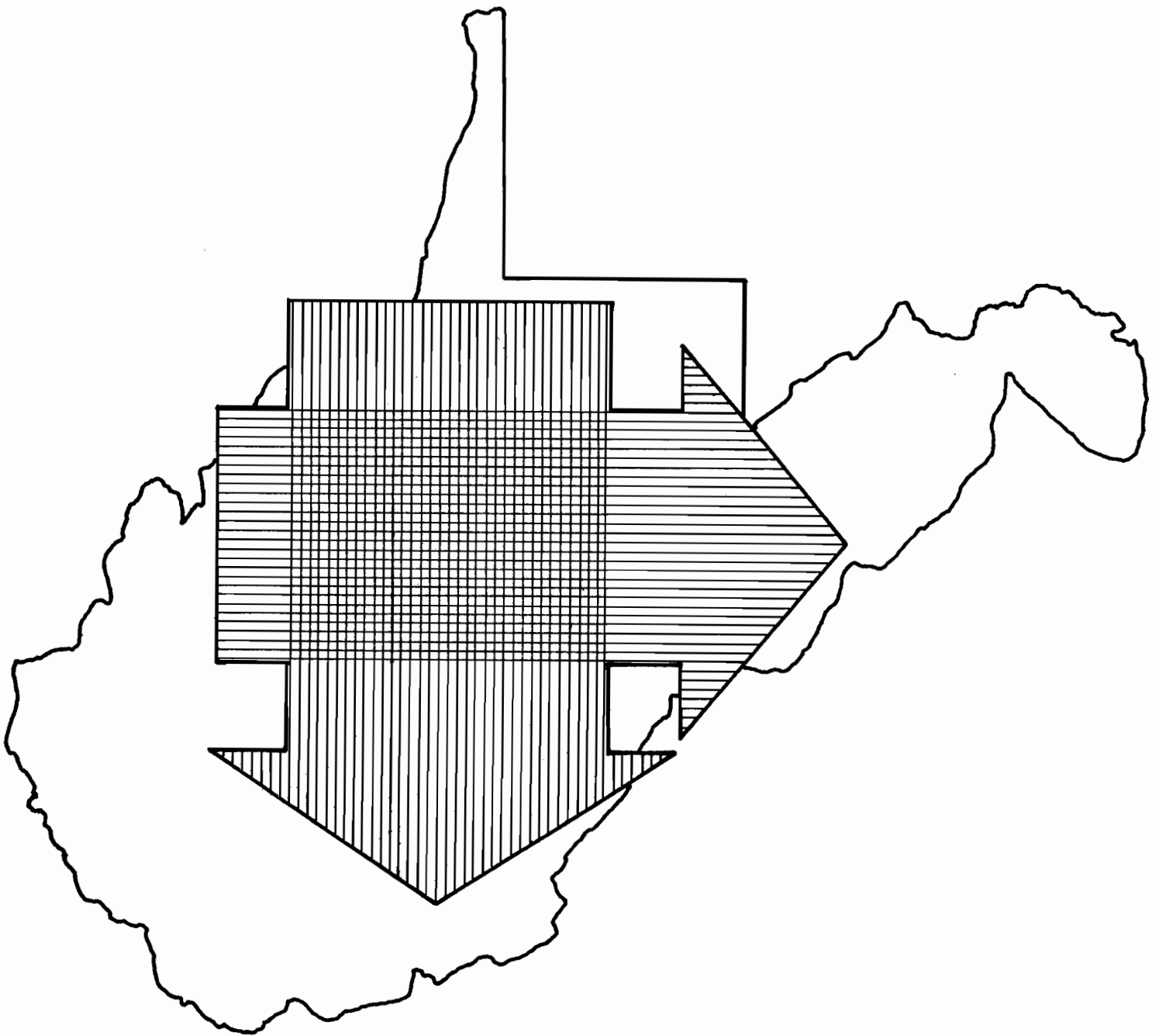


THE 1975 WEST VIRGINIA INPUT-OUTPUT STUDY

Modeling A Regional Economy



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

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

I

It has been ten years since the original 1965 West Virginia input-output tables were constructed.¹ 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-

¹The 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).

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 acknowledgements section of this report.

II

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

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-

⁴Miemyk, 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.

pondents account for about 50 percent of West Virginia's total output. Tests were conducted on the data obtained from the 1975 mail survey to determine whether the responding establishments are representative of the total population. We also compared the characteristics of the respondents and the non-respondents who had originally agreed to participate.

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.

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.⁸

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. The results were disappointing because of data deficiencies.

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

⁸The 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.

⁹Cf. *Simulating Regional Economic Development*, pp. 10-15.

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

TABLE 1

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

TABLE 2

Sector	Establishments		
	Total	Respondents	% of Total
2. Coal mining, underground	515	15	2.9
3. Coal mining, strip			
9. Food & kindred products, n.e.c.	34	5	14.7
10. Food & kindred products, dairies	13	1	8.0
11. Food & kindred products, bakeries	17	0	0.0
12. Food & kindred products, beverages	35	3	8.6
13. Apparel & accessories	46	4	8.7
14. Logging & sawmills	164	8	4.9
15. Furniture & other wood fabrication	82	11	13.4
16. Printing & publishing	105	17	16.2
17. Chemicals	54	16	29.6
18. Petroleum	16	5	31.3
19. Glass	40	15	37.5
20. Stone & clay products	88	11	12.5
21. Primary metal products	38	14	36.8
22. Fabricated metal products	85	13	15.3
23. Machinery, except electrical	131	7	5.3
24. Electrical machinery & apparatus	23	8	34.8
25. Transportation equipment	21	3	14.3
26. Instruments & related products	13	2	15.4
27. All other manufacturing	97	11	11.3
TOTAL	1,617	169	10.5

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 .93. 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 discriminate 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 ₆	2.41720
S ₅	2.04543
S ₃	1.99721
S ₆	1.86757
S ₁	1.48709
S ₇	1.28483
S ₁	1.15964
S ₂	0.84718
Employment	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.³⁰

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 McGuarr have pointed out, an orderly procedure is essential.³¹ 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.

³⁰On 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.

³¹R. C. Jensen and D. McGuarr, "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.

ginia, 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.¹⁵

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, indirect, and *induced* income effects of an additional dollar's worth of sales by each sector to final consumers.¹⁶ Output multipliers provide an estimate of 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

consumption function is linear and homogeneous.¹⁷ This assumption is realized when households are treated as another productive activity. The shortcut method was used to calculate the multipliers in Table 5. The multipliers were also calculated by the conventional method of treating households as a processing sector. They are the same as those in Table 5.

TABLE 5
OUTPUT AND INCOME MULTIPLIERS,
WEST VIRGINIA, 1975

	Out- put	Type I	Type II
1. Agriculture	1.44	1.65	2.07
2. Coal mines (underground)	1.16	1.14	1.43
3. Coal mines (strip and auger)	1.86	2.16	2.71
4. Petroleum and natural gas	1.40	1.38	1.73
5. All other mining	1.30	1.38	1.73
6. Building contractors	1.72	1.73	2.17
7. Non-building contractors	1.51	1.42	1.78
8. Special contractors	1.34	1.19	1.50
9. Food products (n.e.c.)	1.50	2.21	2.78
10. Food products (dairies)	1.52	1.52	1.19
11. Food products (bakeries)	1.24	1.42	1.79
12. Food products (beverages)	1.19	1.28	1.61
13. Apparel and accessories	1.13	1.09	1.37
14. Logging and sawmills	1.46	1.38	1.73
15. Furniture and wood fabrication	1.30	1.69	2.11
16. Printing and publishing	1.52	1.59	1.99
17. Chemicals	1.31	1.40	1.75
18. Petroleum products	1.50	2.08	2.60
19. Glass	1.25	1.18	1.48
20. Stone and clay products	1.37	1.36	1.70
21. Primary metals	1.10	1.11	1.40
22. Fabricated metals	1.21	1.24	1.55
23. Machinery (except electric)	1.17	1.11	1.39
24. Electric machinery	1.32	1.42	1.78
25. Transportation equipment	1.18	1.19	1.50
26. Instruments and products	1.04	1.11	1.39
27. All other manufacturing	1.19	1.35	1.69
28. Restaurants and bars	1.34	1.37	1.72
29. Wholesale trade	1.18	1.09	1.36
30. Retail food stores	1.31	1.31	1.64
31. Auto service stations	1.18	1.16	1.45
32. All other retail	1.28	1.17	1.46
33. Banking	1.17	1.19	1.49
34. Other finance	1.27	1.42	1.78
35. Insurance agents	1.52	1.31	1.64
36. Real estate	1.45	1.67	2.10
37. All other FIRE	1.57	2.77	3.47
38. Hotels and lodgings	1.52	1.43	1.79
39. Medical and legal services	1.19	1.15	1.44
40. Educational services	1.22	1.17	1.47
41. All other services	1.23	1.20	1.51
42. Railroads	1.11	1.11	1.39
43. Trucking and warehousing	1.17	1.23	1.55
44. All other transportation	1.25	1.29	1.62
45. Communications	1.14	1.10	1.38
46. Electrical systems	1.43	1.60	2.01
47. Gas systems	1.18	1.39	1.75
48. Water and sanitary services	1.43	1.55	1.94

¹⁵Simulating Regional Economic Development, pp. 193-198.

¹⁶Illustrative calculations of both types are given in William H. Miernyk, *The Elements of Input-Output Analysis* (New York: Random House, 1965): 47.

¹⁷The method and its justification are described in I. E. Bradley and J. P. Gander, "Input-Output Multipliers: Some Theoretical Comments," *Journal of Regional Science*, 9 (1969): 309-317.

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 STRIP&PAU	PERFOR & NAT GAS	ALL OTHER MINING	GEN COMT BLDG	GEN COMT NON-BLDG	SP TRADE CONTR'S
1. AGRICULTURE (UNDERGROUND)	17881	0	0	0	416	0	0	0
2. COAL MINING (STRIP + AUGER)	516	21601	88275	0	0	303	0	218
3. PETROLEUM + NATURAL GAS	0	65032	115522	0	10	4	0	7
4. ALL OTHER CONTRACTORS (BUILDING)	3125	1430	61	5282	4240	2	6602	1364
5. GENERAL CONTRACTORS (NON-BUILDING)	635	743	0	62	0	2339	8088	0
6. SPECIAL TRADES CONTRACTORS (DAIRIES)	1146	114	0	0	0	5687	67	727
7. FOOD + KINDRED PRODUCTS (BAKERIES)	1391	3805	215	346	4842	54699	14340	7335
8. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	0	0	0	12268	0
9. FOOD + KINDRED PRODUCTS (DAIRIES)	0	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	0	0	0	0	0	0	0
13. LOGGING + SAWMILLS	780	28610	491	0	654	948	643	4508
14. FURNITURE + OTHER WOOD FABRICATION	344	600	17	15	141	1136	359	8
15. PRINTING + PUBLISHING	10	2174	17	356	374	440	279	450
16. CHEMICALS	672	0	74	0	1140	0	331	86
17. PETROLEUM	0	4291	0	10	562	462	331	1172
18. GLASS	0	0	0	0	0	0	47979	1495
19. STONE + CLAY PRODUCTS	1954	14562	2523	0	86	25433	19255	2337
20. PRIMARY METAL PRODUCTS	50	2002	30	0	956	4090	4762	3765
21. FABRICATED METAL PRODUCTS	469	21401	237	686	426	5887	1075	15672
22. MACHINERY (EXCEPT ELECTRICAL)	0	1888	1189	0	0	193	7494	608
23. ELECTRICAL MACHINERY + APPARATUS	0	0	122	0	33	259	51	231
24. TRANSPORTATION EQUIPMENT	10	57	153	0	0	17	3	2
25. INSTRUMENTS + RELATED PRODUCTS	0	314	0	914	447	3931	747	6431
26. ALL OTHER MANUFACTURING	158	457	149	55	0	259	71	163
27. EATING + DRINKING ESTABLISHMENTS	8947	10214	9225	0	3218	2210	2519	3314
28. WHOLESALE TRADE	0	0	0	3069	0	0	0	0
29. RETAIL FOOD STORES	1942	0	351	906	98	0	179	2115
30. RETAIL GASOLINE SERVICE STATIONS	357	10271	811	1229	229	156	647	147
31. ALL OTHER RETAIL	3851	0	5718	448	526	804	1631	3248
32. BANKING	847	0	1698	354	49	154	0	179
33. INSURANCE AGENTS + BROKERS	1539	25492	4476	8885	1466	1264	10473	4642
34. REAL ESTATE	154	8812	0	380	27	951	76	2408
35. ALL OTHER FINANCE	0	0	0	70	91	56	0	640
36. REAL ESTATE	1865	11930	11358	1751	173	926	199	2653
37. ALL OTHER FINANCE	4645	1945	2326	3115	366	100	1147	0
38. HOTELS + OTHER LODGING PLACES	2623	11129	3660	527	1792	127	9761	2268
39. MEDICAL + LEGAL SERVICES	634	10528	4	252	5	68	1023	526
40. EDUCATIONAL SERVICES	319	4549	1422	371	114	691	1283	284
41. ALL OTHER SERVICES	781	41743	732	485	318	308	315	424
42. RAILROADS	184	57	39	132	0	506	3031	1372
43. TRUCKING + WAREHOUSING	6	85	52	66	3	5929	31	142
44. COMMUNICATIONS + SYSTEMS	0	0	0	0	0	0	0	0
45. ELECTRIC COMPANIES + SYSTEMS	0	0	0	0	0	0	0	0
46. GAS COMPANIES AND SERVICES	0	0	0	0	0	0	0	0
47. WATER + SANITARY SERVICES	0	0	0	0	0	0	0	0
48. HOUSEHOLDS	38408	972974	94942	30279	29651	94285	138420	147271
49. ALL OTHER FINAL PAYMENTS	51863	981614	53304	9788	38126	13572	36538	22001
50. IMPORTS	24118	591332	37898	22595	10075	7208	74224	23788
51. TOTAL FINAL PAYMENTS	114389	2545920	186144	92459	77852	115065	249182	193060
52. TOTAL FINAL PAYMENTS	173740	2861100	438900	92459	101839	244509	399897	263493
53. TOTAL GROSS OUTLAY								

