 Census of Agriculture, Preliminary Report: West Virginia (July 1976).

State Government Finances in 1975. Series GF-75, No. 3 (1976).

Statistical Abstract of the United States, 1974, 1975, 1976.

U. S. Department of Commerce. *Survey of Current Business* (February 1974, August 1976, 1977, and 1978).

U. S. Bureau of Labor Statistics. *Consumer Expenditure Survey Series: Interview Survey, 1972-1973*. Report 455-4 (1977).

Relative Importance of Components in the Consumer Price Index, December 1975, Report 439. U. S. Bureau of Mines. *Minerals Yearbook 1975* (1977).

U. S. Community Services Administration. **Federal Outlays in West Virginia, 1975.**

U. S. Department of Agriculture. **Agricultural Statistics: 1975.**

..... **Handbook of Agricultural Charts: 1976.**
Handbook No. 504.

..... "Supplement to Statistical Bulletin No. 547, September 1975." **State Farm Income Statistics**, Economic Research Service, U.S.D.A.

U. S. Federal Communications Commission. **Statistics of Communications Common Carriers, 1975.**

..... **Thirty-ninth Annual Report, 1975.**

U. S. Office of Management and Budget. **Standard Industrial Classification Manual 1972 (1973).**

U. S. Treasury Department, Office of the Comptroller of the Currency. **1975 Annual Report of the Comptroller of the Currency.** Washington, D. C.: Comptroller of the Currency Administrator of National Banks (1976).

West Virginia Sources:

State of West Virginia, Chamber of Commerce. **West Virginia Business Index, 1974, 1975.**

....., Insurance Commissioner. **Insurance Commissioner's 65th Annual Report.**

....., Office of the State Auditor. **65th Annual Statement of Net Receipts and Disbursements (1977).**

....., Office of the Tax Commissioner. **36th Biennial Report.**

..... **75th Report of Financial Institutions.** Ed by Commissioner of Banking (1975).

..... **61st Annual Report of the Public Service Commission.** Ed by Muriel R. Moore and Robert L. Stine, BJW Printers, Beckley.

West Virginia Coal Association. **West Virginia Coal Facts, 1975.**

West Virginia Department of Commerce, Industrial Development Division, **1976 West Virginia Economic Profile.**

....., Industrial Development Division. **West Virginia Manufacturing Directory, 1976.**

West Virginia Department of Employment Security. **Employment Wages, 1973, 1974, 1975.**

West Virginia Department of Mines. **Annual Report.**

West Virginia Research League, Inc. **The 1975 Statistical Handbook.**

Other

American Gas Association, Department of Statistics. **1973 Gas Facts (1974).**

Moody's Investors Service, Inc. **Moody's Transportation Manual.** New York (1976).

APPENDIX

Regional Research Institute
West Virginia University

West Virginia Interindustry Relations Study
Instructions for Business Questionnaire

Will you please read the instructions to each set of questions carefully before responding. It is important that the information you provide be consistent with that of other establishments in the survey.

If you have any questions will you please call Dr. Frank Giarratani at (304) 293-2896, collect.

Questions 4, 5, & 6

Your answers to these questions will permit us to classify your establishment by size and industry. Once this is done, your establishment data will be combined with those of other firms in your industry. These data *and all other information you provide* will be used only at the *industry* level.

Question 7

By "typical" dollar of sales we mean an average sale by your establishment to intermediate *users* (other industries) and final *users* (households, government). The word "users" has been emphasized because it is important that we identify those sectors that actually use your products or services for additional production and those that buy your product or service for final consumption. If most of your sales are to a wholesaler or retailer--who in turn passes your product on to other sectors--*it is the sector of final destination that we wish to identify.*

Example: Sales

Sector		Percent to West Virginia Sectors
Manufacturing	15	
9. Food & Kindred Products (meats)		%
10. Food & Kindred Products (dairies)		%
11. Food & Kindred Products (bakeries)		%
12. Food & Kindred Products (beverages)		%
13. Apparel & Accessories		%
14. Logging & Sawmills	.02	50%
15. Furniture & Other Wood Fabrication		%
16. Printing & Publishing		%
17. Chemicals	.03	80%
18. Petroleum		%
19. Glass		%
20. Stone & Clay Products		%
21. Primary Metal Products		%
22. Fabricated Metal Products	.05	%
23. Machinery (except electrical)		%
24. Electrical Machinery & Apparatus		%
25. Transportation Equipment		%
26. Instruments & Related Products	.05	%
27. All Other Manufacturing		%

This hypothetical respondent has indicated that 15 cents of a typical dollar of sales went to the major group "Manufacturing." This includes sales to West Virginia establishments in Sectors 14 and 17. All other manufacturing sales were to establishments outside of West Virginia.

Consider *only* those capital goods purchased from West Virginia establishments here and estimate the percent of your expenditures to each of the sectors indicated.

Question 14

These questions ask that you identify generally the geographic origin of expansion and replacement capital goods purchased by your firm.

Questions 11, 12, & 13

Continued growth in West Virginia will cause some industries to expand capacity. Answers to questions 9 and 10 will permit us to estimate the anticipated increase in capacity associated with capital expenditures in any given year. We have chosen a three-year period to average the effect of unusual expenditures in any one year. *Potential* output is very difficult to estimate; but your response, along with those of other establishments, will permit us to estimate the amount of investment needed to expand capacity by a given amount.

Questions 9 & 10

This hypothetical respondent has indicated that 10 cents of a typical dollar of current expenses has been assigned to the major group "Manufacturing." Of this amount, purchases were made from West Virginia establishments in Sectors 17 and 26. All other purchases were from establishments located outside of the state. Instruments and related products were purchased from a wholesale firm. All other purchases were from the industries shown.

X = Purchases "passed through" wholesale sector. All others are direct purchases for sector shown.

Sector	Percent From West Virginia Establishments
27. All Other Manufacturing	80%
26. Instruments & Related Products	X .04
25. Transportation Equipment	.01
24. Electrical Machinery & Apparatus	
23. Machinery (except electrical)	
22. Fabricated Metal Products	
21. Primary Metal Products	
20. Stone & Clay Products	
19. Glass	
18. Petroleum	
17. Chemicals	.02
16. Printing & Publishing	
15. Furniture & Other Wood Fabrication	.03
14. Logging & Sawmills	
13. Apparel & Accessories	
12. Food & Kindred Products (beverages)	
11. Food & Kindred Products (bakeries)	
10. Food & Kindred Products (dairies)	
9. Food & Kindred Products (meats)	
Manufacturing	.10

Example: Current Expenses

Sector 44a, Company-owned Transportation, includes leased vehicles.

The purpose of this question is to identify the industrial *origin* of the goods and services required by your establishment for use in *current* production. Please make every effort to assign to individual industries their appropriate share of your expenses. Your establishment may purchase a substantial part of its inputs from wholesalers, but it is important that such purchases be assigned to the industry from which they originate. Please indicate, where appropriate that this purchase "passed through" a wholesaler by an "X".

Question 8

Goods purchased on capital account are considered later in this questionnaire.

