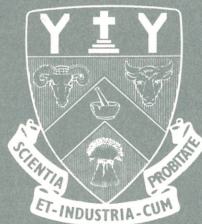


AGRICULTURAL
ECONOMICS
RESEARCH UNIT



Lincoln College

INTER-INDUSTRY STRUCTURE
OF THE NEW ZEALAND
ECONOMY 1961-5

by

B. J. ROSS and B. P. PHILPOTT

STUDIES IN THE STRUCTURAL DEVELOPMENT OF THE
NEW ZEALAND ECONOMY : No. 2

*

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THE INTERINDUSTRY STRUCTURE
OF THE NEW ZEALAND ECONOMY

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of the New Zealand Economy : No. 2

Agricultural Economics Research Unit Research Report No. 49

THE AGRICULTURAL ECONOMICS RESEARCH UNIT

THE Unit was established in 1962 at Lincoln College with an annual grant from the Department of Scientific and Industrial Research. This general grant has been supplemented by grants from the Wool Research Organisation, the Nuffield Foundation and the New Zealand Forest Service for specific research projects.

The Unit has on hand a long-term programme of research in the fields of agricultural marketing and agricultural production, resource economics, and the relationship between agriculture and the general economy. The results of these research studies will be published as Unit reports from time to time as projects are completed. In addition, it is intended to produce other bulletins which may range from discussion papers outlining proposed studies to reprints of papers published or delivered elsewhere. All these publications will be available at a small charge. For list of publications see inside back cover.

Director

Professor B. P. Philpott, M.Com., M.A. (Leeds), A.R.A.N.Z.

Senior Research Economist

R. W. M. Johnson, M.Agr.Sc., B.Litt. (Oxon.)

Research Economists

Mrs M. J. Woods, B.Sc. B. J. Ross, M.Agr.Sc.
T. W. Francis, B.A.

Assistant Research Economists

D. D. Hussey, B.Agr.Sc. D. R. Edwards, B.Agr.Sc.
D. McClatchy, B.Agr.Sc. H. J. Plunkett, B.Agr.Sc.
A. C. Lewis, B.Agr.Sc. G. W. Kitson, B.Hort.Sc.

UNIVERSITY LECTURING STAFF ASSOCIATED WITH THE UNIT'S RESEARCH PROJECTS:

J. D. Stewart, M.A., Ph.D. (Reading)
Professor of Farm Management

A. T. G. McArthur, B.Sc. (Agr.) (Lond.), M.Agr.Sc.
Senior Lecturer in Rural Education

R. C. Jensen, M.Agr.Econ. (N.E.), A.Ed., Q.D.A.
Senior Lecturer in Economics

N. W. Taylor, M.Agr.Sc.
Lecturer in Farm Management

R. G. Cant, M.A., Ph.D. (Malaya)
Lecturer in Geography, Canterbury

C. A. Yandle, B.Agr.Sc.
Assistant Lecturer in Economics

P R E F A C E

This Report is the second in our series entitled "Studies in the Structural Development of the New Zealand Economy" and it follows on directly from the first report in which we gave a general outline of the Unit's programme of research in this field and described the use of input-output models for economic planning and projection, using by way of example, a simple three sector model of the economy.

In this Report we present our estimates of a sixteen sector interindustry table of the economy for each of the years 1961-1965, and describe the methods used to derive these estimates.

Since our first Report was published the National Development Conference has been inaugurated and the approach to projection and planning which we set down in that Report has been largely adopted by the Conference in drawing up a consistent sectoral projection of the New Zealand economy for 1972/73 and 1978/79.

There has been a considerable delay in publishing the estimates given in the present Report, but we feel we might be excused, as the delay has been largely occasioned by the diversion of time and effort to the job of adapting the model and using the results for the important practical policy purposes of the National Development Conference.

The help and advice we have received from our colleagues and other interested individuals has greatly eased our task in the compilation of the tables. In particular, we wish to thank Mr G.E. Jackson, Head of the Inter-industries Studies Branch of the Department of Statistics, and Mr C. Gillion of the New Zealand Institute of Economic Research.

B.P. Philpott

Lincoln College,
March 1969.

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CHAPTER I

INTERINDUSTRY ANALYSIS

The main purpose of this bulletin is to present provisional estimates of 16 sector interindustry, or input-output, tables of the New Zealand economy for each of the five years 1960-61 to 1964-65. These tables are much less detailed than the 110 sector estimates published by the Government Statistician relating to the year ended March 31st 1960,* but it is hoped that people interested in this field will find use for tables of more recent years which also form a continuous series.