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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	0	0	0	0	0	0	0
2.	COAL MINING (UNDERGROUND)	34610	0	137	37922	0	18	0
3.	COAL MINING (STRIP + AUGER)	297	0	2165	76	200	0	0
4.	PETROLEUM + NATURAL GAS	13037	0	0	0	0	0	0
5.	ALL OTHER MINING	1971	10672	0	6774	67	0	0
6.	GENERAL CONTRACTORS (BUILDING)	502	0	10384	669	48	18	0
7.	GENERAL CONTRACTORS (NON-BUILDING)	1004	11	0	167	2835	0	2
8.	SPECIAL TRADES CONTRACTORS	15901	0	206	867	96	44	0
9.	FOOD + KINDRED PROD·MEATS + N.E.C.	353	0	0	0	0	0	0
10.	FOOD + KINDRED PRODUCTS (DAIRIES)	0	0	0	0	0	0	0
11.	FOOD + KINDRED PRODUCTS (BAKERIES)	0	0	0	0	0	0	0
12.	FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	0	0	0	0
13.	APPAREL + ACCESSORIES	37	0	87	0	0	0	0
14.	LOGGING + SAWMILLS	0	57	0	0	0	0	0
15.	FURNITURE + OTHER WOOD FABRICATION	0	1	6	0	3	7	221
16.	PRINTING + PUBLISHING	1487	80	1065	152	413	661	221
17.	CHEMICALS	225444	5646	895	6576	501	0	253
18.	PETROLEUM	3849	3532	10197	137	0	0	4298
19.	GLASS	1487	0	0	0	0	0	0
20.	STONE + CLAY PRODUCTS	1636	3497	5404	0	0	0	0
21.	PRIMARY METAL PRODUCTS	167	0	0	3836	0	0	33124
22.	FABRICATED METAL PRODUCTS	4742	871	756	1431	236	8925	23
23.	MACHINERY (EXCEPT ELECTRICAL)	167	0	113	1933	436	3954	916
24.	ELECTRICAL MACHINERY + APPARATUS	1432	0	98	162	9	2119	471
25.	TRANSPORTATION EQUIPMENT	5932	0	0	124	25	0	471
26.	INSTRUMENTS + RELATED PRODUCTS	0	0	0	0	0	0	559
27.	ALL OTHER MANUFACTURING	16477	58	12619	6394	1422	0	154
28.	EATING + DRINKING ESTABLISHMENTS	464	35	0	45	93	29	66
29.	WHOLESALE TRADE	11921	2740	4964	6820	3924	1524	996
30.	RETAIL FOOD STORES	0	0	0	0	0	0	45
31.	RETAIL GASOLINE SERVICE STATIONS	0	22	0	0	0	92	45
32.	ALL OTHER RETAIL	3886	279	750	4536	927	332	976
33.	BANKING	929	405	1427	1689	139	743	240
34.	INSURANCE AGENTS + BROKERS	6713	110	6176	2237	236	0	0
35.	REAL ESTATE	0	0	0	0	501	2013	1794
36.	REAL ESTATE	0	0	0	0	1322	451	451
37.	ALL OTHER FIN + INSUR + REAL ESTATE	4779	17	0	1461	824	0	8
38.	HOTELS + OTHER LODGING PLACES	650	36	60	91	38	46	150
39.	MEDICAL + LEGAL SERVICES	3273	258	196	2283	126	120	682
40.	EDUCATIONAL SERVICES	0	0	0	274	0	0	191
41.	ALL OTHER SERVICES	6490	476	4036	6434	1419	626	1886
42.	RAILROADS	14618	102	82	984	77	1018	193
43.	TRUCKING + WAREHOUSING	13985	5481	1370	8658	908	1243	531
44.	ALL OTHER TRANSPORTATION	7309	1940	63	943	229	743	858
45.	COMMUNICATIONS	8145	4176	994	1065	827	974	1277
46.	ELECTRIC COMPANIES + SYSTEMS	14996	1051	3682	10047	3187	754	5105
47.	GAS COMPANIES AND SYSTEMS	24121	2787	10191	5267	3443	29	2771
48.	WATER + SANITARY SERVICES	3682	49	123	144	400	0	808
49.	HOUSEHOLDS	388121	21104	126918	80163	439471	83831	47490
50.	ALL OTHER FINAL PAYMENTS	673786	49518	68524	62062	804664	47635	83032
51.	IMPORTS	341477	18876	56785	41622	150184	28388	25553
52.	TOTAL FINAL PAYMENTS	1403384	89498	252227	183847	1394319	159854	156075
53.	TOTAL GROSS OUTLAY	1859800	147000	316600	258700	1522400	185900	215150

TABLE I (CONTINUED)

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

	25	26	27	28	29	30	31	32
	TRANSPOT EQUIPM	INSTRUC'S EPRODUCT	ALL OTHER MANUP	EATING & DR'NG 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 + ADGER)	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)	5	0	524	0	0	0	0	651
7. GENERAL CONTRACTORS (NON-BUILDING)	0	0	5776	21	0	816	0	160
8. SPECIAL TRADES CONTRACTORS + N.E.C.	0	0	2517	0	678	0	0	5635
9. FOOD + KINDRED PRODUCTS	0	0	0	10135	0	0	0	0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0	0	0	7075	0	17	0	546
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0	0	0	8020	0	0	0	538
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	5010	0	0	0	506
13. APPAREL + ACCESSORIES	0	0	0	16	0	0	0	0
14. LOGGING + SAWMILLS	13	22	7	0	0	0	0	0
15. FURNITURE + OTHER WOOD FABRICATION	15	1	12	129	83	101	15	1045
16. PRINTING + PUBLISHING	78	53	546	225	393	12659	504	24142
17. CHEMICALS	5	0	1369	0	830	0	0	0
18. PETROLEUM	0	0	179	0	93	63	3599	0
19. GLASS	0	0	184	211	0	0	0	7733
20. STONE + CLAY PRODUCTS	0	0	81	0	0	0	0	56
21. PRIMARY METAL PRODUCTS	15426	0	14	18	476	1730	24	900
22. FABRICATED METAL PRODUCTS	93	0	7415	0	963	14	13	506
23. MACHINERY (EXCEPT ELECTRICAL)	0	0	2276	0	7678	2438	1813	1985
24. ELECTRICAL MACHINERY + APPARATUS	1991	0	519	9	34	0	0	80
25. TRANSPORTATION EQUIPMENT	15	0	98	0	98	0	9	40
26. INSTRUMENTS + RELATED PRODUCTS	0	80	0	0	0	0	0	80
27. ALL OTHER MANUFACTURING	0	247	1564	1	476	1730	24	900
28. BATING + DRINKING ESTABLISHMENTS	0	0	421	1877	963	14	13	506
29. WHOLESALE TRADE	313	0	4	12657	7678	2438	1813	1985
30. RETAIL FOOD STORES	0	0	0	935	4311	767	271	3143
31. ALL OTHER RETAIL	38	6	142	242	933	119	249	6511
32. RETAIL GASOLINE SERVICE STATIONS	145	0	61	676	1848	711	596	8232
33. BANKING	217	284	588	157	3273	353	152	2686
34. INSURANCE AGENTS + BROKERS	447	0	475	157	5721	6139	1558	8521
35. REAL ESTATE	0	130	330	145	14	21956	321	1045
36. ALL OTHER FIN	0	0	0	0	1086	0	9	1045
37. HOTELS + OTHER LODGING PLACES	1	2	17	0	516	0	0	1318
38. MEDICAL + LEGAL SERVICES	128	0	202	30	899	332	89	4502
39. EDUCATIONAL SERVICES	0	0	0	14	181	0	0	410
40. ALL OTHER SERVICES	0	312	0	1057	3441	7673	2256	34979
41. RAILROADS	870	8	1409	0	2561	0	2256	34979
42. TRUCKING + WAREHOUSING	2368	324	970	1057	7471	7	249	13353
43. ALL OTHER TRANSPORTATION	93	277	1069	265	4984	2326	3785	13353
44. COMMUNICATIONS	5	100	433	89	4984	220	194	1969
45. ELECTRIC COMPANIES + SYSTEMS	1138	128	692	939	8410	5161	2143	3746
46. GAS COMPANIES AND SYSTEMS	1348	128	1465	2441	8410	9499	1480	7806
47. WATER + SANITARY SERVICES	931	172	879	4829	206	6640	1308	7589
48. WATER	299	111	93	350	8253	840	367	1615
49. HOUSEHOLDS	46310	7126	43273	62213	302097	101360	52783	437855
50. ALL OTHER	75306	42739	139567	73113	23610	79467	27478	103275
51. EXPORTS	19456	14969	27435	39162	95881	88921	49199	905281
52. TOTAL FINAL PAYMENTS	141072	64834	210275	174488	491588	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	INSURANC AGENTS	REAL EST	ALL OTHER FIRE	HOTELS & LODGING	MEDICALS LEGAL	EDUCAT'L SERVICES
1. AGRICULTURE (UNDERGROUND)	0	0	0	0	0	611	139	0
2. COAL MINING (STRIP + ADGER)	0	0	0	0	0	398	836	1717
3. PETROLEUM + NATURAL GAS	0	0	0	0	0	1425	0	1127
4. ALL OTHER MINING	0	0	0	0	0	0	5	0
5. GENERAL CONTRACTORS (BUILDING)	126	4	0	7962	0	121	0	16098
6. SPECIAL TRADES CONTRACTORS (NON-BUILDING)	0	4	0	252	0	380	0	18388
7. FOOD + KINDRED PRODUCTS + N.E.C.	1117	4	40	3952	0	2717	2502	2495
8. FOOD + KINDRED PRODUCTS (DAIRIES)	0	0	0	0	0	4	2166	367
9. FOOD + KINDRED PRODUCTS (BAKERIES)	0	0	0	0	0	2	65	538
10. APPAREL + ACCESSORIES	0	0	0	0	0	3	408	512
11. LOGGING + SAWMILLS	0	0	0	0	0	31	2362	675
12. PRINTING + OTHER WOOD FABRICATION	0	0	0	0	0	0	50	0
13. CHEMICALS	6	0	0	3	0	22	414	17
14. GLASS	1386	2128	742	4147	418	221	2054	1632
15. PETROLEUM	16	0	0	0	0	0	1192	0
16. STONE + CLAY PRODUCTS	0	0	0	105	0	0	0	555
17. PRIMARY METAL PRODUCTS	0	0	0	0	0	0	845	34
18. FABRICATED METAL PRODUCTS	0	0	0	0	0	0	16	1401
19. MACHINERY (EXCEPT ELECTRICAL)	0	0	0	0	0	0	6326	8382
20. ELECTRICAL MACHINERY + APPARATUS	0	0	0	0	0	0	884	170
21. TRANSPORTATION EQUIPMENT	0	0	0	0	0	0	4288	9459
22. INSTRUMENTS + RELATED PRODUCTS	0	0	0	0	0	0	1685	957
23. EATING + DRINKING ESTABLISHMENTS	96	0	71	0	0	0	2144	0
24. ALL OTHER MANUFACTURING	34	0	71	0	0	25	699	0
25. WHOLESALE TRADE	126	118	841	282	23	25	845	34
26. RETAIL FOOD STORES	0	110	102	4736	0	1	16	1401
27. RETAIL GASOLINE SERVICE STATIONS	29	0	277	122	0	2643	6326	8382
28. ALL OTHER RETAIL	528	0	420	1113	0	550	1371	170
29. OTHER FINANCE	22	318	1315	1503	0	630	884	170
30. INSURANCE AGENTS + BROKERS	236	485	1543	363	0	2430	4288	9459
31. REAL ESTATE	2412	798	170	443	0	47	2144	0
32. ALL OTHER PTN. INSUR. + REAL ESTATE	1189	1493	698	11655	0	2018	6112	5366
33. HOTELS + LEGAL SERVICES	1989	0	232	644	0	567	139	401
34. MEDICAL + LEGAL SERVICES	1384	11	492	280	0	4	18173	427
35. EDUCATIONAL SERVICES	75	4423	5566	15485	0	354	16605	2708
36. ALL OTHER SERVICES	8316	10786	0	0	0	114	403	23976
37. RAILROADS	105	0	0	0	0	0	520	0
38. TRUCKING + WAREHOUSING	8231	833	165	471	82	114	403	2366
39. ALL OTHER TRANSPORTATION	2166	2496	2170	4177	892	27	520	726
40. COMMUNICATIONS	377	161	420	651	303	2518	4131	6887
41. ELECTRIC COMPANIES + SYSTEMS	717	202	1874	2151	793	1421	1892	5955
42. GAS COMPANIES AND SYSTEMS	223	41	76	226	6	543	4484	8049
43. WATER + SANITARY SERVICES	0	0	0	0	0	0	800	1452
44. HOUSEHOLDS	69372	37265	61619	45756	14948	30026	263225	409304
45. ALL OTHER FINAL PAYMENTS	22201	40042	301459	16012	20776	5300	191701	93172
46. IMPORTS	107462	51786	37380	62593	18977	6810	99069	209740
47. TOTAL FINAL PAYMENTS	199035	129093	400458	124361	54701	42136	473395	712216
48. TOTAL GROSS OUTLAY	230000	165000	447462	185655	105000	70700	559875	854480