8. How much of a *typical* dollar of your establishment's current expenses (purchases) can be attributed to each of the following sectors:

Sector		Percent From WEST VIRGINIA Establishments
Agriculture and Extractive Industries		
1. Agriculture	<input type="text"/>	_____%
2. Coal Mines (underground)	<input type="text"/>	_____%
3. Coal Mines (strip and auger)	<input type="text"/>	_____%
4. Petroleum & Natural Gas	<input type="text"/>	_____%
5. All Other Mining	<input type="text"/>	_____%
Contractors		
6. General Contractors (building)	<input type="text"/>	_____%
7. General Contractors (non-building)	<input type="text"/>	_____%
8. Special Trade Contractors	<input type="text"/>	_____%
Manufacturing		
9. Food & Kindred Products (meats)	<input type="text"/>	_____%
10. Food & Kindred Products (dairies)	<input type="text"/>	_____%
11. Food & Kindred Products (bakeries)	<input type="text"/>	_____%
12. Food & Kindred Products (beverages)	<input type="text"/>	_____%
13. Apparel & Accessories	<input type="text"/>	_____%
14. Logging & Sawmills	<input type="text"/>	_____%
15. Furniture & Other Wood Fabrication	<input type="text"/>	_____%
16. Printing & Publishing	<input type="text"/>	_____%
17. Chemicals	<input type="text"/>	_____%
18. Petroleum	<input type="text"/>	_____%
19. Glass	<input type="text"/>	_____%
20. Stone & Clay Products	<input type="text"/>	_____%
21. Primary Metal Products	<input type="text"/>	_____%
22. Fabricated Metal Products	<input type="text"/>	_____%
23. Machinery (except electrical)	<input type="text"/>	_____%
24. Electrical Machinery & Apparatus	<input type="text"/>	_____%
25. Transportation Equipment	<input type="text"/>	_____%
26. Instruments & Related Products	<input type="text"/>	_____%
27. All Other Manufacturing	<input type="text"/>	_____%
Wholesale and Retail Trade		
28. Eating and Drinking Establishments	<input type="text"/>	_____%
29. Wholesale Trade	<input type="text"/>	_____%
30. Retail Food Stores	<input type="text"/>	_____%
31. Retail Gasoline Service Stations	<input type="text"/>	_____%
32. All Other Retail	<input type="text"/>	_____%
Services		
33. Banking	<input type="text"/>	_____%
34. Other Finance	<input type="text"/>	_____%
35. Insurance Agents & Brokers	<input type="text"/>	_____%
36. Real Estate	<input type="text"/>	_____%
37. All Other Finance, Ins. & Real Estate	<input type="text"/>	_____%
38. Hotels & Other Lodging Places	<input type="text"/>	_____%
39. Medical & Legal Services	<input type="text"/>	_____%
40. Educational Services	<input type="text"/>	_____%
41. All Other Services	<input type="text"/>	_____%
Transportation		
42. Railroads	<input type="text"/>	_____%
43. Trucking & Warehousing	<input type="text"/>	_____%
44. All Other Transportation	<input type="text"/>	_____%
44a. Company-Owned Transportation	<input type="text"/>	_____%
Communications & Utilities		
45. Communications	<input type="text"/>	_____%
46. Electric Companies & Systems	<input type="text"/>	_____%
47. Gas Companies & Systems	<input type="text"/>	_____%
48. Water & Sanitary Services	<input type="text"/>	_____%
Final Payments		
49. Wages & Salaries	<input type="text"/>	
50. Local Government (taxes)	<input type="text"/>	
51. State Government (taxes)	<input type="text"/>	
52. Federal Government (taxes)	<input type="text"/>	
53. Profits, Retained Earnings	<input type="text"/>	
54. Depreciation Allowance	<input type="text"/>	
Typical Dollar of Expenses	<u>\$1.00</u>	

15. What percent of your total sales in 1975 were made from inventory accumulated in 1974 or earlier? _____ %
16. What percent of your total production in 1975 was accumulated in inventory to be sold in 1976 or later? _____ %

Expansion Capital	Replacement Capital
5. Mining (other than coal)	
6. General Contractors (building)	
7. General Contractors (non-building)	
8. Special Trade Contractors	
Manufacturing	
14. Logging & Sawmills	
15. Furniture & Other Wood Fabrication	
20. Stone & Clay Products	
21. Primary Metal Products	
22. Fabricated Metal Products	
23. Machinery (except electrical)	
24. Electrical Machinery & Apparatus	
25. Transportation Equipment	
26. Instruments & Related Products	
27. All Other Manufacturing	
Wholesale and Retail Trade	
29. Wholesale Trade	
32. Retail Trade	
Total	100%

9. What was your average yearly expenditure for capital goods over the period 1973-1975? _____ \$ (to the nearest thousand)
10. By what dollar amount was your potential output, or capacity, increased as a result of this expenditure? (The figure we want is the average annual increase in capacity over the three years covered by question 9.)
Average increase in capacity \$ _____
11. How much of this average yearly investment was for:
a) expansion \$ _____
b) replacement \$ _____
Total \$ _____ (From question 9)
12. What percent of the replacement capital goods purchased by your establishment were produced.
a) in West Virginia _____ %
b) outside of West Virginia _____ %
Total _____ %
13. What percent of the expansion capital goods purchased by your establishment were produced by firms located . . .
a) in West Virginia _____ %
b) outside of West Virginia _____ %
Total _____ %
14. What percent of your expenditures on expansion and replacement capital can be attributed to the following West Virginia sectors:

CONFIDENTIAL

Regional Research Institute
West Virginia University

West Virginia Interindustry Relations Study
Business Questionnaire
(for year ending December 31, 1975)

Establishment Code Number _____

1. Name of Establishment _____

2. Address _____

3. Respondent and Title _____

4. Principal Products or Services (and % of total sales)

1. _____ %	4. _____ %
2. _____ %	5. _____ %
3. _____ %	6. _____ %
	Total 100 %

5. What was your average monthly employment in 1975? _____

6. What were your total sales in 1975 (to the nearest thousand)? _____

Table 5.—Industry-by-Commodity Total Requirements, 1972

[Total requirements, direct and indirect, per dollar of delivery to final demand, at producers' prices]