Before presenting the tables themselves, however, it may be useful to describe briefly what an input-output table is, and how interindustry analysis can be used. A similar description, together with a more detailed account of the role of interindustry analysis in policy formation may be found in the first bulletin of this series,** but some recapitulation is worthwhile here.

* Department of Statistics, Inter-industry Study of the New Zealand Economy 1959-60: Part 1. Transactions Between 110 Productive Industries at Producers' Prices. 1966.

** B.P. Philpott and B.J. Ross, Input-Output Models for Projecting and Planning the Economy, Agricultural Economics Research Unit, Research Report No. 41, 1968.

Current Transactions Table

An input-output table is an attempt to show in money terms the major flows of goods and services within an economy during a given time period, usually a year. Read in conjunction with national income accounts, and financial statistics such as may be provided by a flow of funds analysis, an input-output table can give a very good idea of how the economy operated over the chosen time period.

Within the table, each industrial group (or separate industry, according to the degree of detail in the table) has attributed to it a row and a column. The rows show the disposal of the output of each industrial sector: sales of goods and services to other industries to be used in the productive process, sales for final consumption to households and Government, to other countries (exports), and sales of capital goods, such as buildings and machinery, which contribute to production in later time periods.

The columns show the sources of the inputs used by each industry in producing its output: goods and services purchased from other industries, labour services used (expressed in terms of the wages and salaries paid), payments to the owners of the capital assets employed in the industry for the use of their capital and for the risks they sometimes have to bear (valued in terms of the profits earned), depreciation, which is the estimated value of capital used up or worn out by use in the period, and purchases from other countries (imports). As the input columns include profits, which are the difference between costs and the value of output, total inputs used in a sector always equal the value of total output.

As shown in the example below, an input-output table is usually thought of as being divided into four quadrants, within each of which transactions of a basically similar nature are recorded. The origin of the inputs used in any industry is found by reading down the column for that industry, while the disposition of an industry's output is found by reading across the appropriate row.

In Table 1, which is a representation of the New Zealand economy in 1964-65, Quadrant 1 shows the values of the goods and services which flowed between sectors in that year; the outputs of some sectors forming inputs for other sectors. The economy has been divided into three sectors, and the Secondary sector, for example, is shown as selling \$146 mn. worth of goods to the Primary sector, \$420 mn. to itself and \$229 mn. to the Tertiary sector. Commodities which pass from sector to sector in this fashion are known as "intermediate" inputs or outputs, depending on whether they are being examined from the points of view of the purchasing or producing sector. Because it shows all the transactions between sectors, Quadrant 1 is known as the interindustry transactions matrix.

Quadrant 2 shows the consumption of goods and services by final buyers, and the sectors from which purchases are made. Thus the Primary sector is shown as selling \$234 mn. of goods to Households in New Zealand, \$17 mn. to the Government, and \$681 mn. to people in other countries (Exports); \$45 mn. of the sector's output was used to increase the value of stocks held by the sector, and capital goods sold were worth \$14 mn.

TABLE 1

Interindustry Table of Current Transactions, 1964-65

\$mn.	Primary	Secondary	Tertiary	Households	Govt.	Exports	Stock Changes	Capital Formation	Total Outputs
	<u>Quadrant 1</u>			<u>Quadrant 2</u>					
Primary	836.0	182.4	69.2	233.9	16.7	680.8	44.8	14.4	2078.2
Secondary	145.8	419.8	228.9	667.0	67.0	25.5	20.1	693.1	2267.2
Tertiary	208.9	331.8	501.3	1170.6	299.7	125.0	29.1	96.4	2762.8
	<u>Quadrant 3</u>			<u>Quadrant 4</u>					
Wages and Salaries	256.7	565.7	965.8	-	-	-	-	-	1788.2
Other Value Added	468.7	272.3	636.2	-	15.2	-	-	-	1392.4
Net Indirect Tax	9.5	104.3	145.0	44.8	3.7	1.1	-	5.3	313.7
Imports	72.1	333.6	78.9	151.6	55.1	5.1	-	119.9	816.3
Depr'n.	80.5	57.3	137.5	-	-	-	-	-	275.3
Total Inputs	2078.2	2267.2	2762.8	2267.9	457.4	837.5	94.0	929.1	11694.1

It is assumed that the purchases shown in quadrant 2 will not be used to produce further goods and services during the current time period. Capital goods, which form part of the current outputs of the sectors which produce them, and which will be used in the productive process in later periods, are shown in this table solely in relation to the sectors which produce them, not the sectors which purchase them.

Quadrant 3 shows payments made for the use of "primary" inputs used in each sector. Primary inputs (not to be confused with inputs purchased from the Primary sector in the example used here) are those which have not been produced within the system in the time period under consideration, and therefore include such things as labour (wages and salaries), profits (including the incomes of the self-employed), depreciation and imports. Consequently the rows in Quadrant 3 show how the bulk of the primary inputs used in the economy have been divided among the various productive sectors, while the columns in this quadrant show the value of each primary input used by each sector.