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	1287	797	4
3. COAL MINING (STRIP + AUGER)	0	0	0	0	0	3507	0	0
4. PETROLEUM + NATURAL GAS	61	0	2219	4393	0	0	1934	0
5. ALL OTHER MINING	0	2443	0	0	0	0	0	1540
6. GENERAL CONTRACTORS (BUILDING)	0	1404	113	0	0	14	11	17
7. GENERAL CONTRACTORS (NON-BUILDING)	0	0	2756	0	0	0	0	0
8. SPECIAL TRADES CONTRACTORS	2338	3051	584	485	1258	0	11	4122
9. FOOD + KINDRED PRODUCTS + N.E.C.	0	0	0	0	0	0	0	0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0	0	0	0	0	0	0	0
11. FOOD + KINDRED PRODUCTS (BAKERIES)	38	0	0	0	0	0	0	0
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0	0	0	0	0	0	0	0
13. APPAREL + ACCESSORIES	0	0	0	0	0	0	0	0
14. LOGGING + SAWMILLS	0	247	0	0	0	58	0	0
15. FURNITURE + OTHER WOOD FABRICATION	130	0	15	133	7	58	17	2
16. PRINTING + PUBLISHING	14626	43	2980	39	697	1830	258	57
17. CHEMICALS	3346	0	23	15	0	0	0	1086
18. PETROLEUM	1284	3821	352	933	455	1626	0	36
19. GLASS	0	0	0	0	0	0	0	0
20. STONE + CLAY PRODUCTS	0	321	27	0	0	1641	276	282
21. PRIMARY METAL PRODUCTS	161	2430	0	8741	5634	1641	0	0
22. FABRICATED METAL PRODUCTS	3600	365	0	3094	285	101	0	26
23. MACHINERY (EXCEPT ELECTRICAL)	723	704	0	550	9	0	101	506
24. ELECTRICAL MACHINERY + APPARATUS	4824	26	0	0	901	0	0	3
25. TRANSPORTATION EQUIPMENT	169	3499	250	19	17	167	0	4
26. INSTRUMENTS + RELATED PRODUCTS	76	39	0	0	51	21	0	2
27. ALL OTHER MANUFACTURING ESTABLISHMENTS	161	0	164	2753	147	581	76	16
28. EATING + DRINKING ESTABLISHMENTS	0	0	141	726	394	2839	498	982
29. WHOLESALE TRADE	14326	385	22561	0	147	0	0	0
30. RETAIL FOOD STORES	0	0	1572	235	147	7	123	190
31. RETAIL GASOLINE SERVICE STATIONS	2362	0	2505	0	78	0	143	120
32. ALL OTHER RETAIL	13864	1021	1702	1044	746	210	285	44
33. BANKING	4031	0	164	0	0	0	0	0
34. OTHER FINANCE	38	0	8011	0	317	820	71	308
35. INSURANCE AGENTS + BROKERS	5270	9276	392	0	243	551	1109	0
36. REAL ESTATE	3993	0	0	0	372	203	265	71
37. ALL OTHER FIN. INSUR. + REAL ESTATE	684	56	33	52	91	406	251	13
38. HOTELS + OTHER LODGING PLACES	1684	843	223	0	0	1234	67	0
39. MEDICAL + LEGAL SERVICES	14056	0	0	0	0	0	0	0
40. EDUCATIONAL SERVICES	21935	1708	0	1522	5730	2247	359	64
41. ALL OTHER SERVICES	292	739	0	0	2113	9344	226	314
42. RAILROADS	292	1708	0	0	1951	17067	332	200
43. TRUCKING + WAREHOUSING	3862	2573	415	276	14773	77037	1835	227
44. ALL OTHER TRANSPORTATION	3000	2573	31	349	1058	3144	896	640
45. COMMUNICATIONS	6270	1717	1752	693	268	3144	220	249
46. ELECTRIC COMPANIES + SYSTEMS	2508	1717	1752	325	1803	25267	220	640
47. GAS COMPANIES AND SYSTEMS	7863	439	1439	315	1436	791	1323	162
48. WATER + SANITARY SERVICES	2054	108	262	11	4	72	179	805
49. HOUSEHOLDS FINAL PAYMENTS	319208	130460	112536	34019	109320	158520	32009	13247
50. ALL OTHER FINAL PAYMENTS	229812	160443	133109	49552	41760	115109	136421	12296
51. IMPORTS	799979	104789	93249	21851	68638	211350	26721	9740
52. TOTAL FINAL PAYMENTS	628999	395692	338894	105422	219718	484979	195151	35283
53. 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 (UNDERGROUND)	61955	64	1457	6423	45900	115799	173740
2. COAL MINING (STRIP + AUGER)	3812	136	457	509	2528355	2533269	2861100
3. COAL MINING (NATURAL GAS)	1064	146	0	0	215638	216848	438900
4. PETROLEUM + NATURAL GAS	0	0	0	0	37477	37477	92459
5. ALL OTHER MINING	25037	252	4903	0	13694	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 PROD-MEATS + N.E.C.	46792	161	0	460	23445	70858	96000
10. FOOD + KINDRED PRODUCTS (DAIRIES)	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	14970	49644	56700
13. APPAREL + ACCESSORIES	28042	15	0	0	43633	71690	74300
14. LOGGING + SAWMILLS	17377	254	73	485	27321	45510	109640
15. FURNITURE + OTHER WOOD FABRICATIGN	12058	968	423	0	51878	65327	70650
16. PRINTING + PUBLISHING	22342	2741	7471	1454	11684	43692	160500
17. CHEMICALS	132192	128	948	27871	1442815	1603954	1859800
18. PETROLEUM	34369	1193	16213	388	10027	62190	147000
19. GLASS	54615	94	15108	0	240611	295668	316600
20. STONE + CLAY PRODUCTS	11526	11553	0	7133	126459	171779	258700
21. PRIMARY METAL PRODUCTS	1217	156	0	3587	1398782	1400155	1522400
22. FABRICATED METAL PRODUCTS	158021	2318	292	50	212876	244879	323300
23. MACHINERY (EXCEPT ELECTRICAL)	4256	133	0	3635	162864	167140	185900
24. ELECTRICAL MACHINERY + APPARATUS	28371	20	0	3635	167688	199697	215150
25. TRANSPORTATION EQUIPMENT	0	3	3371	68563	90715	162671	167500
26. INSTRUMENTS + RELATED PRODUCTS	6029	22	0	24	51984	58037	67100
27. ALL OTHER MANUFACTURING	31386	0	0	24	152883	184269	246350
28. EATING + DRINKING ESTABLISHMENTS	195556	82	292	50	29320	225300	235000
29. WHOLESALE TRADE	158021	188	4568	848	145540	311295	491575
30. RETAIL FOOD STORES	328807	1081	0	0	13349	342344	350400
31. RETAIL GASOLINE SERVICE STATIONS	114132	1837	496	73	10336	126118	151040
32. ALL OTHER RETAIL	554746	1262	4203	242	164211	725239	803950
33. BANKING	93639	499	2700	6156	15972	149077	165000
34. OTHER FINANCE	123750	1481	890	0	55684	290965	447462
35. INSURANCE AGENTS + BROKERS	232910	40	4086	751	16340	115087	185655
36. REAL ESTATE	9437	12864	16381	0	11761	50443	105000
37. ALL OTHER FIN. INSUR. + REAL ESTATE	24913	383	438	121	38104	63959	70700
38. HOTELS + OTHER LODGING PLACES	166495	25760	82821	114021	69844	458941	559875
39. MEDICAL + LEGAL SERVICES	57839	5760	374224	48472	12946	819265	854480
40. EDUCATIONAL SERVICES	481321	3003	6990	2726	34356	531153	769400
41. ALL OTHER SERVICES	14256	20	4897	17848	337555	377559	434723
42. RAILROADS + WAREHOUSING	61619	20	4159	4823	183646	254267	392168
43. TRUCKING + TRANSPORTATION	14590	7264	2635	3848	41075	69412	132367
44. ALL OTHER TRANSPORTATION	72097	4551	6525	1797	65390	150360	246362
45. COMMUNICATIONS	50595	1898	2024	741	496553	551811	726292
46. ELECTRIC COMPANIES + SYSTEMS	52575	2005	992	145	39328	95045	224625
47. GAS COMPANIES AND SYSTEMS	24758	1407	613	48	1207	28033	51568
48. WATER + SANITARY SERVICES							
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	8864360	23424492
53. TOTAL GROSS OUTLAY	8866065	599003	1459361	2423588	10076475	23424492	41644261