Industry number	Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand of the commodity named at the head of the column.	Commodity number												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Livestock and livestock products.....	1.46552	0.04607	0.04616	0.17406	0.00147	0.00137	0.00117	0.00160	0.0127	0.00163	0.00288	0.00264	0.00482
2	Other agricultural products.....	0.37491	1.04990	1.1602	14.622	0.00146	0.00128	0.00132	0.00120	0.0010	0.00183	0.00265	0.00333	
3	Forestry and fishery products.....	0.0178	0.0667	8.8194	0.0619	0.0059	0.0080	0.0104	0.0028	0.0035	0.0042	0.0078	0.0074	
4	Agricultural, forestry, and fishery services.....	0.0438	0.0395	0.2212	8.8761	0.0015	0.0039	0.0043	0.0028	0.0033	0.0058	0.0043	0.0058	
5	Iron and ferroalloy ores mining.....	0.0060	0.0058	0.0017	0.0066	0.9689	0.0508	0.0028	0.0083	0.0037	0.0032	0.0044	0.0078	
6	Nonferrous metal ores mining.....	0.0093	0.0037	0.0146	0.0115	0.0696	0.12545	0.0071	0.0012	0.00155	0.0059	0.0059	0.0078	
7	Coal mining.....	0.0251	0.0227	0.0150	0.0234	0.0191	0.0499	1.14008	0.00182	0.0057	0.0083	0.0049	0.0232	
8	Crude petroleum and natural gas.....	0.0106	0.2423	0.1774	0.0248	0.1888	0.0660	0.12525	1.05888	0.0061	0.0240	0.0169	0.0230	
9	Stone and clay mining and quarrying.....	0.0187	0.0382	0.0038	0.0011	0.0019	0.0240	0.0029	0.0068	0.0062	0.0120	0.0130	0.0101	
10	Chemical and fertilizer mineral mining.....	0.0071	0.00491	0.0070	0.0013	0.0083	0.0032	0.0055	0.0030	0.0033	1.0320	0.0084	0.0071	
11	New construction.....										1.00000			
12	Maintenance and repair construction.....	0.0247	0.0232	0.0078	0.0286	0.0205	0.0188	0.0203	0.0729	0.0166	0.0289	0.0128	0.0102	
13	Ordinance and accessories.....	0.0011	0.0015	0.0029	0.0021	0.0020	0.0021	0.0027	0.0009	0.0024	0.0022	0.0026	0.0017	
14	Food and kindred products.....	0.2107	0.1112	0.0312	0.0560	0.0065	0.0028	0.0021	0.0021	0.0042	0.0041	0.0042	0.0070	
15	Tobacco manufactures.....	0.0010	0.0007	0.0012	0.0021	0.0017	0.0012	0.0008	0.0011	0.0011	0.0033	0.0018	0.0019	
16	Broad and narrow fabrics, yarn and thread mills.....	0.0241	0.0264	0.1732	0.0016	0.0018	0.0220	0.0475	0.0056	0.0080	0.0029	0.0478	0.0088	
17	Miscellaneous textile goods and floor coverings.....	0.0292	0.0296	0.2759	0.0129	0.0018	0.0132	0.0088	0.0036	0.0071	0.0071	0.0071	0.0071	
18	Apparel.....	0.0054	0.0039	0.0144	0.0104	0.0051	0.0045	0.0150	0.0040	0.0047	0.0050	0.0039	0.0074	
19	Miscellaneous fabricated textile products.....	0.0078	0.0087	0.0017	0.0046	0.0063	0.0031	0.0041	0.0015	0.0042	0.0054	0.0042	0.0060	
20	Lumber and wood products, except containers.....	0.0472	0.0498	0.0624	0.0803	0.0072	0.0124	0.01374	0.0028	0.0095	0.0081	0.0154	0.0337	
21	Wood containers.....	0.00162	0.0053	0.0025	0.0040	0.0012	0.0010	0.0013	0.0005	0.0011	0.0011	0.0027	0.0021	
22	Household furniture.....	0.0008	0.0065	0.0039	0.0010	0.0011	0.0010	0.0007	0.0005	0.0006	0.0007	0.0010	0.0017	
23	Other furniture and fixtures.....	0.0010	0.0009	0.0023	0.0017	0.0023	0.0014	0.0012	0.0009	0.0016	0.0015	0.0017	0.0016	
24	Paper and allied products, except containers.....	0.0173	0.0070	0.0175	0.0046	0.0063	0.0031	0.0041	0.0015	0.0042	0.0054	0.0042	0.0060	
25	Paperboard containers and boxes.....	0.0079	0.0018	0.0076	0.0204	0.0176	0.0187	0.0151	0.0086	0.0088	0.0011	0.0022	0.0030	
26	Printing and publishing.....	0.0174	0.00852	0.1243	0.2140	0.1120	0.0877	0.0939	0.0705	0.0169	0.0141	0.0182	0.0029	
27	Chemicals and selected chemical products.....	0.0436	0.0186	0.2385	0.0197	0.2226	0.4851	0.01894	0.0123	0.2243	0.0053	0.0159	0.2159	
28	Plastics and synthetic materials.....	0.0454	0.0039	0.0078	0.0062	0.0046	0.0035	0.0039	0.0028	0.0079	0.0015	0.0032	0.0045	
29	Drugs, cleaning and toilet preparations.....	0.0480	0.0021	0.0150	0.0024	0.0110	0.0143	0.0032	0.0049	0.0019	0.0035	0.0011	0.0041	
30	Paints and allied products.....	0.0149	0.0161	0.0320	0.0019	0.0239	0.0034	0.0118	0.0012	0.0032	0.0048	0.0089	0.0296	
31	Petroleum refining and related industries.....	0.0298	0.0455	0.0217	0.0500	0.0227	0.2331	0.2258	0.0966	0.0112	0.0303	0.2843	0.4294	
32	Rubber and miscellaneous plastics products.....	0.01290	0.01073	0.00605	0.00877	0.01830	0.2568	0.1285	0.0288	0.0430	0.0017	0.0146	0.0124	
33	Leather tanning and finishing.....	0.0014	0.0004	0.0024	0.0002	0.0003	0.0003	0.0003	0.0003	0.0004	0.0004	0.0006	0.0006	
34	Footwear and other leather products.....	0.0063	0.0013	0.0076	0.0015	0.0008	0.0009	0.0006	0.0008	0.0008	0.0015	0.0014	0.0014	
35	Glass and glass products.....	0.00397	0.0063	0.0063	0.0178	0.0129	0.0117	0.0064	0.0008	0.0085	0.0084	0.0366	0.0334	