Quadrant 4 shows the primary inputs which pass directly into final use, such as imports of consumer goods, together with imports of capital goods. Direct employment of labour by households and non-trading government departments is sometimes included in this quadrant, but in the New Zealand input-output tables separate sectors have been formed to take care of these activities.

Capital Transactions Table

As has already been described, the input-output table is concerned with current transactions involving the sale and

purchase of goods and services to be used within the time period, together with the sale of capital goods which form part of the current output of the industries which produce them. No indication is given as to which sectors have acquired the capital goods made available within a given period, but this additional information is provided in another table known as the "Capital Matrix", of which Table 2 is an example.

TABLE 2

Capital Account Transactions 1964-65

\$mn.	Primary	Secondary	Tertiary	Total Sales
Primary	13.3	0.0	.7	14
Secondary	84.1	88.3	520.7	693
Tertiary	25.1	26.2	44.7	96
Indirect Tax	.6	1.4	2.9	5
Imports	18.0	33.3	68.7	120
Total Purchases	141.1	149.2	637.7	929

The capital matrix is rather similar in construction to the current input-output table, showing the disposal of the output of the capital goods producing sectors across the rows, and the sources of the capital goods acquired by each sector down the columns. For example, of the total production of capital goods by the Secondary sector, worth \$693 mn., \$84.1 mn. was sold to the Primary sector, \$88.3 mn. was sold within the Secondary sector itself and \$520.7 mn. (of which houses formed a significant proportion) went to the Tertiary

sector. Investment, or purchases of capital goods, by the Secondary sector was very much less than the value of capital goods produced by the sector, purchases coming to a total of only \$149.2 mn. In addition to the \$88.3 mn. produced within the sector, \$26.4 mn. was purchased from the Tertiary sector and \$33.3 mn. from abroad (imports), while indirect tax paid on the purchases came to a total of \$1.4 mn. The right-hand column of the capital matrix, showing the total output of capital goods by each sector, is identical to the column showing the production of capital goods in the current input-output table (Table 1).

Input-Output Coefficients.

As described earlier, the values shown in Quadrants 1 and 3 of the current interindustry table (Table 1), show the purchases made by each sector (or more correctly, the money values of all the inputs used), in order to produce its output. Thus output of \$2078 mn. by the Primary sector necessitated purchases of \$836 mn. from itself (i.e. transactions between firms within the sector), \$146 mn. from the Secondary sector and \$209 mn. from Tertiary industries.

Using the information given in the first and third quadrants, it is possible to calculate the value of all the purchases a sector made in a given year for each dollar's worth of output, simply by dividing each input value by the corresponding total output. The resulting values are known as input-output coefficients, and the table of input-output coefficients is known as the technology matrix.

It can be seen from Table 3 that for every dollar's worth of output it produced in 1964-65 the Primary sector

TABLE 3

Input-Output Coefficients 1964-65

	Primary	Secondary	Tertiary
Primary	.402271	.080452	.025047
Secondary	.070157	.185162	.082851
Tertiary	.100520	.146348	.181446
Primary Inputs	.427051	.588038	.710656
Totals	1.000000	1.000000	1.000000

required inputs to the value of about 40 cents from itself, 7 cents from the Secondary sector, 10 cents from the Tertiary sector and almost 43 cents of primary inputs.

If it is assumed that an increase in Primary output would require a proportionate increase in all inputs used by the Primary sector, then, neglecting the effects of possible price changes, multiplication of the input-output coefficients with the output increase will provide a measure of the increased inputs required from each source. Thus a \$20 mn. increase in Primary output would mean an increase in Primary purchases from itself of \$8 mn., and so on.

Interindustry Analysis.

The three tables so far described, i.e. the input-output table, the capital matrix and the table of input-output coefficients, give a detailed picture of the interrelationships between the various sectors of the economy, and for this reason alone they are useful and interesting.

In view of the labour involved in compiling the necessary statistics, however, it is doubtful if the construction of such tables could be justified if information regarding the current situation were all that could be obtained from them. In fact, however, knowledge of the inter-relationships between sectors makes it possible to investigate the full effects on the whole economy of changes which initially affect only one or a few sectors.

One of the major purposes of this present study is to estimate the full effects of the expansion in farm output on the rest of the economy. More output from the farming sector can only be obtained from the use of more inputs, and this means that unless supplies to other industries are to be cut back, the output of all industries supplying inputs to farming will have to be increased, and they in turn will require more inputs. Thus change in the output of one sector spreads its effects throughout the economy, reaching even sectors from which it does not itself buy inputs, and estimates of these effects can be illustrated most clearly with the aid of an input-output table. Potential bottlenecks can then be pinpointed, and efforts made to ensure that supplies of inputs increase at the rate required to generate the desired increases in output.