TABLE 11

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&AU	PETROL & NAT GAS	ALL OTHER MINING	GEN CONT BLDG	GEN CONT NON-BLDG	SP TRADE CONTR.'S
1. AGRICULTURE (UNDERGROUND)	0.10292	0.0	0.0	0.0	0.00409	0.0	0.0	0.0
2. COAL MINING (STRIP & AUGER)	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	0.01799	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	0.0
7. GENERAL CONTRACTORS (NON-BUILDING)	0.0	0.00133	0.0	0.00012	0.0	0.02326	0.03586	0.00276
8. SPECIAL TRADES CONTRACTORS	0.00660	0.00230	0.000049	0.00375	0.04755	0.22371	0.03068	0.02784
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 FABRICATIGN	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	0.0150	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	0.00884	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	0.00070	0.0	0.0	0.0	0.01673	0.01191	0.01429
22. FABRICATED METAL PRODUCTS	0.00270	0.00748	0.00007	0.00743	0.00939	0.02408	0.00269	0.00548
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 GAS/LINE 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	0.00485	0.00517	0.00329	0.00408	0.01233
34. OTHER FINANCE	0.00488	0.0	0.00387	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	0.00020	0.00023	0.00191	0.00243
38. HOTELS + OTHER LODGING PLACES	0.0	0.0	0.0	0.01894	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	0.00058	0.00530	0.00571	0.00360	0.00041	0.00287	0.0
43. TRUCKING + WAREHOUSING	0.01510	0.00389	0.000834	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	0.000324	0.00402	0.00112	0.00283	0.00037	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	0.000758	0.00521
48. WATER + SANITARY SERVICES	0.00004	0.00003	0.000012	0.00072	0.000003	0.02425	0.000008	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 (UNDERGROUND)	0.17099	0.24013	0.00767	0.0	0.0	0.04917	0.00010	0.0
2. COAL MINING (STRIP + AUGER)	0.0	0.00012	0.0	0.00320	0.00065	0.00097	0.00735	0.00076
3. COAL MINING + NATURAL GAS	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	0.000005	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. GENERAL CONTRACTORS (BUILDING)	0.0	0.00033	0.00044	0.0	0.00005	0.0	0.00149	0.0
7. GENERAL CONTRACTORS (NON-BUILDING)	0.0	0.000156	0.00015	0.00004	0.0	0.00050	0.0	0.0
8. SPECIAL TRADES CONTRACTORS	0.07512	0.00677	0.00106	0.0	0.02093	0.00611	0.0	0.0
9. FOOD + KINDRED PRODUCTS + N.E.C.	0.0	0.01493	0.00720	0.0	0.0	0.0	0.0	0.0
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.0	0.01481	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	0.0	0.00003	0.0	0.16365	0.13014	0.0
14. FURNITURE + OTHER WOOD FABRICATING	0.0	0.0	0.00010	0.00003	0.00435	0.0	0.00615	0.00013
15. PRINTING + PUBLISHING	0.00178	0.00251	0.00217	0.01243	0.00008	0.00002	0.00122	0.21295
16. CHEMICALS	0.0	0.0	0.0	0.0250	0.00008	0.0	0.00571	0.00090
17. PETROLEUM	0.0	0.0	0.0	0.01011	0.0	0.00147	0.00003	0.0
18. GLASS	0.00040	0.0	0.0	0.0	0.0	0.0	0.00136	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	0.000807	0.0	0.00430	0.01094	0.0
21. FABRICATED METAL PRODUCTS	0.0	0.0	0.0	0.0	0.00004	0.00015	0.00065	0.0
22. MACHINERY (EXCEPT ELECTRICAL)	0.00010	0.00020	0.0	0.0	0.00008	0.00015	0.0	0.0
23. ELECTRICAL MACHINERY + APPARATUS	0.0	0.0	0.0	0.0	0.0	0.00015	0.0	0.0
24. TRANSPORTATION EQUIPMENT	0.000275	0.00210	0.00408	0.00833	0.00586	0.00282	0.00073	0.0
25. INSTRUMENTS + RELATED PRODUCTS	0.00061	0.00276	0.00408	0.00305	0.0	0.00345	0.00304	0.00187
26. ALL OTHER MANUFACTURING	0.03257	0.01653	0.02614	0.01326	0.00320	0.00345	0.00304	0.00397
27. EATING + DRINKING ESTABLISHMENTS	0.000321	0.00142	0.00595	0.00750	0.00029	0.00413	0.00097	0.00277
28. WHOLESALE TRADE	0.00507	0.00191	0.00956	0.00112	0.0	0.00311	0.0	0.02035
29. RETAIL FOOD STORES	0.00750	0.00057	0.00665	0.00047	0.00084	0.00080	0.00182	0.00181
30. RETAIL GASOLINE SERVICE STATIONS	0.01314	0.00057	0.00309	0.0	0.00084	0.00080	0.00182	0.00181
31. ALL OTHER RETAIL	0.00266	0.00626	0.01912	0.01442	0.01001	0.02020	0.00442	0.01247
32. BANKING	0.000321	0.00190	0.00595	0.00750	0.00029	0.00413	0.00097	0.00277
33. OTHER FINANCE	0.00507	0.00191	0.00956	0.00112	0.0	0.00311	0.0	0.02035
34. INSURANCE AGENTS + BROKERS	0.00750	0.00057	0.00665	0.00047	0.00084	0.00080	0.00182	0.00181
35. REAL ESTATE	0.00266	0.00626	0.01912	0.01442	0.01001	0.02020	0.00442	0.01247
36. ALL OTHER FIN. INSUR. + REAL ESTATE	0.0	0.00190	0.00595	0.00750	0.00029	0.00413	0.00097	0.00277
37. HOTELS + OTHER LODGING PLACES	0.0	0.00025	0.00003	0.00182	0.00005	0.00047	0.00014	0.00224
38. MEDICAL + LEGAL SERVICES	0.00800	0.00085	0.00045	0.00268	0.00004	0.00330	0.00184	0.00235
39. EDUCATIONAL SERVICES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00069
40. ALL OTHER SERVICES	0.00007	0.03688	0.03896	0.00775	0.00618	0.01101	0.01626	0.02351
41. RAILROADS	0.000007	0.0	0.0	0.0	0.00018	0.00109	0.0	0.0
42. TRUCKING + WAREHOUSING	0.00833	0.00562	0.00164	0.01062	0.00906	0.00658	0.00261	0.00560
43. ALL OTHER TRANSPORTATION	0.00582	0.00108	0.00279	0.00972	0.00162	0.00302	0.00196	0.00358
44. COMMUNICATIONS	0.00185	0.00019	0.00601	0.01311	0.02481	0.00798	0.00443	0.00878
45. ELECTRIC COMPANIES + SYSTEMS	0.01113	0.00615	0.02454	0.00246	0.00864	0.00951	0.00515	0.00316
46. GAS COMPANIES AND SYSTEMS	0.00308	0.00159	0.02394	0.00276	0.00375	0.00249	0.00711	0.00394
47. 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	0.0	0.0	0.0	0.0	0.0
2. COAL MINING (STRIP + AUGER)	0.01861	0.02476	0.00038	0.00053	0.02491	0.00062	0.00010	0.0
3. COAL MINING	0.00016	0.0	0.0	0.00037	0.00005	0.0	0.0	0.0
4. PETROLEUM + NATURAL GAS	0.00701	0.06161	0.0	0.0	0.00445	0.00021	0.0	0.0
5. ALL OTHER MINING	0.00106	0.07260	0.0	0.04014	0.00044	0.00015	0.00010	0.00001
6. GENERAL CONTRACTORS (BUILDING)	0.00027	0.00027	0.00013	0.0	0.00011	0.00077	0.0	0.00004
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00054	0.00008	0.0	0.00080	0.00057	0.00030	0.00024	0.0
8. SPECIAL TRADES CONTRACTORS	0.00855	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0
13. APPAREL + ACCESSORIES	0.00002	0.0	0.0	0.00034	0.0	0.0	0.0	0.0
14. LOGGING + SAWMILLS	0.0	0.00039	0.00002	0.0	0.0	0.00001	0.00004	0.00103
15. FURNITURE + OTHER WOOD FABRICATIGN	0.00080	0.00001	0.00049	0.00412	0.00010	0.00128	0.00356	0.00118
16. PRINTING + PUBLISHING	0.12122	0.03841	0.00295	0.00346	0.00432	0.00155	0.0	0.01998
17. CHEMICALS	0.00207	0.02403	0.00002	0.03942	0.00009	0.0	0.0	0.0
18. PETROLEUM	0.00080	0.0	0.02713	0.02089	0.0	0.0	0.0	0.0
19. GLASS	0.00088	0.02379	0.00394	0.00289	0.0	0.0	0.0	0.0
20. STONE + CLAY PRODUCTS	0.00009	0.0	0.00239	0.0	0.00252	0.10275	0.04801	0.15396
21. PRIMARY METAL PRODUCTS	0.00255	0.00593	0.00036	0.01634	0.00094	0.00073	0.02127	0.00011
22. FABRICATED METAL PRODUCTS	0.00009	0.0	0.00031	0.00009	0.00127	0.00135	0.0	0.00426
23. MACHINERY (EXCEPT ELECTRICAL)	0.00077	0.0	0.0	0.00063	0.00032	0.00003	0.01140	0.00219
24. ELECTRICAL MACHINERY + APPARATUS	0.0	0.0	0.0	0.00048	0.00009	0.00008	0.0	0.0
25. TRANSPORTATION EQUIPMENT	0.00319	0.0	0.00394	0.00010	0.00420	0.00440	0.0	0.00260
26. INSTRUMENTS + RELATED PRODUCTS	0.00986	0.00040	0.03986	0.00644	0.00003	0.00029	0.00016	0.00072
27. ALL OTHER MANUFACTURING	0.00225	0.00024	0.0	0.00566	0.00003	0.01214	0.00820	0.00463
28. EATING + DRINKING ESTABLISHMENTS	0.00841	0.01864	0.01568	0.01566	0.00448	0.0	0.0	0.0
29. WHOLESALE TRADE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30. RETAIL FOOD STORES	0.0	0.00015	0.0	0.00584	0.00298	0.00287	0.00050	0.00021
31. RETAIL GASOLINE SERVICE STATIONS	0.00209	0.00190	0.00237	0.01156	0.00111	0.00043	0.00179	0.00454
32. ALL OTHER RETAIL	0.00050	0.00274	0.00451	0.00340	0.00002	0.00073	0.00400	0.00112
33. BANKING	0.0	0.00276	0.0	0.0	0.00002	0.00073	0.0	0.0
34. OTHER FINANCE	0.00361	0.00075	0.01951	0.00772	0.00147	0.00155	0.01083	0.00834
35. INSURANCE AGENTS + BROKERS	0.0	0.00012	0.0	0.0	0.00096	0.00409	0.0	0.00210
36. REAL ESTATE	0.00257	0.00012	0.0	0.0	0.00006	0.00025	0.0	0.00004
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00035	0.00025	0.00019	0.00019	0.00006	0.00012	0.00025	0.00070
38. HOTELS + OTHER LODGING PLACES	0.00176	0.000176	0.00062	0.00551	0.00150	0.00039	0.00065	0.00317
39. MEDICAL + LEGAL SERVICES	0.0	0.0	0.0	0.0	0.00018	0.00012	0.0	0.00089
40. EDUCATIONAL SERVICES	0.00349	0.00324	0.01275	0.01677	0.00002	0.00439	0.00337	0.00877
41. ALL OTHER SERVICES	0.00786	0.00070	0.00026	0.00373	0.00424	0.00024	0.00548	0.00090
42. RAILROADS	0.00752	0.03729	0.00433	0.03347	0.00848	0.00281	0.0	0.00247
43. TRUCKING + WAREHOUSING	0.00393	0.01320	0.00020	0.00215	0.00062	0.00071	0.00069	0.00399
44. ALL OTHER TRANSPORTATION	0.00438	0.002841	0.00314	0.00412	0.00353	0.00256	0.00404	0.02373
45. COMMUNICATIONS + SYSTEMS	0.00801	0.00715	0.01163	0.01082	0.00660	0.00986	0.00524	0.02373
46. ELECTRIC COMPANIES + SYSTEMS	0.01297	0.01896	0.03219	0.02588	0.00346	0.01065	0.00406	0.01288
47. GAS COMPANIES AND SYSTEMS	0.00198	0.00034	0.00039	0.00056	0.00001	0.000124	0.00016	0.00376
48. WATER + SANITARY SERVICES								
49. HOUSEHOLDS	0.20869	0.14357	0.40088	0.30987	0.28867	0.27822	0.45095	0.22073
50. ALL OTHER FINAL PAYMENTS	0.36229	0.33686	0.21644	0.23990	0.52855	0.43775	0.25624	0.38593
51. IMPORTS	0.18361	0.12841	0.17936	0.16089	0.09865	0.10418	0.15271	0.11877
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