36	Stone and clay products.....	0.00235	0.00250	0.0024	0.0011	0.0011	0.0088	0.0842	0.0008	0.0056	0.0040	0.0025	0.0346	
37	Primary iron and steel manufacturing.....	0.0113	0.0050	0.2181	0.1240	0.0449	0.0401	0.0397	0.0150	0.0487	0.0075	0.0178	0.0076	
38	Primary nonferrous metals manufacturing.....	0.0086	0.0098	0.1325	0.0783	0.0141	0.218	0.1325	0.0095	0.0164	0.0144	0.0011	0.0219	
39	Metal containers.....	0.0073	0.0018	0.1347	0.0029	0.0485	0.0099	0.0071	0.0018	0.0005	0.0000	0.0017	0.0017	
40	Heating, plumbing, and structural metal products.....	0.0028	0.0022	0.0024	0.0041	0.0033	0.0157	0.0071	0.0031	0.0030	0.0043	0.0012	0.0077	
41	Screw machine products and stampings.....	0.0045	0.0011	0.0020	0.0020	0.0027	0.0023	0.0107	0.0040	0.0046	0.0060	0.0071	0.0002	
42	Other fabricated metal products.....	0.0047	0.0036	0.0159	0.0093	0.0184	0.0142	0.0017	0.0012	0.0008	0.0008	0.0011	0.0182	
43	Engines and turbines.....	0.0029	0.0019	0.0035	0.0051	0.0040	0.0006	0.0014	0.0030	0.0029	0.0105	0.0017	0.0030	
44	Farm and garden machinery.....	0.0011	0.0084	0.0014	0.0063	0.0061	0.0077	0.0033	0.0005	0.0014	0.0009	0.0001	0.0043	
45	Construction and mining machinery.....	0.0074	0.0060	0.0106	0.0095	0.0207	0.0270	0.0437	0.0038	0.0074	0.0063	0.0039	0.0075	
46	Materials handling machinery and equipment.....	0.0028	0.0028	0.0026	0.0020	0.0284	0.0305	0.0070	0.0049	0.0008	0.0040	0.0045	0.0042	
47	Metalworking machinery and equipment.....	0.0080	0.0069	0.0145	0.0101	0.0230	0.0214	0.0033	0.0106	0.0020	0.0018	0.0036	0.0021	
48	Special industry machinery and equipment.....	0.0083	0.0013	0.0101	0.0105	0.0081	0.0005	0.0077	0.0006	0.0007	0.0008	0.0015	0.0010	
49	General industrial machinery and equipment.....	0.0028	0.0021	0.0107	0.0238	0.0728	0.1660	0.0531	0.0064	0.0027	0.0085	0.0025	0.0030	
50	Miscellaneous machinery, except electrical.....	0.0037	0.0012	0.0031	0.0160	0.0028	0.0033	0.0022	0.0017	0.0079	0.0026	0.0039	0.0020	
51	Office, computing, and accounting machines.....	0.0021	0.0019	0.0026	0.0039	0.0026	0.0039	0.0028	0.0020	0.0032	0.0039	0.0053	0.0036	
52	Service industry machines.....	0.0013	0.0010	0.0178	0.0176	0.0189	0.0096	0.0095	0.0146	0.0037	0.0033	0.0192	0.0289	
53	Electric industrial equipment and apparatus.....	0.0018	0.0021	0.0038	0.0108	0.0060	0.0034	0.0034	0.0034	0.0040	0.0030	0.0181	0.0025	
54	Household appliances.....	0.0030	0.0026	0.0076	0.0041	0.0055	0.0031	0.0033	0.0047	0.0031	0.0039	0.0072	0.0014	
55	Electric lighting and wiring equipment.....	0.0092	0.0077	0.0185	0.0105	0.0028	0.0152	0.0019	0.0012	0.0035	0.0034	0.0163	0.0163	
56	Radio, TV, and communication equipment.....	0.0038	0.0044	0.0096	0.0068	0.0082	0.0050	0.0050	0.0077	0.0070	0.0061	0.0027	0.0020	
57	Electronic components and accessories.....	0.0032	0.0043	0.0085	0.0040	0.0071	0.0061	0.0038	0.0008	0.0005	0.0007	0.0013	0.0011	
58	Misc. electrical machinery and supplies.....	0.0015	0.0033	0.0083	0.020	0.0128	0.0155	0.0070	0.0012	0.0012	0.0003	0.0011	0.0016	
59	Motor vehicles and equipment.....	0.0072	0.0043	0.0067	0.0117	0.0273	0.0528	0.0516	0.0021	0.0127	0.0010	0.0053	0.0048	
60	Aircraft and parts.....	0.0063	0.0047	0.0124	0.0247	0.0086	0.0074	0.0072	0.0066	0.0028	0.0014	0.0017	0.0085	
61	Other transportation equipment.....	0.0082	0.0059	0.2079	0.0184	0.0026	0.0230	0.0109	0.0043	0.0017	0.00165	0.00159	0.00099	
62	Scientific and controlling instruments.....	0.0054	0.0046	0.0041	0.0058	0.0082	0.0083	0.0048	0.0008	0.0005	0.0004	0.0014	0.0015	
63	Optical, ophthalmic, and photographic equipment.....	0.0006	0.0055	0.0070	0.0130	0.0005	0.0000	0.0057	0.0042	0.0005	0.0008	0.0010	0.0005	
64	Miscellaneous manufacturing.....	0.0130	0.0122	0.0042	0.0040	0.0032	0.0049	0.0003	0.0024	0.0025	0.0011	0.0027	0.0016	
65	Transportation and warehousing.....	0.5140	0.3458	0.3758	0.0102	0.4247	0.8269	0.2630	0.0159	0.6880	0.0644	0.0159	0.0038	
66	Communications, except radio and TV.....	0.0129	0.0078	0.0079	0.1365	0.0043	0.0055	0.0049	0.0085	0.0068	0.0076	0.0060	0.0077	
67	Radio and TV broadcasting.....	0.0233	0.0204	0.0025	0.0045	0.0040	0.00218	0.00217	0.00185	0.0018	0.0019	0.0043	0.0010	
68	Electric, gas, water, and sanitary services.....	0.2879	0.2109	0.1102	0.2755	0.0878	0.0594	0.0383	0.2209	0.0587	0.0079	0.0283	0.0153	
69	Wholesale and retail trade.....	0.8001	0.6844	0.5174	0.0720	0.1689	0.1786	0.1199	0.0147	0.0748	0.0380	0.0076	0.0022	
70	Finance and insurance.....	0.4248	0.2969	0.2337	0.0804	0.0214	0.2915	0.0127	0.0148	0.02				