	25	26	27	28	29	30	31	32
	TRANSPOT EQUIPM	INSTRUC'S EPRODUCT	ALL OTHER MANUF	EATING & DRNG 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	0.00044	0.00465
2. COAL MINING (STRIP + AUGER)	0.0	0.0	0.00106	0.00010	0.00115	0.0	0.00044	0.00465
3. COAL MINING + 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	0.00251	0.0	0.00003	0.0	0.0	0.0	0.0	0.0
6. GENERAL CONTRACTORS (BUILDING)	0.00003	0.0	0.00003	0.0	0.00138	0.00233	0.0	0.00081
7. GENERAL CONTRACTORS (NON-BUILDING)	0.0	0.0	0.00213	0.0	0.00007	0.0	0.0	0.00020
8. SPECIAL TRADES CONTRACTORS + N.E.C.	0.0	0.0	0.02345	0.00009	0.00138	0.00233	0.0	0.00701
9. FOOD + KINDRED PRODUCTS (DAIRIES)	0.0	0.0	0.0	0.04313	0.00007	0.0	0.0	0.0
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0.0	0.0	0.0	0.03011	0.0	0.00005	0.0	0.00068
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.0	0.0	0.0	0.02132	0.0	0.0	0.0	0.00067
12. APPAREL + ACCESSORIES	0.0	0.0	0.0	0.00007	0.0	0.0	0.0	0.00063
13. LOGGING + SAWMILLS	0.00008	0.00033	0.00003	0.0	0.00017	0.0	0.0	0.0
14. FURNITURE + OTHER WOOD FABRICATION	0.00009	0.00002	0.00005	0.00055	0.00017	0.00029	0.00010	0.00130
15. PRINTING + PUBLISHING	0.00047	0.00080	0.00222	0.00096	0.00080	0.03613	0.00334	0.03003
16. CHEMICALS	0.00003	0.0	0.00556	0.0	0.00169	0.0	0.0	0.0
17. PETROLEUM	0.0	0.0	0.00075	0.0	0.00019	0.00018	0.02383	0.0
18. GLASS	0.0	0.0	0.00033	0.00090	0.0	0.0	0.0	0.00962
19. STONE + CLAY PRODUCTS	0.0	0.0	0.00006	0.0	0.0	0.0	0.0	0.00007
20. PRIMARY METAL PRODUCTS	0.09210	0.0	0.00006	0.0	0.00007	0.0	0.0	0.0
21. FABRICATED METAL PRODUCTS	0.00056	0.0	0.03010	0.0	0.00007	0.0	0.0	0.00004
22. MACHINERY (EXCEPT ELECTRICAL)	0.0	0.0	0.00924	0.00021	0.0	0.0	0.0	0.0
23. ELECTRICAL MACHINERY + APPARATUS	0.01189	0.0	0.00211	0.00004	0.00047	0.0	0.0	0.0
24. TRANSPORTATION EQUIPMENT	0.00009	0.0	0.00040	0.0	0.00020	0.0	0.00006	0.00005
25. INSTRUMENTS + RELATED PRODUCTS	0.0	0.00120	0.0	0.00008	0.0	0.00494	0.0	0.00010
26. ALL OTHER MANUFACTURING	0.0	0.00369	0.00635	0.00799	0.00196	0.00004	0.00016	0.00112
27. EATING + DRINKING ESTABLISHMENTS	0.00007	0.0	0.00002	0.00002	0.00002	0.00004	0.00000	0.00063
28. WHOLESALE TRADE	0.00187	0.0	0.00171	0.05386	0.01550	0.00696	0.01201	0.00247
29. RETAIL FOOD STORES	0.0	0.0	0.0	0.00398	0.00016	0.00009	0.0	0.0
30. RETAIL GASOLINE SERVICE STATIONS	0.00023	0.00010	0.00058	0.00009	0.00877	0.00034	0.00180	0.00391
31. ALL OTHER RETAIL	0.00087	0.0	0.00025	0.00103	0.00190	0.00019	0.00165	0.00810
32. BANKING	0.00130	0.00424	0.00239	0.00288	0.00376	0.00203	0.00396	0.01024
33. OTHER FINANCE	0.0	0.0	0.00003	0.00067	0.00666	0.00101	0.00008	0.00359
34. INSURANCE AGENTS + BROKERS	0.00267	0.00195	0.00193	0.00703	0.01164	0.01752	0.01032	0.01060
35. REAL ESTATE	0.0	0.0	0.000134	0.00062	0.00003	0.06266	0.00610	0.01575
36. ALL OTHER FIN. INSUR. + REAL ESTATE	0.0	0.0	0.00006	0.0	0.00221	0.0	0.00021	0.00130
37. HOTELS + OTHER LODGING PLACES	0.00001	0.00003	0.00007	0.00013	0.00105	0.0	0.0	0.00164
38. MEDICAL + LEGAL SERVICES	0.00077	0.0	0.00082	0.00006	0.00183	0.00095	0.00059	0.00560
39. EDUCATIONAL SERVICES	0.0	0.0	0.0	0.00006	0.00037	0.0	0.0	0.00051
40. ALL OTHER SERVICES	0.00520	0.00466	0.00572	0.00450	0.00700	0.02190	0.01494	0.04351
41. RAILROADS	0.01414	0.00012	0.00394	0.0	0.00700	0.00002	0.00165	0.00330
42. TRUCKING + WAREHOUSING	0.00056	0.000484	0.00434	0.00113	0.01520	0.00664	0.02505	0.01661
43. ALL OTHER TRANSPORTATION	0.00003	0.000413	0.00176	0.00038	0.01014	0.00063	0.00129	0.00466
44. COMMUNICATIONS	0.00680	0.00150	0.00281	0.00400	0.00743	0.01473	0.01419	0.00466
45. ELECTRIC COMPANIES + SYSTEMS	0.00805	0.00192	0.00595	0.01039	0.01711	0.02711	0.00980	0.00971
46. GAS COMPANIES AND SYSTEMS	0.00556	0.00257	0.00357	0.02055	0.01679	0.01896	0.00866	0.00944
47. WATER + SANITARY SERVICES	0.00179	0.00166	0.00038	0.00149	0.00042	0.00240	0.00243	0.00201
48.								
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	0.22305	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 OTHER FIRE	HOTELS & LODGING	MEDICAL & LEGAL	EDUCAT'L SERVICES
1. AGRICULTURE (UNDERGROUND)	0.00	0.00	0.00	0.00	0.00	0.00865	0.00025	0.00
2. COAL MINING (STRIP + AUGER)	0.00	0.00	0.00	0.00	0.00	0.00564	0.00153	0.00201
3. PETROLEUM + NATURAL GAS	0.00	0.00	0.00	0.00	0.00	0.02016	0.00	0.00132
4. ALL OTHER MINING	0.00	0.00	0.00	0.00	0.00	0.00	0.000001	0.00
5. GENERAL CONTRACTORS (BUILDING)	0.00055	0.00003	0.00	0.04289	0.00	0.00172	0.00	0.01884
6. GENERAL CONTRACTORS (NON-BUILDING)	0.00	0.00003	0.00	0.00136	0.00	0.00538	0.00	0.02152
7. SPECIAL TRACES CONTRACTORS	0.00486	0.00003	0.00009	0.02129	0.00	0.03844	0.00047	0.00292
8. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00	0.00	0.00	0.00	0.00	0.00006	0.00037	0.00063
9. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00	0.00	0.00	0.00	0.00	0.00004	0.00117	0.00060
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00	0.00	0.00	0.00	0.00	0.00005	0.00073	0.00079
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00	0.00	0.00	0.00	0.00	0.00045	0.000422	0.00
12. APPAREL + ACCESSORIES	0.00	0.00	0.00	0.00002	0.00	0.00004	0.00009	0.00002
13. LOGGING + SAWMILLS	0.00003	0.00	0.00166	0.02234	0.000399	0.000313	0.00074	0.00191
14. FURNITURE + OTHER WOOD FABRICATIGN	0.00603	0.01290	0.00	0.00	0.00	0.00	0.00367	0.00
15. PRINTING + PUBLISHING	0.00007	0.00	0.00	0.00	0.00	0.00	0.00213	0.00002
16. CHEMICALS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17. PETROLEUM	0.00	0.00	0.00	0.00057	0.00	0.00	0.00	0.00065
18. GLASS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19. STONE + CLAY PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00010	0.00	0.00004
20. PRIMARY METAL PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21. FABRICATED METAL PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00008	0.00	0.00
22. MACHINERY (EXCEPT ELECTRICAL)	0.00	0.00001	0.00	0.00	0.00	0.00	0.00	0.00
23. ELECTRICAL MACHINERY + APPARATUS	0.00	0.00	0.00	0.00	0.00	0.00008	0.00	0.00
24. TRANSPORTATION EQUIPMENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00125	0.00
25. TRANSPORTATION RELATED PRODUCTS	0.00	0.00	0.00016	0.00	0.00	0.00036	0.000151	0.00004
26. INSTRUMENTS + RELATED PRODUCTS	0.00042	0.00072	0.00016	0.00152	0.00022	0.00036	0.00003	0.00161
27. ALL OTHER MANUFACTURING	0.00015	0.00067	0.00023	0.02551	0.00	0.03739	0.01130	0.00984
28. EATING + DRINKING ESTABLISHMENTS	0.00055	0.00	0.00	0.00	0.00	0.00779	0.00158	0.00020
29. WHOLESALE TRADE	0.00	0.00	0.00062	0.00066	0.00	0.00779	0.00766	0.01107
30. RETAIL FOOD STORES	0.00013	0.00193	0.00094	0.00600	0.00743	0.00905	0.00766	0.01107
31. RETAIL GASCLINE SERVICE STATIONS	0.00230	0.006745	0.000294	0.00810	0.00152	0.03438	0.00301	0.00112
32. ALL OTHER RETAIL	0.00010	0.00294	0.00038	0.00196	0.00	0.00667	0.00383	0.00
33. BANKING	0.00103	0.00484	0.000345	0.00239	0.000426	0.02855	0.01199	0.00628
34. OTHER FINANCE	0.01049	0.00905	0.00156	0.06278	0.00208	0.00802	0.00025	0.00047
35. INSURANCE AGENTS + BROKERS	0.00517	0.00	0.00639	0.00347	0.00063	0.00	0.00025	0.00
36. REAL ESTATE	0.00865	0.00007	0.00052	0.00151	0.00029	0.00006	0.000036	0.00050
37. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00018	0.02681	0.000110	0.00300	0.00029	0.00501	0.03246	0.00317
38. HOTELS + OTHER LODGING PLACES	0.00602	0.00212	0.00110	0.00	0.41980	0.00020	0.00031	0.02266
39. MEDICAL + LEGAL SERVICES	0.00033	0.06537	0.01244	0.08341	0.01900	0.07240	0.00296	0.02806
40. EDUCATIONAL SERVICES	0.03616	0.00	0.00	0.00	0.00	0.00	0.00072	0.00
41. ALL OTHER SERVICES	0.000046	0.00505	0.00037	0.00254	0.00079	0.00162	0.00094	0.00277
42. RAILROADS	0.03579	0.01513	0.00485	0.02250	0.00850	0.00039	0.00093	0.00085
43. TRUCKING + WAREHOUSING	0.00942	0.00098	0.00094	0.00351	0.00289	0.03562	0.00738	0.00886
44. ALL OTHER TRANSPORTATION	0.00164	0.00098	0.00094	0.01159	0.00756	0.05062	0.00038	0.00697
45. COMMUNICATIONS	0.00164	0.00123	0.00419	0.02011	0.00756	0.02011	0.00801	0.00942
46. ELECTRIC COMPANIES + SYSTEMS	0.00312	0.00025	0.00017	0.00122	0.00006	0.00769	0.000143	0.00170
47. GAS COMPANIES AND SERVICES	0.00097	0.00025	0.00017	0.00122	0.00006	0.00769	0.000143	0.00170
48. WATER + SANITARY SERVICES	0.00097	0.00025	0.00017	0.00122	0.00006	0.00769	0.000143	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 II (CONTINUED)

DIRECT REQUIREMENTS PER DOLLAR OF OUTPUT, WEST VIRGINIA, 1975

	41	42	43	44	45	46	47	48
	ALL OTHER SERVICES	RAILROADS	TRUCK & WAREHOUS	ALL OTHER TRANSPORT	COMMUNICATI·S	ELEC CO· SYSTEMS	GAS CO· SYSTEMS	WATER & SANITARY
1. AGRICULTURE (UNDERGROUND)	0.00	0.00008	0.00	0.00	0.00	0.00	0.00355	0.00087
2. COAL MINING (STRIP + AUGER)	0.00	0.00	0.00	0.00	0.00	0.004829	0.00	0.00
3. PETROLEUM + NATURAL GAS	0.000008	0.00	0.00566	0.003319	0.00	0.00	0.08610	0.00
4. ALL OTHER MINING	0.00	0.00562	0.00	0.00	0.00	0.00	0.00005	0.02987
5. GENERAL CONTRACTORS (BUILDING)	0.000009	0.00	0.00029	0.00703	0.00511	0.00002	0.00005	0.00034
6. GENERAL CONTRACTORS (NON-BUILDING)	0.000304	0.00702	0.00149	0.00367	0.00	0.00	0.00005	0.07995
7. SPECIAL TRADES CONTRACTORS + N.E.C.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. FOOD + KINDRED PRODUCTS (DAIRIES)	0.000005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00007
11. FICCD + KINDRED PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12. APPAREL + ACCESSORIES	0.00	0.00057	0.00	0.00	0.00	0.00	0.00	0.00007
13. LOGGING + SAWMILLS	0.000017	0.00	0.00004	0.00101	0.00003	0.00008	0.00008	0.00004
14. FURNITURE + OTHER WOOD FABRICATI·N	0.01901	0.00010	0.00760	0.00030	0.00283	0.00252	0.00115	0.00112
15. PRINTING + PUBLISHING	0.00435	0.00	0.00006	0.00012	0.00	0.00	0.00	0.02107
16. CHEMICALS	0.00167	0.00879	0.00090	0.00705	0.00185	0.00224	0.00	0.00070
17. PETROLEUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18. GLASS	0.00	0.00074	0.00007	0.00	0.02287	0.00226	0.00123	0.00547
19. STONE + CLAY PRODUCTS	0.000021	0.00559	0.00	0.06604	0.00116	0.00	0.00	0.00051
20. PRIMARY METAL PRODUCTS	0.000468	0.00084	0.00	0.02338	0.00004	0.00014	0.00045	0.00983
21. FABRICATED METAL PRODUCTS	0.00094	0.00162	0.00	0.00416	0.00	0.00	0.00	0.00007
22. MACHINERY (EXCEPT ELECTRICAL)	0.000627	0.00006	0.00064	0.00015	0.00366	0.00023	0.00002	0.00672
23. ELECTRICAL MACHINERY + APPARATUS	0.00022	0.00805	0.00064	0.00010	0.00017	0.00003	0.00004	0.00004
24. TRANSPORTATION EQUIPMENT	0.00010	0.00001	0.00042	0.00280	0.00021	0.00080	0.00222	0.00032
25. INSTRUMENTS + RELATED PRODUCTS	0.00	0.00009	0.00036	0.00021	0.00160	0.00391	0.00140	0.01906
26. ALL OTHER MANUFACTURING	0.00021	0.00	0.05753	0.00549	0.00	0.00	0.00	0.00
27. EATING + DRINKING ESTABLISHMENTS	0.01862	0.00089	0.00	0.00	0.00060	0.00001	0.00085	0.00234
28. WHOLESALE TRADE	0.00	0.00	0.00	0.00	0.00032	0.00029	0.00064	0.03786
29. RETAIL FOOD STORES	0.00307	0.00	0.00401	0.00178	0.00060	0.00001	0.00085	0.00234
30. RETAIL GASOLINE SERVICE STATIONS	0.01802	0.00235	0.00639	0.00	0.00032	0.00017	0.00064	0.03786
31. ALL OTHER RETAIL	0.06524	0.00	0.00434	0.00789	0.00303	0.00029	0.00127	0.00086
32. BANKING	0.00005	0.00	0.00042	0.00	0.00129	0.00113	0.00032	0.00598
33. OTHER FINANCE	0.00685	0.02134	0.02043	0.00	0.00129	0.00113	0.00032	0.00598
34. INSURANCE AGENTS + BROKERS	0.00519	0.00	0.00100	0.00	0.00099	0.00076	0.00494	0.00
35. REAL ESTATE	0.00089	0.00	0.00001	0.00	0.00151	0.00028	0.00118	0.00139
36. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00089	0.00013	0.00057	0.00040	0.00037	0.00056	0.00112	0.00
37. HOTELS + OTHER LODGING PLACES	0.00219	0.000194	0.00009	0.00	0.00	0.00170	0.00030	0.00027
38. MEDICAL + LEGAL SERVICES	0.01827	0.00	0.00	0.00	0.02326	0.00309	0.00160	0.00125
39. EDUCATIONAL SERVICES	0.02851	0.00393	0.00	0.01150	0.00	0.00309	0.00160	0.00125
40. ALL OTHER SERVICES	0.00038	0.000170	0.00106	0.00	0.00858	0.01287	0.00101	0.00610
41. RAILROADS	0.00038	0.000170	0.00106	0.00	0.00858	0.01287	0.00101	0.00610
42. TRUCKING + WAREHOUSING	0.00502	0.000592	0.00008	0.00209	0.00792	0.02350	0.00148	0.00388
43. ALL OTHER TRANSPORTATION	0.00390	0.00054	0.00270	0.00415	0.00598	0.00969	0.00817	0.00054
44. COMMUNICATIONS	0.00815	0.00395	0.00447	0.00524	0.00109	0.00433	0.00399	0.01243
45. ELECTRIC COMPANIES + SYSTEMS	0.00326	0.00342	0.00384	0.00246	0.00732	0.03479	0.00098	0.04839
46. GAS COMPANIES AND SYSTEMS	0.01022	0.00101	0.00367	0.00238	0.00583	0.00109	0.00589	0.00316
47. WATER + SANITARY SERVICES	0.00267	0.000025	0.00067	0.00009	0.00002	0.00010	0.00080	0.01562
48.								
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 OTHER MINING	GEN CONT BLDG	GEN CONT NON-BLDG	SP TRADE CNTRS
1. AGRICULTURE (UNDERGROUND)	1.11705	0.00069	0.00033	0.00007	0.00534	0.00097	0.00040	0.00142
2. COAL MINING (STRIP + AUGER)	0.00071	1.01725	0.27860	0.00172	0.00170	0.00500	0.00517	0.00273
3. COAL MINING + NATURAL GAS	0.00083	0.00093	1.36638	0.00060	0.00062	0.00096	0.00049	0.00075
4. ALL OTHER MINING	0.02195	0.00076	0.00060	1.06108	0.00088	0.00172	0.01018	0.00132
5. GENERAL CONTRACTORS (BUILDING)	0.00048	0.00008	0.00011	0.00094	1.04447	0.01876	0.03039	0.00672
6. GENERAL CONTRACTORS (NON-BUILDING)	0.00044	0.00156	0.00062	0.00043	0.00050	1.03461	0.00036	0.00054
7. SPECIAL TRADES CONTRACTORS	0.01683	0.00276	0.00196	0.00492	0.05180	0.24113	1.03773	1.03054
8. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00572	0.00003	0.00008	0.00014	0.00014	0.00037	0.00009	0.00036
9. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00001	0.00001	0.00003	0.00005	0.00001	0.00005	0.00002	0.00003
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00001	0.00001	0.00004	0.00005	0.00001	0.00006	0.00002	0.00003
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00001	0.00002	0.00002	0.00004	0.00002	0.00004	0.00001	0.00002
12. APPAREL + ACCESSORIES	0.00001	0.00002	0.00004	0.00011	0.00002	0.00007	0.00004	0.00002
13. LOGGING + SAWMILLS	0.00686	0.01231	0.00524	0.00018	0.00938	0.01077	0.00023	0.02120
14. FURNITURE + OTHER WOOD FABRICATIGN	0.00231	0.00023	0.00015	0.00023	0.00149	0.00492	0.00101	0.00105
15. PRINTING + PUBLISHING	0.00192	0.00155	0.00214	0.00765	0.00594	0.00437	0.00255	0.00186
16. CHEMICALS	0.00562	0.00023	0.00054	0.00051	0.01399	0.00287	0.00757	0.00295
17. PETROLEUM	0.00155	0.00214	0.00140	0.00067	0.00649	0.01154	0.13033	0.00596
18. GLASS	0.00009	0.00006	0.00008	0.00023	0.00017	0.00058	0.00102	0.00205
19. STONE + CLAY PRODUCTS	0.01372	0.00575	0.00975	0.00032	0.00174	0.11416	0.05486	0.00989
20. PRIMARY METAL PRODUCTS	0.00172	0.00197	0.00147	0.00116	0.00256	0.02614	0.01571	0.02185
21. FABRICATED METAL PRODUCTS	0.00466	0.000813	0.00282	0.00851	0.01349	0.04280	0.00714	0.06279
22. MACHINERY (EXCEPT ELECTRICAL)	0.00026	0.00077	0.00104	0.00010	0.00462	0.00235	0.01977	0.00287
23. ELECTRICAL MACHINERY + APPARATUS	0.00020	0.00016	0.00040	0.00033	0.00025	0.00176	0.00052	0.00113
24. TRANSPORTATION EQUIPMENT	0.00036	0.00005	0.00048	0.00008	0.00041	0.00018	0.00011	0.00006
25. INSTRUMENTS + RELATED PRODUCTS	0.00006	0.00013	0.00007	0.01056	0.00006	0.00006	0.00014	0.00004
26. ALL OTHER MANUFACTURING	0.00190	0.00048	0.00081	0.00102	0.00623	0.02403	0.00376	0.02608
27. EATING + DRINKING ESTABLISHMENTS	0.00023	0.00007	0.00062	0.00035	0.00019	0.00141	0.00041	0.00080
28. WHOLESALE TRADE	0.06226	0.000542	0.03244	0.03792	0.03672	0.01816	0.01460	0.01644
29. RETAIL FOOD STORES	0.00008	0.00006	0.00010	0.00034	0.00022	0.00018	0.00010	0.00008
30. RETAIL GASOLINE SERVICE STATIONS	0.01351	0.00028	0.00173	0.01115	0.00207	0.00311	0.00161	0.00879
31. ALL OTHER RETAIL	0.00356	0.000414	0.00486	0.01581	0.00327	0.00407	0.00351	0.00169
32. BANKING	0.02635	0.00080	0.01889	0.00668	0.00681	0.00777	0.00612	0.01362
33. OTHER FINANCE	0.00614	0.00023	0.00562	0.00456	0.00092	0.00111	0.00062	0.00099
34. INSURANCE AGENTS + BROKERS	0.01143	0.01035	0.01842	0.10435	0.01787	0.01329	0.03152	0.02033
35. REAL ESTATE	0.001143	0.000403	0.00071	0.00581	0.00145	0.00749	0.00297	0.01106
36. REAL ESTATE FIN. INSUR. + REAL ESTATE	0.00015	0.00002	0.000245	0.00805	0.00261	0.00221	0.00247	0.00450
37. HOTELS + OTHER LODGING PLACES	0.00017	0.00005	0.00012	0.00020	0.00340	0.00563	0.000457	0.00096
38. MEDICAL + LEGAL SERVICES	0.000311	0.00013	0.000774	0.02491	0.00030	0.00024	0.00011	0.00029
39. EDUCATIONAL SERVICES	0.00037	0.00043	0.04043	0.04194	0.01489	0.01171	0.00509	0.01437
40. ALL OTHER SERVICES	0.01709	0.00123	0.00792	0.00657	0.00445	0.00175	0.00039	0.00062
41. TRUCKING + WAREHOUSING	0.03067	0.00533	0.01413	0.00480	0.02045	0.00934	0.03376	0.01107
42. RAILROADS + TRANSPORTATION	0.00626	0.00419	0.00255	0.00128	0.00128	0.00522	0.00553	0.00334
43. ALL OTHER TRANSPORTATION	0.00415	0.00234	0.00631	0.00644	0.00256	0.00576	0.00847	0.00300
44. COMMUNICATIONS + SYSTEMS	0.00761	0.001603	0.00798	0.00751	0.00503	0.00631	0.00387	0.00397
45. ELECTRIC COMPANIES AND SYSTEMS	0.00372	0.00076	0.00195	0.00397	0.00200	0.00859	0.01323	0.00780
46. GAS COMPANIES AND SYSTEMS	0.00042	0.00011	0.00040	0.00110	0.00024	0.02591	0.00033	0.00083
47. WATER + SANITARY SERVICES								
48. 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	0.01093	0.00017	0.00008	0.06574	0.00874	0.00009
2. COAL MINING (UNDERGROUND)	0.00376	0.00299	0.00547	0.00045	0.00263	0.00410	0.00946	0.00251
3. COAL MINING (STRIP + AUGER)	0.00113	0.00076	0.00201	0.00059	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	0.00097	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 (DAIRIES)	0.00002	0.00002	0.00733	0.00011	0.00000	0.00002	0.00001	0.00011
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00002	0.00011	1.00114	0.00012	0.00000	0.00002	0.00001	0.00012
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00002	0.00007	0.00001	1.00811	0.00000	0.00000	0.00001	0.00008
13. APPAREL + ACCESSORIES	0.00004	0.00001	0.00001	0.00127	1.00000	0.00000	0.00001	0.00008
14. LOGGING + SAWMILLS	0.00135	0.00187	0.00018	0.00009	0.00048	1.19631	0.00002	0.00002
15. FURNITURE + OTHER WOOD FABRICATION	0.00046	0.00059	0.00017	0.00006	0.00001	0.00016	0.15678	0.00011
16. PRINTING + PUBLISHING	0.00365	0.00511	0.00374	0.01672	0.00608	0.00146	0.00241	1.27567
17. CHEMICALS	0.00125	0.00173	0.00043	0.00333	0.00029	0.00066	0.00686	0.00160
18. PETROLEUM	0.00055	0.00067	0.00043	0.01052	0.00032	0.00005	0.00056	0.00029
19. GLASS	0.00272	0.00362	0.00054	0.00054	0.00005	0.00006	0.00143	0.00029
20. STONE + CLAY PRODUCTS	0.00093	0.00083	0.00047	0.00905	0.00072	0.00124	0.00061	0.00056
21. FABRICATED METAL PRODUCTS	0.00127	0.00196	0.00065	0.00078	0.00165	0.00631	0.01224	0.00050
22. MACHINERY (EXCEPT ELECTRICAL)	0.00011	0.00037	0.00012	0.00021	0.00018	0.00032	0.00077	0.00008
23. ELECTRICAL MACHINERY + APPARATUS	0.00022	0.00035	0.00035	0.00021	0.00027	0.00019	0.00020	0.00030
24. TRANSPORTATION EQUIPMENT	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	0.00003	0.00004	0.00003
26. INSTRUMENTS + RELATED PRODUCTS	0.00134	0.00290	0.00335	0.00924	0.00653	0.00390	0.00154	0.00049
27. ALL OTHER MANUFACTURING	0.00018	0.00467	0.00024	0.00323	0.00010	0.00015	0.00008	0.00025
28. EATING + DRINKING ESTABLISHMENTS	0.00843	0.00329	0.02900	0.01561	0.00457	0.00978	0.00054	0.00800
29. WHOLESALE TRADE	0.00016	0.00020	0.00018	0.00061	0.00022	0.00008	0.00009	0.00484
30. RETAIL FOOD STORES	0.00646	0.00527	0.00666	0.00796	0.00064	0.00604	0.00193	0.00406
31. RETAIL GASOLINE SERVICE STATIONS	0.00670	0.00338	0.01090	0.00228	0.00048	0.01105	0.00031	0.02733
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	0.00346
34. OTHER FINANCE	0.00671	0.00103	0.02091	0.01609	0.01107	0.02618	0.00858	0.01808
35. INSURANCE AGENTS + BROKERS	0.00261	0.00541	0.00100	0.00064	0.00052	0.01594	0.00248	0.02746
36. REAL ESTATE	0.00078	0.00012	0.00170	0.00012	0.00090	0.01390	0.00232	0.00433
37. ALL OTHER FIN, INSUR, + REAL ESTATE	0.00012	0.00013	0.00016	0.00191	0.00012	0.00067	0.00028	0.00034
38. HOTELS + OTHER LODGING PLACES	0.01024	0.00022	0.00177	0.00357	0.00018	0.01049	0.00366	0.00549
39. MEDICAL + LEGAL SERVICES	0.00018	0.00085	0.00084	0.00021	0.00016	0.00035	0.00038	0.00161
40. EDUCATIONAL SERVICES	0.00594	0.00439	0.00307	0.01023	0.00790	0.01788	0.02201	0.03687
41. ALL OTHER SERVICES	0.00623	0.00787	0.00101	0.00048	0.00048	0.00349	0.00201	0.03687
42. RAILROADS + WAREHOUSING	0.01395	0.01176	0.00378	0.01192	0.00098	0.01008	0.00457	0.00871
43. TRUCKING + TRANSPORTATION	0.00858	0.00335	0.00426	0.01044	0.00218	0.00470	0.00305	0.00539
44. ALL OTHER TRANSPORTATION	0.00384	0.00395	0.00746	0.01436	0.02531	0.01110	0.00645	0.01347
45. COMMUNICATIONS	0.01501	0.00940	0.02684	0.00421	0.00959	0.01305	0.00786	0.00657
46. ELECTRIC COMPANIES + SYSTEMS	0.00512	0.00370	0.02560	0.00425	0.00445	0.00439	0.00848	0.00750
47. GAS COMPANIES AND SERVICES	0.00195	0.00119	0.00136	0.00787	0.00095	0.00074	0.00305	0.00142
48. WATER + SANITARY SERVICES								
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	0.00180	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)	0.00105	0.00080	0.00026	0.00062	0.00029	0.00933	0.00028	0.00055
8. SPECIAL TRADES CONTRACTORS	0.01080	0.00008	0.00216	0.00385	0.00006	0.00019	0.00005	0.00075
9. FOOD + KINDRED PRODUCTS (N.E.C.)	0.00039	0.00008	0.00048	0.00013	0.00006	0.00008	0.00002	0.00006
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00002	0.00002	0.00001	0.00003	0.00001	0.00002	0.00001	0.00002
11. FOOD + KINDRED PRODUCTS (BAKRIES)	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
12. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00001	0.00003	0.00001	0.00002	0.00001	0.00001	0.00001	0.00002
13. APPAREL + ACCESSORIES	0.00004	0.00003	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
14. LOGGING + SAWMILLS	0.00054	0.00158	0.00055	0.00064	0.00040	0.00013	0.00006	0.00031
15. FURNITURE + OTHER WOOD FABRICATION	0.00003	0.00018	0.00005	0.00011	0.00002	0.00004	0.00007	0.00107
16. PRINTING + PUBLISHING	0.00182	0.00288	0.00493	0.00738	0.00053	0.00229	0.00496	0.00242
17. CHEMICALS	1.13835	0.04619	0.00234	0.00678	0.00058	0.00249	0.00064	0.00279
18. PETROLEUM	0.00291	1.02671	0.00049	0.04206	0.00032	0.00129	0.00021	0.00035
19. GLASS	0.00101	0.00011	1.02796	0.00017	0.00005	0.00006	0.00003	0.00009
20. STONE + CLAY PRODUCTS	0.00133	0.00261	0.00444	1.02280	0.00037	0.00072	0.00020	0.00044
21. FABRICATED METAL PRODUCTS	0.00163	0.00216	0.00291	0.00291	1.00296	0.00072	0.00269	0.15542
22. MACHINERY (EXCEPT ELECTRICAL)	0.00440	0.00894	0.00221	0.01826	0.00151	1.00128	0.02164	0.00086
23. ELECTRICAL MACHINERY + APPARATUS	0.00033	0.00050	0.00082	0.00082	0.00138	0.00173	1.00020	0.00455
24. TRANSPORTATION EQUIPMENT	0.00100	0.00027	0.00024	0.00086	0.00038	0.00017	0.00115	1.00245
25. INSTRUMENTS + RELATED PRODUCTS	0.00005	0.00010	0.00005	0.00005	0.00014	0.00011	0.00006	0.00005
26. ALL OTHER MANUFACTURING	0.00375	0.00086	0.00003	0.00020	0.00003	0.00001	0.00004	0.00271
27. EATING + DRINKING ESTABLISHMENTS	0.01068	0.00198	0.04152	0.00921	0.00048	0.00502	0.00053	0.00179
28. WHOLESALE TRADE	0.00035	0.00046	0.00019	0.00021	0.00008	0.00039	0.00025	0.00044
29. RETAIL FOOD STORES	0.00926	0.02852	0.01827	0.02230	0.00564	0.01379	0.00932	0.00681
30. RETAIL GASOLINE SERVICE STATIONS	0.00008	0.00012	0.00018	0.00028	0.00003	0.00009	0.00018	0.00010
31. ALL OTHER RETAIL	0.00042	0.00169	0.00044	0.00669	0.00015	0.00024	0.00068	0.00045
32. BANKING	0.00312	0.00436	0.00322	0.01332	0.00331	0.00364	0.00240	0.00575
33. OTHER FINANCE AGENTS + BROKERS	0.00116	0.00343	0.00020	0.00472	0.00136	0.00088	0.00043	0.00177
34. INSURANCE	0.00017	0.00034	0.00017	0.00044	0.00010	0.00096	0.00011	0.00012
35. REAL ESTATE	0.00447	0.00094	0.00064	0.00064	0.00017	0.00467	0.00040	0.00263
36. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00356	0.00016	0.00016	0.00112	0.00128	0.00296	0.00009	0.00104
37. HOTELS + OTHER LODGING PLACES	0.00047	0.00041	0.00031	0.00016	0.00010	0.00019	0.00031	0.00080
38. MEDICAL + LEGAL SERVICES	0.00403	0.00403	0.00177	0.00694	0.00226	0.00207	0.00013	0.00426
39. EDUCATIONAL SERVICES	0.00012	0.00021	0.00031	0.00042	0.00021	0.00014	0.00012	0.00115
40. ALL OTHER SERVICES	0.00588	0.01007	0.01535	0.02093	0.00091	0.00588	0.00476	0.01080
41. RAILROADS	0.00942	0.00096	0.00096	0.00469	0.00057	0.00108	0.00095	0.00234
42. TRUCKING + WAREHOUSING	0.00576	0.04257	0.00610	0.03827	0.00922	0.00476	0.00111	0.00517
43. ALL OTHER TRANSPORTATION	0.00518	0.01515	0.00128	0.00398	0.00106	0.00136	0.00072	0.00496
44. COMMUNICATIONS	0.00575	0.03103	0.00425	0.00681	0.00391	0.00359	0.00477	0.00738
45. ELECTRIC COMPANIES + SYSTEMS	0.0167	0.01072	0.01354	0.01358	0.00766	0.01163	0.00674	0.02678
46. GAS COMPANIES AND SYSTEMS	0.01567	0.02232	0.03441	0.02899	0.00389	0.01180	0.00510	0.01449
47. WATER + SANITARY SERVICES	0.00240	0.00066	0.00056	0.00084	0.00007	0.00134	0.00025	0.00399
48. 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
	TRANSPOT EQUIPM	INSTRUM'S EPRDUCT	ALL OTHR MANUF	EATING & DRNG ES	WHOLESALE TRADE	RETAIL FOOD STR	RETAIL GAS STAT	ALL OTHR RETAIL
1. AGRICULTURE	0.00004	0.00005	0.00704	0.02338	0.00018	0.00016	0.00003	0.00029
2. COAL MINING (UNDERGROUND)	0.00434	0.00047	0.00551	0.00328	0.00500	0.00592	0.00340	0.00295
3. COAL MINING (STRIP + AUGER)	0.00075	0.00021	0.001346	0.00136	0.00144	0.00220	0.00100	0.00278
4. PETROLEUM + NATURAL GAS	0.00064	0.00045	0.000397	0.00227	0.00210	0.00210	0.00281	0.00147
5. ALL OTHER MINING	0.00325	0.00007	0.00060	0.00059	0.00014	0.00026	0.00204	0.00043
6. GENERAL CONTRACTORS (BUILDING)	0.00014	0.00001	0.000272	0.00020	0.00007	0.00062	0.00034	0.00075
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00025	0.00020	0.000272	0.00026	0.00026	0.00062	0.00054	0.00075
8. SPECIAL TRADES CONTRACTORS	0.00046	0.00019	0.02478	0.00092	0.00181	0.00500	0.00055	0.00863
9. FOOD + KINDRED PROD-MEATS + N.E.C.	0.00002	0.00004	0.01121	0.04779	0.00021	0.00009	0.00002	0.00074
10. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00001	0.00000	0.00001	0.03108	0.00007	0.00007	0.00001	0.00074
11. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00001	0.00000	0.00001	0.03446	0.00008	0.00002	0.00001	0.00067
12. APPAREL + ACCESSORIES	0.00000	0.00000	0.00000	0.02168	0.00005	0.00001	0.00001	0.00003
13. LOGGING + SAWMILLS	0.00021	0.00000	0.00069	0.00029	0.00014	0.00025	0.00010	0.00050
14. FURNITURE + OTHER WOOD FABRICATION	0.00012	0.00003	0.00008	0.00064	0.00020	0.00034	0.00012	0.00136
15. PRINTING + PUBLISHING	0.00095	0.00129	0.00345	0.00277	0.00194	0.04925	0.00550	0.04095
16. CHEMICALS	0.00092	0.00011	0.00674	0.00042	0.00210	0.00040	0.00132	0.00050
17. PETROLEUM	0.00028	0.00010	0.00140	0.00020	0.00052	0.00060	0.02476	0.00049
18. GLASS	0.00002	0.00001	0.00085	0.00122	0.00024	0.00005	0.00004	0.01004
19. STONE + CLAY PRODUCTS	0.00030	0.00008	0.00106	0.00056	0.00036	0.00103	0.00113	0.00071
20. PRIMARY METAL PRODUCTS	0.09445	0.00035	0.000485	0.00045	0.00100	0.00045	0.00031	0.00068
21. FABRICATED METAL PRODUCTS	0.00086	0.00029	0.03227	0.00035	0.00062	0.00086	0.00047	0.00013
22. MACHINERY (EXCEPT ELECTRICAL)	0.00023	0.00007	0.000238	0.00005	0.00010	0.00032	0.00020	0.00039
23. ELECTRICAL MACHINERY + APPARATUS	0.01204	0.00006	0.000238	0.00018	0.00027	0.00032	0.00020	0.00039
24. TRANSPORTATION EQUIPMENT	1.00022	0.00001	0.00046	0.00003	0.00029	0.00003	0.00011	0.00011
25. INSTRUMENTS + RELATED PRODUCTS	0.00004	1.000120	0.00307	0.00024	0.00004	0.00003	0.00004	0.00019
26. ALL OTHER MANUFACTURING	0.00048	0.00038	1.00736	0.00068	0.00135	0.00526	0.00032	0.00019
27. EATING + DRINKING ESTABLISHMENTS	0.00012	0.00002	0.00011	1.00842	0.00212	0.00040	0.00023	0.00086
28. WHOLESALE TRADE	0.00258	0.00054	0.000447	0.06061	1.01766	0.01081	0.01526	0.00619
29. RETAIL FOOD STORES	0.00004	0.00005	0.00013	0.00412	0.00025	1.00183	0.00020	0.00146
30. RETAIL GASOLINE SERVICE STATIONS	0.00033	0.00018	0.00106	0.00160	0.00916	0.00275	1.00021	0.00454
31. ALL OTHER RETAIL	0.00155	0.00025	0.00091	0.00235	0.00252	0.00270	0.00264	1.01054
32. BANKING	0.00160	0.00038	0.00343	0.00470	0.00480	0.00337	0.00461	0.01166
33. OTHER FINANCE	0.00005	0.00002	0.00037	0.00198	0.00686	0.01129	0.00032	0.00382
34. INSURANCE AGENTS + BROKERS	0.00365	0.00228	0.00356	0.01012	0.01315	0.01959	0.00097	0.01851
35. REAL ESTATE	0.00020	0.00013	0.00212	0.00162	0.00055	0.06845	0.00697	0.00260
36. ALL OTHER FIN. INSUR. + REAL ESTATE	0.00041	0.00022	0.00056	0.00094	0.00326	0.00184	0.00120	0.00180
37. HOTELS + OTHER LODGING PLACES	0.00006	0.00005	0.00014	0.00017	0.00114	0.00023	0.00010	0.00176
38. MEDICAL + LEGAL SERVICES	0.00125	0.00017	0.00018	0.000142	0.00375	0.00246	0.00146	0.00760
39. EDUCATIONAL SERVICES	0.00015	0.00010	0.00016	0.00027	0.00058	0.00063	0.00034	0.00151
40. ALL OTHER SERVICES	0.00615	0.000524	0.00776	0.00951	0.00944	0.03139	0.01757	0.05012
41. RAILROADS	0.01485	0.00021	0.00458	0.00127	0.00576	0.00075	0.00216	0.00346
42. TRUCKING + WAREHOUSING	0.00203	0.00503	0.00570	0.00399	0.01654	0.00846	0.02702	0.01818
43. ALL OTHER TRANSPORTATION	0.00050	0.00443	0.00248	0.00236	0.01112	0.00202	0.00246	0.00378
44. COMMUNICATIONS	0.00756	0.00174	0.00329	0.00582	0.00853	0.01772	0.01586	0.00680
45. ELECTRIC COMPANIES + SYSTEMS	0.00573	0.00223	0.00738	0.01427	0.01874	0.02950	0.01130	0.01156
46. GAS COMPANIES AND SYSTEMS	0.00635	0.00277	0.00475	0.02348	0.01788	0.02111	0.01016	0.01152
47. WATER + SANITARY SERVICES	0.00191	0.00172	0.00055	0.00199	0.00056	0.00280	0.00261	0.00241
48.								
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