Table 5.—Industry-by-Commodity
(Total requirements, direct and indirect, per dollar)

Industry number	Commodity number	Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand of the commodity named at the head of the column.												
		Food and kindred products	Tobacco manufactures	Broad and narrow fabrics, yarn and thread mills	Miscellaneous textile goods and floor coverings	Apparel	Miscellaneous textile products	Lumber and wood products, except containers	Wood containers	Household furniture	Other furniture and fixtures	Paper and allied products, except containers	Paperboard containers and boxes	Printing and publishing
		14	15	16	17	18	19	20	21	22	23	24	25	26
1	Livestock and livestock products	0.41618	0.01114	0.01493	0.02212	0.00774	0.01123	0.00714	0.00430	0.00652	0.00363	0.00719	0.00423	0.00405
2	Other agricultural products	1.9979	2.2732	0.05012	0.0575	0.00774	0.01496	0.00714	0.00430	0.00652	0.00363	0.00719	0.00423	0.00405
3	Forestry and fishery products	0.00791	0.0046	0.00102	0.00102	0.0058	0.0030	0.00714	0.00430	0.00652	0.00363	0.00719	0.00423	0.00405
4	Agriculture, forestry, and fishery services	0.01741	0.00793	0.00374	0.00217	0.00173	0.00214	0.00366	0.00214	0.00166	0.00080	0.0022	0.00079	0.00075
5	Iron and ferroalloy ores mining	0.00120	0.00030	0.00079	0.00081	0.00050	0.00077	0.00142	0.00080	0.00081	0.00053	0.00073	0.00094	0.00046
6	Nonferrous metal ores mining	0.00136	0.00054	0.00206	0.00202	0.00122	0.00142	0.00171	0.00137	0.00201	0.00140	0.00175	0.00173	0.00155
7	Coal mining	0.06233	0.00146	0.00007	0.00573	0.00331	0.00448	0.00576	0.00485	0.00427	0.00488	0.00216	0.00663	0.00319
8	Crude petroleum and natural gas	0.01336	0.00819	0.01859	0.01846	0.0131	0.01330	0.0145	0.01421	0.0144	0.01652	0.02121	0.01714	0.00200
9	Stone and clay mining and quarrying	0.01164	0.00111	0.00170	0.00162	0.00064	0.00122	0.00174	0.00118	0.00158	0.00162	0.00594	0.00201	0.00143
10	Chemical and fertilizer mineral mining	0.00127	0.00103	0.00365	0.00340	0.00162	0.00205	0.00080	0.00047	0.00101	0.00089	0.00210	0.00135	0.00094
11	New construction													
12	Maintenance and repair construction	0.01880	0.01047	0.01910	0.01875	0.00912	0.00913	0.01587	0.01624	0.01473	0.01595	0.02711	0.02386	0.01721
13	Ordinance and accessories	0.00012	0.00008	0.00021	0.00021	0.00012	0.00012	0.00019	0.00015	0.00022	0.00020	0.00016	0.00015	0.00011
14	Food and kindred products	1.25489	0.00570	0.01367	0.01455	0.01374	0.01372	0.00227	0.00229	0.01404	0.00804	0.01024	0.01146	0.01048
15	Tobacco manufactures	0.00013	1.28159	0.00019	0.00013	0.00015	0.00021	0.00015	0.00038	0.00019	0.00029	0.00021	0.00019	0.00025
16	Broad and narrow fabrics, yarn and thread mills	0.00313	0.00194	1.38014	0.0278	0.01731	0.03775	0.00446	0.00239	0.00573	0.00253	0.00273	0.00440	0.00704
17	Miscellaneous textile goods and floor coverings	0.00234	0.00132	0.00353	0.00346	0.01491	0.01385	0.00488	0.00224	0.00257	0.00250	0.00176	0.00173	0.00173
18	Miscellaneous fabricated textile products	0.00100	0.00044	0.00013	0.00207	1.33039	0.00029	0.00133	0.00056	0.00053	0.00103	0.00103	0.00104	0.00099
19	Lumber and wood products, except containers	0.00111	0.00040	0.01155	0.01142	0.01918	0.00489	0.00181	0.00065	0.00069	0.00075	0.00066	0.00106	0.00085
20	Wood containers	0.00737	0.00321	0.01122	0.01089	0.00808	0.01187	1.39165	0.02222	0.00081	0.01173	0.01453	0.00121	0.02504
21	Wood containers	0.00160	0.00141	0.00038	0.00021	0.00018	0.00025	0.00018	0.00006	0.00006	0.00008	0.00008	0.00008	0.00011
22	Household furniture	0.00020	0.00036	0.00015	0.00013	0.00015	0.00016	0.00014	0.00012	0.00020	0.00016	0.00016	0.00016	0.00011
23	Other furniture and fixtures	0.00012	0.00007	0.00013	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00012	0.00011
24	Paper and allied products, except containers	0.03453	0.02541	0.02672	0.02514	0.02173	0.0214	0.0194	0.00946	0.02187	0.01821	1.19044	0.0077	0.0058
25	Paperboard containers and boxes	0.02974	0.01196	0.01537	0.01855	0.01829	0.01938	0.00721	0.00396	0.02384	0.01693	0.02769	1.01629	0.01176
26	Printing and publishing	0.02358	0.02481	0.01295	0.01764	0.01405	0.01547	0.01056	0.01110	0.01425	0.01330	0.02404	0.02322	1.13129
27	Chemicals and selected chemical products	0.02332	0.02749	0.01899	0.01490	0.00588	0.00834	0.02808	0.01477	0.00337	0.02777	0.02717	0.03481	0.02140
28	Plastics and synthetic materials	0.00383	0.00403	0.01175	0.02214	0.00808	0.00782	0.00733	0.00394	0.00129	0.01923	0.02735	0.02137	0.00557
29	Drugs, cleaning and toilet preparations	0.00705	0.00238	0.00009	0.00044	0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	0.00046
30	Paints and allied products	0.00188	0.00073	0.00349	0.00484	0.00186	0.00241	0.00793	0.00322	0.01272	0.01025	0.00294	0.00210	0.00185
31	Petroleum refining and related industries	0.02106	0.01380	0.02751	0.02766	0.01669	0.01968	0.03001	0.02344	0.01758	0.01307	0.03186	0.02660	0.01385
32	Rubber and miscellaneous plastics products	0.01917	0.01830	0.02270	0.05000	0.01825	0.00949	0.01493	0.00893	0.00521	0.01176	0.03309	0.01936	0.01812
33	Leather tanning and finishing	0.00007	0.00003	0.00008	0.00075	0.00710	0.00638	0.00910	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006
34	Footwear and other leather products	0.00026	0.00009	0.00009	0.00045	0.01012	0.00150	0.00037	0.00020	0.00020	0.00015	0.00020	0.00015	0.00012
35	Glass and glass products	0.01972	0.00654	0.00665	0.00711	0.00260	0.00429	0.00424	0.00251	0.00858	0.01065	0.00158	0.00174	0.00092
36	Stone and clay products													
37	Primary iron and steel manufacturing	0.00313	0.00163	0.00947	0.00587	0.00233	0.00226	0.01678	0.00872	0.01207	0.00940	0.00865	0.00317	0.00340
38	Primary nonferrous metals manufacturing	0.02449	0.00345	0.01087	0.01178	0.00511	0.01323	0.00357	0.00669	0.00727	0.01452	0.01349	0.01820	0.00556
39	Metal containers	0.01196	0.00343	0.00022	0.00094	0.00737	0.00778	0.01580	0.01140	0.02794	0.01066	0.01419	0.01099	0.00337
40	Heating, plumbing, and structural metal products	0.00574	0.00085	0.00289	0.00286	0.00173	0.00220	0.00343	0.00145	0.00233	0.00181	0.00218	0.00181	0.00087
41	Screw machine products and stampings	0.00112	0.00056	0.00123	0.00079	0.00079	0.00099	0.00540	0.00282	0.00218	0.00253	0.00176	0.00136	0.00089
42	Other fabricated metal products	0.00459	0.00107	0.00171	0.00221	0.00171	0.00432	0.00604	0.00604	0.00604	0.00604	0.00604	0.00604	0.00604
43	Engines and turbines	0.00610	0.00581	0.00432	0.00411	0.00369	0.00361	0.04584	0.00724	0.01193	0.02649	0.00274	0.00417	0.00163
44	Farm and garden machinery	0.00093	0.00052	0.00080	0.00080	0.00056	0.00077	0.01889	0.01119	0.00103	0.00132	0.00095	0.00094	0.00071
45	Construction and mining machinery	0.00354	0.00211	0.00104	0.00066	0.00051	0.00170	0.00449	0.00144	0.00057	0.00072	0.00047	0.00130	0.00030
46	Materials handling machinery and equipment	0.00067	0.00036	0.00091	0.00087	0.00052	0.00067	0.00130	0.00069	0.00104	0.00143	0.00136	0.00090	0.00050
47	Metalworking machinery and equipment	0.00024	0.00013	0.00187	0.00111	0.00088	0.00108	0.00187	0.00092	0.00065	0.00249	0.00064	0.00041	0.00030
48	Special industry machinery and equipment	0.00011	0.00006	0.00121	0.00134	0.00078	0.00110	0.00214	0.00092	0.00065	0.00249	0.00064	0.00041	0.00030
49	General industrial machinery and equipment	0.00138	0.00060	0.01187	0.01040	0.00530	0.00556	0.00386	0.00395	0.00509	0.01715	0.00511	0.00575	0.00409
50	Miscellaneous machinery, except electrical	0.00270	0.00100	0.00065	0.00043	0.00023	0.00023	0.00023	0.00023	0.00023	0.00023	0.00023	0.00023	0.00023
51	Office, computing, and accounting machines	0.00179	0.00117	0.00326	0.00312	0.00207	0.00273	0.00418	0.00451	0.00377	0.00491	0.00277	0.00509	0.00144
52	Service industry machinery	0.00030	0.00024	0.00041	0.00043	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051
53	Electric industrial equipment and apparatus	0.00133	0.00054	0.00116	0.00110	0.00086	0.00144	0.00033	0.00037	0.00047	0.00038	0.00075	0.00050	0.00047
54	Household appliances	0.00141	0.00082	0.00183	0.00186	0.00128	0.00149	0.00287	0.00232	0.00278	0.00353	0.00181	0.00171	0.00125
55	Electric lighting and wiring equipment	0.00037	0.00018	0.00036	0.00035	0.00104	0.00109	0.00051	0.00057	0.00043	0.00091	0.00093	0.00014	0.00033
56	Radio, TV, and communication equipment	0.00056	0.00042	0.00090	0.00068	0.00066	0.00080	0.00181	0.00141	0.00191	0.00213	0.00118	0.00101	0.00072
57	Electronic components and accessories	0.00061	0.00037	0.00069	0.00074	0.00094	0.00096	0.00108	0.00084	0.00079	0.00123	0.00081	0.00075	0.00101
58	Misc. electrical machinery and supplies	0.00061	0.00054	0.00059	0.00050	0.00044	0.00044	0.00044	0.00044	0.00044	0.00044	0.00044	0.00044	0.00044
59	Motor vehicles and equipment	0.00505	0.00230	0.00314	0.00345	0.00284	0.00285	0.00140	0.00738	0.00577	0.00799	0.00412	0.00412	0.00353
60	Aircraft and parts	0.00072	0.00044	0.00076	0.00086	0.00054	0.00071	0.00060	0.00060	0.00060	0.00060	0.00060	0.00060	0.00060
61	Other transportation equipment	0.00113	0.00056	0.00078	0.00090	0.00065	0.00090	0.00090	0.00090	0.00090	0.00090	0.00090	0.00090	0.00090
62	Scientific and controlling instruments	0.00074	0.00035	0.00107	0.00107	0.00060	0.00114	0.00106	0.00159	0.00159	0.001			

Table 5.—Industry-by-Commodity
 (Total requirements, direct and indirect, per dollar)

Industry number	Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand of the commodity named at the head of the column.	Commodity number												
		47	48	49	50	51	52	53	54	55	56	57	58	59
1	Livestock and livestock products.....	0.00241	0.00268	0.00267	0.00222	0.00478	0.00240	0.00292	0.00257	0.00250	0.00392	0.00347	0.00251	0.00255
2	Other agricultural products.....	0.00179	0.00210	0.00213	0.00174	0.00341	0.00198	0.00226	0.00256	0.00231	0.00292	0.00254	0.00208	0.00252
3	Forestry and fishery products.....	0.00055	0.00062	0.00051	0.00051	0.00061	0.00085	0.00084	0.00107	0.00083	0.00092	0.00058	0.00072	0.00082
4	Agricultural, forestry, and fishery services.....	0.00042	0.00053	0.00053	0.00054	0.00073	0.00056	0.00073	0.00055	0.00063	0.00066	0.00062	0.00061	0.00055
5	Iron and ferrous ores mining.....	0.00707	0.00700	0.00911	0.00678	0.00213	0.00662	0.00550	0.00084	0.00434	0.00189	0.00216	0.00401	0.00315
6	Nonferrous metal ores mining.....	0.00640	0.00793	0.00514	0.00940	0.00506	0.02161	0.01366	0.01071	0.01190	0.00071	0.00356	0.02094	0.00482
7	Coal mining.....	0.00567	0.00569	0.00702	0.00628	0.00281	0.00500	0.00541	0.00318	0.00313	0.00267	0.00331	0.00454	0.00454
8	Crude petroleum and natural gas.....	0.00985	0.01116	0.01331	0.01338	0.00667	0.01051	0.01024	0.00964	0.00911	0.00669	0.00679	0.01005	0.00924
9	Stone and clay mining and quarrying.....	0.00159	0.00139	0.00178	0.00151	0.00886	0.0131	0.01174	0.00188	0.00173	0.00084	0.00148	0.00185	0.00173
10	Chemical and fertilizer mineral mining.....	0.00064	0.00094	0.00059	0.00056	0.00049	0.01113	0.00072	0.00097	0.00094	0.00048	0.00090	0.00124	0.00082
11	New construction.....													
12	Maintenance and repair construction.....	0.01312	0.01466	0.01460	0.01357	0.01384	0.01338	0.01439	0.01503	0.01337	0.01219	0.01337	0.01443	0.01440
13	Ordnance and accessories.....	0.00019	0.00156	0.00029	0.00160	0.00121	0.00045	0.00033	0.00037	0.00028	0.00107	0.00057	0.00037	0.00156
14	Food and kindred products.....	0.00663	0.00736	0.00708	0.00591	0.01328	0.00714	0.00797	0.00078	0.00700	0.01077	0.00956	0.00833	0.00748
15	Tobacco manufactures.....	0.00027	0.00028	0.00023	0.00019	0.00043	0.00023	0.00029	0.00023	0.00026	0.00033	0.00032	0.00026	0.00014
16	Broad and narrow fabrics, yarn and thread mills.....	0.00205	0.00239	0.00300	0.00311	0.00293	0.00313	0.00278	0.01008	0.00710	0.00427	0.00329	0.00399	0.01336
17	Miscellaneous textile goods and floor coverings.....	0.00094	0.00150	0.00594	0.00335	0.00195	0.00151	0.00455	0.00157	0.00429	0.00167	0.00174	0.00257	0.00874
18	Apparel.....	0.00145	0.00112	0.00142	0.00209	0.01200	0.00139	0.00175	0.00136	0.00158	0.00191	0.00201	0.00245	0.00292
19	Miscellaneous fabricated textile products.....	0.00063	0.00039	0.00045	0.00046	0.00048	0.00052	0.00052	0.00044	0.00056	0.00058	0.00054	0.00058	0.00055
20	Lumber and wood products, except containers.....	0.00595	0.01240	0.00556	0.00534	0.00522	0.01026	0.00661	0.01303	0.00987	0.01009	0.00563	0.00828	0.01021
21	Wood containers.....	0.00083	0.00064	0.00094	0.00040	0.00022	0.00181	0.00113	0.00183	0.00036	0.00117	0.00033	0.00039	0.00077
22	Household furniture.....	0.00607	0.00912	0.00666	0.00007	0.00846	0.00019	0.00019	0.00020	0.00047	0.00039	0.00030	0.00016	0.00056
23	Other furniture and fixtures.....	0.00054	0.00021	0.00059	0.00030	0.00062	0.00116	0.00034	0.00078	0.00077	0.00023	0.00019	0.00019	0.00037
24	Paper and allied products, except containers.....	0.00684	0.00780	0.01073	0.00694	0.02882	0.01396	0.01491	0.01069	0.01316	0.01449	0.00959	0.01265	0.01178
25	Paperboard containers and boxes.....	0.00346	0.00488	0.00624	0.01020	0.00807	0.01196	0.00790	0.01210	0.00767	0.00767	0.00957	0.01055	0.00715
26	Printing and publishing.....	0.00062	0.01114	0.01070	0.00974	0.01639	0.01238	0.01234	0.01538	0.01159	0.02005	0.01330	0.01527	0.01260
27	Chemicals and selected chemical products.....	0.01442	0.03104	0.01442	0.01516	0.01648	0.02229	0.02343	0.00764	0.03083	0.01661	0.01188	0.04505	0.03372
28	Plastics and synthetic materials.....	0.00519	0.00831	0.00572	0.00438	0.00843	0.00824	0.01093	0.01440	0.01759	0.01019	0.01323	0.01428	0.01412
29	Drugs, cleaning and toilet preparations.....	0.00112	0.00119	0.00093	0.00113	0.00117	0.00145	0.00132	0.00245	0.00145	0.00121	0.00141	0.00118	0.00151
30	Paints and allied products.....	0.00201	0.00226	0.00156	0.00182	0.00250	0.00496	0.00445	0.00388	0.00431	0.00201	0.00161	0.00222	0.00560
31	Petroleum refining and related industries.....	0.01473	0.01707	0.01697	0.02104	0.00999	0.01560	0.01483	0.01358	0.01273	0.00941	0.01238	0.01413	0.01312