	BANKING	OTHER FINANCE	INSURANCE AGENTS	REAL EST	ALL OTHER FIRE	HOTELS & LODGING	MEDICAL & LEGAL	EDUCATIONAL SERVICES
	33	34	35	36	37	38	39	40
1. AGRICULTURE (UNDERGROUND)	0.000064	0.000077	0.00010	0.00016	0.00064	0.00981	0.00150	0.00037
2. COAL MINING (STRIP + AUGER)	0.00021	0.00017	0.00014	0.00054	0.00046	0.03175	0.00045	0.00358
3. PETROLEUM + NATURAL GAS	0.00171	0.00060	0.00053	0.00167	0.00122	0.00245	0.00100	0.00133
4. ALL OTHER MINING	0.00015	0.00009	0.00003	0.00122	0.00012	0.00105	0.00022	0.00119
5. GENERAL CONTRACTORS (BUILDING)	0.00087	0.00064	0.00011	0.04749	0.00017	0.00237	0.00008	0.02003
6. GENERAL CONTRACTORS (NON-BUILDING)	0.00026	0.00032	0.00008	0.00326	0.00020	0.00687	0.00027	0.02368
7. SPECIAL TRADES CONTRACTORS	0.00577	0.00125	0.00044	0.03519	0.00248	0.04145	0.00525	0.00886
8. FOOD + KINDRED PRODUCTS (DAIRIES)	0.00007	0.00017	0.00022	0.00014	0.00186	0.00027	0.00435	0.00060
9. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00002	0.00007	0.00010	0.00008	0.00052	0.00009	0.00115	0.00073
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00003	0.00007	0.00010	0.00009	0.00052	0.00008	0.00115	0.00069
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00002	0.00005	0.00007	0.00005	0.00034	0.00007	0.00077	0.00087
12. APPAREL + ACCESSORIES	0.00005	0.00012	0.00013	0.00003	0.00184	0.00048	0.00437	0.00002
13. LOGGING + SAWMILLS	0.00015	0.00004	0.00002	0.00102	0.00009	0.00127	0.00017	0.00042
14. FURNITURE + OTHER WOOD FABRICATION	0.00005	0.00004	0.00001	0.00030	0.00007	0.00014	0.00012	0.00017
15. PRINTING + PUBLISHING	0.00518	0.01942	0.00311	0.03367	0.00716	0.00773	0.00260	0.00411
16. CHEMICALS	0.00044	0.00057	0.00023	0.00026	0.00207	0.00101	0.00462	0.00051
17. PETROLEUM	0.00007	0.00011	0.00009	0.00019	0.00108	0.00023	0.00025	0.00034
18. GLASS	0.00044	0.00053	0.00018	0.00686	0.00041	0.00254	0.00036	0.00445
19. STONE + CLAY PRODUCTS	0.00275	0.00077	0.00011	0.00226	0.00029	0.00161	0.00035	0.00112
20. PRIMARY METAL PRODUCTS	0.00150	0.00067	0.00015	0.00408	0.00045	0.00357	0.00066	0.00054
21. FABRICATED METAL PRODUCTS	0.00023	0.00013	0.00002	0.00033	0.00006	0.00039	0.00028	0.00031
22. MACHINERY (EXCEPT ELECTRICAL)	0.00031	0.00002	0.00001	0.00005	0.00002	0.00007	0.00002	0.00002
23. ELECTRICAL MACHINERY + APPARATUS	0.00004	0.00006	0.00021	0.00004	0.00058	0.00006	0.00134	0.00003
24. TRANSPORTATION EQUIPMENT	0.00002	0.00002	0.00001	0.00005	0.00002	0.00007	0.00002	0.00002
25. INSTRUMENTS + RELATED PRODUCTS	0.00004	0.00006	0.00021	0.00004	0.00058	0.00006	0.00134	0.00003
26. WHOLESALE TRADE	0.00025	0.00086	0.00196	0.00194	0.00035	0.00040	0.00015	0.00184
27. EATING + DRINKING ESTABLISHMENTS	0.00223	0.00318	0.00121	0.03156	0.00631	0.04315	0.01335	0.01233
28. RETAIL FOOD STORES	0.00035	0.00076	0.00019	0.00121	0.00132	0.00030	0.00263	0.00016
29. WHOLESALE TRADE	0.00045	0.00045	0.00078	0.00185	0.00102	0.00917	0.00205	0.00068
30. RETAIL GASOLINE SERVICE STATIONS	0.00357	0.00685	0.00211	0.00947	0.01183	0.01184	0.00893	0.01249
31. ALL OTHER RETAIL	1.00101	0.06853	0.00340	0.01056	0.00335	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. OTHER FINANCE	0.01158	0.00770	0.00448	0.00585	0.01051	0.03280	0.00361	0.00846
34. INSURANCE AGENTS + BROKERS	0.00617	0.01104	0.00210	1.06922	0.00303	0.01050	0.00084	0.00135
35. REAL ESTATE	0.00557	0.00127	0.06682	0.00463	1.00160	0.00305	0.00135	0.00075
36. REAL ESTATE	0.00028	0.00021	0.00059	0.00188	0.00054	1.00030	0.00047	0.00065
37. ALL OTHER FIN, INSUR, + REAL ESTATE	0.01065	0.02911	0.03026	0.02911	0.43493	0.00763	1.03456	0.00413
38. HOTELS + OTHER LODGING PLACES	0.01058	0.01733	0.00603	0.02629	0.01263	0.03863	0.00868	0.00934
39. MEDICAL + LEGAL SERVICES	0.00110	0.00360	0.00081	0.00185	0.00126	0.05541	0.00471	0.00849
40. EDUCATIONAL SERVICES	0.03986	0.07344	0.01591	0.09601	0.03494	0.08177	0.03361	1.02379
41. ALL OTHER SERVICES	0.00022	0.00028	0.00013	0.00068	0.00065	0.00196	0.00112	0.00049
42. RAILROADS	0.00120	0.00081	0.00033	0.00458	0.00136	0.000615	0.00207	0.00480
43. TRUCKING + WAREHOUSING	0.03640	0.00019	0.00079	0.00044	0.00189	0.000386	0.00174	0.00168
44. ALL OTHER TRANSPORTATION	0.01058	0.01733	0.00603	0.02629	0.01263	0.03863	0.00471	0.00934
45. COMMUNICATIONS	0.00242	0.00203	0.00157	0.00598	0.00533	0.05541	0.00471	0.00849
46. ELECTRIC COMPANIES + SYSTEMS	0.00424	0.00305	0.00537	0.01529	0.01211	0.02336	0.00953	0.01114
47. GAS COMPANIES AND SYSTEMS	0.00118	0.00064	0.00030	0.00292	0.00088	0.00831	0.00170	0.00244
48. WATER + SANITARY SERVICES								
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 CO. SYSTEMS	GAS CO. SYSTEMS	WATER & SANITARY
1. AGRICULTURE (UNDERGROUND)	0.00005	0.00010	0.00004	0.00019	0.00005	0.00018	0.00008	0.00024
2. COAL MINING (STRIP + AUGER)	0.00148	0.00135	0.00130	0.00292	0.00205	0.20102	0.00411	0.01245
3. COAL MINING (NATURAL GAS)	0.00045	0.00033	0.00044	0.00066	0.00064	0.07438	0.00031	0.00398
4. PETROLEUM + NATURAL GAS	0.00160	0.00084	0.00067	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	0.03466
6. GENERAL CONTRACTORS (BUILDING)	0.00072	0.00337	0.00039	0.00040	0.00011	0.00014	0.00033	0.00301
7. GENERAL CONTRACTORS (NON-BUILDING)	0.00403	0.00024	0.00220	0.00477	0.00059	0.00094	0.00083	0.00527
8. SPECIAL TRADES CONTRACTORS	0.00005	0.00002	0.00005	0.00026	0.00004	0.00006	0.00013	0.00006
9. FOOD + KINDRED PROD-MEATS + N.E.-C.	0.00004	0.00001	0.00002	0.00001	0.00002	0.00003	0.00008	0.00005
10. FOOD + KINDRED PRODUCTS (BAKERIES)	0.00010	0.00001	0.00003	0.00001	0.00003	0.00004	0.00008	0.00005
11. FOOD + KINDRED PRODUCTS (BEVERAGES)	0.00004	0.00001	0.00002	0.00001	0.00002	0.00002	0.00005	0.00004
12. APPAREL + ACCESSORIES	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00009
13. LOGGING + SAWMILLS	0.00015	0.00095	0.00009	0.00031	0.00008	0.00256	0.00005	0.00074
14. FURNITURE + OTHER WOOD FABRICATION	0.00023	0.00003	0.00008	0.00104	0.00006	0.00015	0.00012	0.00025
15. PRINTING + PUBLISHING	0.02633	0.00061	0.01037	0.00132	0.00467	0.00419	0.00249	0.00396
16. CHEMICALS	0.00556	0.00061	0.00035	0.00113	0.00054	0.00027	0.00012	0.02577
17. PETROLEUM	0.00212	0.00925	0.00207	0.00751	0.00377	0.00322	0.00026	0.01220
18. GLASS	0.00022	0.00005	0.00010	0.00005	0.00002	0.00003	0.00004	0.00051
19. STONE + CLAY PRODUCTS	0.00052	0.00157	0.00072	0.00045	0.02384	0.00417	0.00148	0.01086
20. PRIMARY METAL PRODUCTS	0.00229	0.00691	0.00052	0.06949	0.00244	0.00134	0.00078	0.00422
21. FABRICATED METAL PRODUCTS	0.00157	0.00171	0.00036	0.02506	0.00086	0.00217	0.00152	0.00198
22. MACHINERY (EXCEPT ELECTRICAL)	0.00107	0.00171	0.00018	0.00454	0.00021	0.00028	0.00006	0.00114
23. ELECTRICAL MACHINERY + APPARATUS	0.00659	0.00025	0.00009	0.00025	0.00386	0.00053	0.00007	0.00704
24. TRANSPORTATION EQUIPMENT	0.00025	0.00808	0.00067	0.00017	0.00010	0.00027	0.00004	0.00011
25. INSTRUMENTS + RELATED PRODUCTS	0.00016	0.00003	0.00008	0.00037	0.00010	0.00004	0.00092	0.00017
26. ALL OTHER MANUFACTURING	0.00035	0.00048	0.00068	0.02163	0.00058	0.00044	0.00065	0.00104
27. EATING + DRINKING ESTABLISHMENTS	0.00044	0.00008	0.00068	0.00028	0.00067	0.00093	0.00231	0.00054
28. WHOLESALE TRADE	0.02113	0.00221	0.05938	0.00847	0.00356	0.00867	0.00539	0.02364
29. RETAIL FOOD STORES	0.00094	0.00003	0.00038	0.00005	0.00017	0.00016	0.00011	0.00015
30. RETAIL GASOLINE SERVICE STATIONS	0.00366	0.00020	0.00475	0.00237	0.00096	0.00039	0.00192	0.00306
31. ALL OTHER RETAIL	0.01598	0.00272	0.00708	0.00123	0.00139	0.00164	0.00227	0.00336
32. BANKING	0.00616	0.00044	0.00504	0.00860	0.00352	0.00175	0.00211	0.00241
33. OTHER FINANCE	0.00033	0.00009	0.00091	0.00027	0.00007	0.00040	0.00044	0.00041
34. INSURANCE AGENTS + BROKERS	0.00883	0.02223	0.02260	0.00440	0.00263	0.00516	0.00973	0.01092
35. REAL ESTATE	0.00685	0.00028	0.00165	0.00060	0.00145	0.00114	0.00593	0.00127
36. ALL OTHER FIN. + REAL ESTATE	0.00180	0.00156	0.00176	0.00061	0.00180	0.00136	0.00200	0.00252
37. HOTELS + OTHER LODGING PLACES	0.00104	0.00018	0.00068	0.00046	0.00043	0.00064	0.00117	0.00021
38. MEDICAL + LEGAL SERVICES	0.00360	0.00286	0.00132	0.00129	0.00048	0.00312	0.00312	0.00233
39. EDUCATIONAL SERVICES	0.01937	0.00010	0.00008	0.00029	0.00048	0.00015	0.00015	0.00015
40. ALL OTHER SERVICES	0.03345	0.00518	0.00022	0.01448	0.02534	0.00736	0.00640	0.00569
41. RAILROADS	0.00086	1.00203	0.00162	0.00083	0.00892	0.01413	0.00169	0.00800
42. TRUCKING + WAREHOUSING	0.00067	0.00090	1.00183	0.00381	0.00963	0.02657	0.00220	0.00134
43. ALL OTHER TRANSPORTATION	0.00502	0.00068	0.00379	1.00501	0.00663	0.01128	0.00856	0.01204
44. COMMUNICATIONS	0.00983	0.00468	0.00552	0.00650	1.00196	0.00578	0.00497	0.01461
45. ELECTRIC COMPANIES + SYSTEMS	0.00512	0.00410	0.00552	0.00418	0.00843	1.03990	0.00208	0.05325
46. GAS COMPANIES AND SYSTEMS	0.01216	0.500172	0.00528	0.00375	0.00722	0.00193	1.00663	0.00622
47. WATER + SANITARY SERVICES	0.00303	0.500041	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