32	Rubber and miscellaneous plastics products.....	0.02009	0.02297	0.01463	0.01168	0.02855	0.02769	0.01943	0.04782	0.03062	0.02016	0.03282	0.04271	0.04565
33	Leather tanning and finishing.....	0.00337	0.00339	0.00293	0.00292	0.00347	0.00076	0.00708	0.00006	0.00067	0.00011	0.00006	0.00005	0.00019
34	Footwear and other leather products.....	0.00012	0.00020	0.00012	0.00013	0.00028	0.00017	0.00028	0.00017	0.00017	0.00017	0.00017	0.00017	0.00017
35	Glass and glass products.....	0.00111	0.00300	0.00107	0.00094	0.00549	0.00233	0.00261	0.00894	0.00384	0.00035	0.00268	0.00284	0.01579
36	Stone and clay products.....	0.01335	0.00724	0.01305	0.01089	0.00457	0.00983	0.01483	0.01334	0.01203	0.00485	0.01918	0.00845	0.01067
37	Primary iron and steel manufacturing.....	0.15809	0.15012	0.19682	0.14640	0.04712	0.14125	0.11393	0.14573	0.10742	0.03992	0.04504	0.07235	0.17015
38	Primary nonferrous metals manufacturing.....	0.00337	0.00339	0.00293	0.00292	0.00347	0.00076	0.00708	0.00006	0.00067	0.00011	0.00006	0.00005	0.00019
39	Metal containers.....	0.00138	0.00113	0.00093	0.00083	0.00107	0.00127	0.00116	0.00177	0.00164	0.00068	0.00111	0.00123	0.00150
40	Heating, plumbing, and structural metal products.....	0.00818	0.02023	0.01967	0.00407	0.07557	0.01910	0.00680	0.01106	0.00263	0.00273	0.00175	0.00184	0.00374
41	Screw machine products and stampings.....	0.04847	0.01653	0.01812	0.02066	0.02453	0.00881	0.02265	0.00882	0.00379	0.02436	0.02058	0.01921	0.00677
42	Other fabricated metal products.....	0.02498	0.02626	0.02519	0.03061	0.02905	0.03601	0.01817	0.02735	0.02244	0.02068	0.02483	0.02325	0.02129
43	Engines and turbines.....	0.00174	0.01101	0.01132	0.00348	0.01147	0.00871	0.01932	0.00239	0.00150	0.00082	0.00081	0.00161	0.01094
44	Farm and garden machinery.....	0.00027	0.00027	0.00028	0.00031	0.00042	0.00174	0.00074	0.00100	0.00214	0.00041	0.00041	0.00041	0.00121
45	Construction and mining machinery.....	0.00243	0.00346	0.01034	0.00270	0.01028	0.00361	0.00393	0.01172	0.00130	0.00072	0.00060	0.00148	0.00411
46	Materials handling machinery and equipment.....	0.00163	0.00340	0.00340	0.00157	0.00065	0.00135	0.00087	0.00056	0.00044	0.00070	0.00060	0.00032	0.00114
47	Metalworking machinery and equipment.....	0.00607	0.00265	0.00232	0.00301	0.00694	0.00988	0.01188	0.01039	0.00990	0.00702	0.00701	0.01167	0.00204
48	Special industry machinery and equipment.....	0.01208	0.00340	0.01259	0.00387	0.00241	0.00617	0.00213	0.00284	0.0136	0.00157	0.00148	0.00136	0.00204
49	General industrial machinery and equipment.....	0.02842	0.00716	0.00764	0.02005	0.00588	0.03758	0.01531	0.02116	0.01303	0.00330	0.00395	0.01333	0.01311
50	Miscellaneous machinery, except electrical.....	0.00062	0.00362	0.01712	0.00756	0.00673	0.00638	0.01013	0.00294	0.00441	0.00065	0.00062	0.00779	0.01938
51	Office, computing, and accounting machines.....	0.00063	0.00655	0.00087	0.00321	0.07010	0.00110	0.00439	0.00101	0.00109	0.01341	0.01518	0.00129	0.01544
52	Service industry machines.....	0.00293	0.00356	0.01309	0.00302	0.01551	0.00841	0.00112	0.00272	0.00421	0.00107	0.00095	0.01211	0.01559
53	Electrical industrial equipment and apparatus.....	0.00240	0.00306	0.00474	0.01276	0.00648	0.00990	0.00824	0.00789	0.00426	0.01974	0.00276	0.01064	0.00844
54	Household appliances.....	0.00035	0.00103	0.00094	0.00041	0.00051	0.00073	0.00122	0.01058	0.00078	0.00178	0.00032	0.00185	0.00190
55	Electric lighting and wiring equipment.....	0.00460	0.00755	0.00284	0.00386	0.00734	0.00900	0.02339	0.01635	0.00667	0.01583	0.00683	0.01687	0.00993
56	Radio, TV, and communication equipment.....	0.00135	0.00100	0.00180	0.00122	0.01985	0.00438	0.01750	0.00365	0.01102	0.04589	0.04255	0.00515	0.00884
57	Electronic components and accessories.....	0.00256	0.01399	0.00415	0.00161	0.17045	0.00362	0.04402	0.00434	0.00033	0.20109	0.03600	0.02124	0.00471
58	Misc. electrical machinery and supplies.....	0.00188	0.00207	0.00209	0.00200	0.00213	0.00345	0.01437	0.00540	0.00077	0.00460	0.00782	0.00772	0.00656
59	Motor vehicles and equipment.....	0.01618	0.00936	0.01183	0.01471	0.00628	0.01501	0.01561	0.01262	0.01651	0.00735	0.01069	0.02669	0.27679
60	Aircraft and parts.....	0.00230	0.00909	0.01443	0.00300	0.01096	0.00407	0.00428	0.00148	0.00077	0.00094	0.00067	0.00109	0.00272
61	Other transportation equipment.....	0.00091	0.00219	0.00184	0.00091	0.00067	0.01172	0.00789	0.00141	0.00099	0.00084	0.00072	0.00091	0.00250
62	Scientific and controlling instruments.....	0.00021	0.00256	0.00071	0.00188	0.00805	0.01602	0.01140	0.0027					