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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	15	Percent to West Virginia Sectors
Manufacturing		
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.

Question 8

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

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"

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

Example: Current Expenses

Sector	.10	Percent From West Virginia Establishments
Manufacturing		
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	.03	%
15. Furniture & Other Wood Fabrication		%
16. Printing & Publishing		%
17. Chemicals	.02	100 %
18. Petroleum		%
19. Glass		%
20. Stone & Clay Products		%
21. Primary Metal Products		%
22. Fabricated Metal Products		%
23. Machinery (except electrical)		%
24. Electrical Machinery & Apparatus		%
25. Transportation Equipment	.01	%
26. Instruments & Related Products	X .04	80 %
27. All Other Manufacturing		%

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

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.

Questions 9 & 10

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 11, 12, & 13

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

Question 14

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

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			%
2. Coal Mines (underground)			%
3. Coal Mines (strip and auger)			%
4. Petroleum & Natural Gas			%
5. All Other Mining			%
Contractors			
6. General Contractors (building)			%
7. General Contractors (non-building)			%
8. Special Trade Contractors			%
Manufacturing			
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			%
15. Furniture & Other Wood Fabrication			%
16. Printing & Publishing			%
17. Chemicals			%
18. Petroleum			%
19. Glass			%
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			
28. Eating and Drinking Establishments			%
29. Wholesale Trade			%
30. Retail Food Stores			%
31. Retail Gasoline Service Stations			%
32. All Other Retail			%
Services			
33. Banking			%
34. Other Finance			%
35. Insurance Agents & Brokers			%
36. Real Estate			%
37. All Other Finance, Ins. & Real Estate			%
38. Hotels & Other Lodging Places			%
39. Medical & Legal Services			%
40. Educational Services			%
41. All Other Services			%
Transportation			
42. Railroads			%
43. Trucking & Warehousing			%
44. All Other Transportation			%
44a. Company-Owned Transportation			%
Communications & Utilities			
45. Communications			%
46. Electric Companies & Systems			%
47. Gas Companies & Systems			%
48. Water & Sanitary Services			%
Final Payments			
49. Wages & Salaries			
50. Local Government (taxes)			
51. State Government (taxes)			
52. Federal Government (taxes)			
53. Profits, Retained Earnings			
54. Depreciation Allowance			
Typical Dollar of Expenses		<u>\$1.00</u>	

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 100%
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 100%
14. What percent of your expenditures on expansion and replacement capital can be attributed to the following *West Virginia* sectors:

Sector	Expansion Capital	Replacement Capital
5. Mining (other than coal)		
Contractors		
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%	100%

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? _____ %

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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)? _____

7. How much of a *typical* dollar of your establishment's sales went to the following sectors:

Sector			Percent To WEST VIRGINIA Sectors
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"/>	%
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 Sales			
49. Households	_____	<input type="text"/>	%
50. Local Government		<input type="text"/>	%
51. State Government		<input type="text"/>	%
52. Federal Government		<input type="text"/>	%
Typical Dollar of Sales		<u>\$1.00</u>	

7a. What per cent of your total sales typically pass through a wholesaler? _____%