Total Requirements, 1972-Continued

(of delivery to final demand, at producers' prices)

	Aircraft and parts	Other transportation equipment	Scientific and controlling instruments	Optical, ophthalmic, and photographic equipment	Miscellaneous manufacturing	Transportation and warehousing	Communications except radio and TV	Radio and TV broadcasting	Electric, gas, water, and sanitary services	Wholesale and retail trade	Finance and insurance	Real estate and rental	Hotels, personal and repair services exc. auto	Business services	Eating and drinking places	Automobile repair and services	Amusements	Medical, educ. services and nonprofit org.	Federal Government enterprises	State and local government enterprises	Industry number
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	
0.0025	0.00674	0.00326	0.00434	0.00272	0.00504	0.00319	0.00184	0.00455	0.00178	0.00253	0.00434	0.00138	0.00334	0.00330	0.14071	0.00182	0.01948	0.01075	0.00105	0.00290	1
0.0028	0.00421	0.00748	0.00230	0.00739	0.00363	0.00363	0.00135	0.00978	0.00153	0.00177	0.00286	0.00185	0.00384	0.00288	0.00306	0.00175	0.04395	0.00629	0.00100	0.00274	2
0.0032	0.00702	0.00105	0.00949	0.00429	0.00044	0.00044	0.00921	0.00018	0.00039	0.00030	0.00442	0.00224	0.00062	0.00065	0.00836	0.00645	0.00051	0.00056	0.00014	0.00098	3
0.0035	0.00683	0.00066	0.00448	0.00024	0.00045	0.00045	0.00272	0.00223	0.00214	0.00084	0.00058	0.00344	0.00126	0.00073	0.00071	0.00049	0.00073	0.00167	0.00023	0.00020	4
0.0038	0.00281	0.00735	0.00275	0.00176	0.00287	0.00065	0.00015	0.00069	0.00050	0.00014	0.00013	0.00015	0.00026	0.00037	0.00051	0.00058	0.00023	0.00025	0.00015	0.00072	5
0.0042	0.00800	0.00686	0.00636	0.00606	0.01069	0.00076	0.00039	0.00016	0.00061	0.00021	0.00023	0.00023	0.00106	0.00065	0.00066	0.00273	0.00041	0.00047	0.00021	0.00123	6
0.0045	0.00327	0.00544	0.00239	0.00250	0.00434	0.00167	0.00074	0.00052	0.00082	0.00033	0.00033	0.00123	0.00284	0.00145	0.00233	0.00213	0.00135	0.00233	0.00112	0.00303	7
0.0048	0.00315	0.00068	0.00903	0.00916	0.01265	0.0027	0.00260	0.00229	0.00229	0.00033	0.00374	0.00420	0.00234	0.00071	0.00864	0.00904	0.00667	0.00820	0.00041	0.0014	8
0.0051	0.00679	0.00182	0.00114	0.00125	0.00273	0.00101	0.00051	0.00026	0.00138	0.00033	0.00033	0.00093	0.00091	0.00060	0.00090	0.00141	0.00067	0.00062	0.00026	0.00140	9
0.0054	0.00040	0.00078	0.00062	0.00148	0.00116	0.00024	0.00007	0.00010	0.00039	0.00010	0.00011	0.00009	0.00043	0.00033	0.00036	0.00046	0.00033	0.00032	0.00009	0.00124	10
0.0057	0.01335	0.01423	0.01273	0.01408	0.01684	0.01667	0.01428	0.01310	0.01236	0.01288	0.01321	0.01284	0.01254	0.01144	0.01177	0.01046	0.01044	0.01231	0.01030	0.01105	11
0.0060	0.01069	0.00536	0.00239	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	0.00228	12
0.0063	0.01596	0.00744	0.01162	0.00763	0.01275	0.00853	0.00826	0.00744	0.00736	0.00746	0.00738	0.00735	0.00735	0.00735	0.00735	0.00735	0.00735	0.00735	0.00735	0.00735	13
0.0066	0.00657	0.00021	0.00650	0.00020	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	0.00029	14
0.0069	0.00398	0.01310	0.01671	0.00506	0.03322	0.00241	0.00071	0.00070	0.00120	0.00111	0.00135	0.00045	0.01697	0.00294	0.00228	0.00076	0.00228	0.00044	0.00254	0.00232	15
0.0072	0.00143	0.01832	0.00854	0.00210	0.01079	0.00153	0.00039	0.00047	0.00055	0.00053	0.00053	0.00053	0.00053	0.00053	0.00053	0.00053	0.00053	0.00053	0.00053	0.00053	16
0.0075	0.00171	0.00631	0.00235	0.00101	0.00415	0.00173	0.00087	0.00133	0.00107	0.00060	0.00045	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	0.00107	17
0.0078	0.00047	0.00398	0.00132	0.00044	0.00073	0.00044	0.00073	0.00044	0.00073	0.00044	0.00073	0.00044	0.00073	0.00044	0.00073	0.00044	0.00073	0.00044	0.00073	0.00044	18
0.0081	0.00497	0.00592	0.01223	0.00777	0.00586	0.00402	0.00200	0.00131	0.00430	0.00233	0.00271	0.00270	0.00632	0.00683	0.00449	0.00487	0.00274	0.00312	0.00130	0.01124	19
0.0084	0.00076	0.00032	0.00029	0.00015	0.00011	0.00007	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	20
0.0087	0.00117	0.01054	0.00154	0.00019	0.00210	0.00118	0.00040	0.00003	0.00006	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	21
0.0090	0.00198	0.00369	0.00118	0.00058	0.00128	0.00117	0.00065	0.00093	0.00011	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	22
0.0093	0.00028	0.01111	0.00397	0.00448	0.00164	0.00076	0.00413	0.00482	0.00564	0.01128	0.00505	0.00230	0.00444	0.00383	0.02158	0.00846	0.00043	0.01048	0.00438	0.00448	23
0.0096	0.00411	0.00539	0.01126	0.01373	0.00865	0.00195	0.00074	0.00068	0.00113	0.00267	0.00139	0.00037	0.00377	0.00301	0.01671	0.00378	0.00190	0.00320	0.00194	0.00197	24
0.0099	0.01689	0.01207	0.01647	0.01467	0.01274	0.01419	0.01136	0.01566	0.01064	0.01507	0.00287	0.00223	0.01917	0.01892	0.01667	0.01100	0.02210	0.02393	0.01245	0.01321	25
0.0102	0.01284	0.02278	0.02112	0.00310	0.04261	0.00807	0.00236	0.00336	0.01169	0.00333	0.00830	0.00293	0.01559	0.01176	0.01618	0.01318	0.01050	0.01188	0.00306	0.00797	26
0.0105	0.00687	0.01433	0.01690	0.01017	0.04034	0.00291	0.00089	0.00075	0.00177	0.00128	0.00127	0.00293	0.00226	0.00323	0.00328	0.00149	0.00320	0.00130	0.00308	0.00308	27
0.0108	0.00129	0.00183	0.02117	0.00194	0.00476	0.00168	0.00333	0.00048	0.00108	0.00104	0.00058	0.00029	0.00349	0.00348	0.00337	0.00310	0.00328	0.00173	0.00270	0.0014	28
0.0111	0.00298	0.01000	0.00245	0.00135	0.00957	0.00309	0.00113	0.00050	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	0.00059	29
0.0114	0.01193	0.01598	0.01347	0.01415	0.01097	0.00661	0.00341	0.00337	0.04210	0.01115	0.00644	0.00674	0.01854	0.01112	0.01160	0.01574	0.00938	0.01116	0.00985	0.00851	30
0.0117	0.01155	0.02722	0.03157	0.02303	0.00138	0.01064	0.00209	0.00189	0.00462	0.00431	0.00332	0.00293	0.01694	0.00859	0.01129	0.02392	0.00462	0.01116	0.00374	0.00097	31
0.0120	0.00009	0.00012	0.00021	0.00006	0.00279	0.00004	0.00003	0.00015	0.00003	0.00004	0.00006	0.00001	0.00108	0.00008	0.00006	0.00006	0.00006	0.00006	0.00006	0.00006	32
0.0123	0.00034	0.00016	0.00053	0.00018	0.00434	0.00010	0.00069	0.00075	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	33
0.0126	0.00246	0.00608	0.00360	0.00672	0.00262	0.00123	0.00032	0.00031	0.00070	0.00078	0.00069	0.00069	0.00069	0.00069	0.00069	0.00069	0.00069	0.00069	0.00069	0.00069	34
0.0129	0.00432	0.01274	0.00593	0.00290	0.01101	0.00315	0.01600	0.00075	0.00416	0.01002	0.00100	0.00274	0.00517	0.00270	0.00310	0.01176	0.00011	0.00194	0.00084	0.01220	35
0.0132	0.00005	0.01610	0.00515	0.00352	0.00949	0.00300	0.00101	0.00172	0.00959	0.00288	0.00260	0.00212	0.01096	0.00749	0.01034	0.00416	0.00451	0.00500	0.00384	0.00384	36
0.0135	0.00888	0.00970	0.00884	0.00648	0.01278	0.00721	0.00405	0.00140	0.00233	0.00187	0.00205	0.00205	0.00205	0.00205	0.00205	0.00205	0.00205	0.00205	0.00205	0.00205	37
0.0138	0.00120	0.00161	0.00159	0.00132	0.00213	0.00095	0.00025	0.00027	0.00082	0.00043	0.00039	0.00030	0.00111	0.00080	0.00138	0.00108	0.00087	0.00137	0.00033	0.00133	38
0.0141	0.00201	0.00418	0.00411	0.00114	0.00218	0.00206	0.00108	0.00045	0.00082	0.00048	0.00048	0.00036	0.00126	0.00078	0.00080	0.00080	0.00080	0.00080	0.00080	0.00080	39
0.0144	0.01058	0.01877	0.02708	0.00949	0.01671	0.00318	0.01004	0.00354	0.00291	0.00109	0.00091	0.00057	0.00462	0.00310	0.00302	0.03814	0.00116	0.00171	0.00145	0.00214	40
0.0147	0.00204	0.03172	0.03189	0.00976	0.02340	0.00503	0.00139	0.00085	0.00065	0.00145	0.00129	0.00135	0.00831	0.00447	0.00140						