A simple example will illustrate some of the points discussed above. The interindustry table given earlier is repeated below, but all items of final demand (flows of goods and services to households, government, exports and capital formation) have been combined into one column, and all primary inputs (labour, profits, imports, depreciation etc.) into one row.

TABLE 4

Current Transactions Table 1964-65

\$mn.	Primary	Secondary	Tertiary	Total Intermediate Sales	Final Demand	Total Output
Primary	836.0	182.4	69.2	1087.6	990.6	2078.2
Secondary	145.8	419.8	228.9	794.5	1472.7	2267.2
Tertiary	208.9	331.8	501.3	1042.0	1720.8	2762.8
Total Intermediate Inputs	1190.7	934.0	799.4	2924.1	4184.1	7108.2
Total Primary Inputs	887.5	1333.2	1963.4	4184.1	401.8	4585.9
Total Inputs	2078.2	2267.2	2762.8	7108.2	4585.9	11694.1

The table shows that of the gross output of \$2078 mn. from the Primary sector, only \$991 mn. was sold to final buyers, while the rest was bought by productive sectors for further processing. In this example, the large purchases by the Primary sector from itself are explained by the fact that meat freezing works and dairy factories have been included in the Primary sector.

From the column of inputs for the Primary sector it can be seen that in order to produce an output of \$2078 mn. the sector had to purchase inputs valued at \$146 mn. and \$209 mn. from the other two sectors, in addition to the \$836 mn. from itself.

Suppose it is decided that the Primary products available for consumption and export (final demand) should be increased by fifty per cent; an increase which is approximately equal to a rise of four per cent per annum compounded for ten years, the target rate of increase set by the Agricultural Development Conference. The question then arises as to the effect this would have on the rest of the economy, i.e. the outputs required from other sectors, in order to provide this increase in agricultural output.

Using matrix algebra it is possible to derive the final answers to problems such as this in one operation, rather than a series of repeated operations, or iterations, as set out below. In most research work the direct method is the one which would be employed and an example will be given later. The iterative procedure, however, does have advantages as an explanatory technique as it provides a better insight into the workings of an input-output table.

The initial supply of Primary goods to final demand was \$990.6 mn. The increase of fifty per cent will raise this to \$1485.9 mn., and the total output required immediately rises to \$2573.5 mn. The higher output requires more inputs, and an estimate of these is obtained by multiplying the input-output coefficients, which represent the inputs used per \$1 of output, by the new estimate of total output. The estimated amounts of intermediate inputs now required for the Primary sector are:-

from Primary	\$1035.2 mn.
Secondary	\$ 180.5 mn.
Tertiary	\$ 258.7 mn.

These levels of inputs represent increases of \$199.2 mn., \$34.7 mn. and \$49.8 mn. respectively from the three sectors. If the flow of goods and services to other uses is not to be reduced, the increased supply of intermediate inputs to the Primary sector necessitates an increase in the production of all three sectors, and required total outputs now become:-

Primary	\$2772.7 mn.	(2573.5 + 199.2)
Secondary	\$2301.9 mn.	(2267.2 + 34.7)
Tertiary	\$2812.6 mn.	(2762.8 + 49.8)

All sectors now require additional intermediate inputs, and by multiplying the total outputs and the appropriate input-output coefficients we obtain the following matrix of required intermediate inputs:-

\$mn.	<u>Primary</u>	<u>Secondary</u>	<u>Tertiary</u>	<u>Total Intermediate Sales</u>
Primary	1115.4	185.2	70.4	1371.0
Secondary	194.5	426.2	233.0	853.7
Tertiary	278.7	336.9	510.3	1125.9

Adding the new intermediate sales of each sector to the sales to final consumers, we now have total outputs of:-

Primary	\$2856.9 mn.
Secondary	\$2326.4 mn.
Tertiary	\$2846.7 mn.

These outputs are greater than before; more intermediate inputs are therefore required, and they are calculated as before.

If this round-about process is repeated often enough, an equilibrium situation is eventually reached which represents the shape of the economy after the desired increase in supply of Primary products has been realised, and all the additional intermediate inputs required to make this possible have been produced.

In our example, equilibrium is reached after about eleven iterations, at which stage the total outputs from each sector are:-

Primary	\$2923.2 mn.
Secondary	\$2352.1 mn.
Tertiary	\$2881.7 mn.

The iterative method of solution just demonstrated illustrates very clearly the way in which a change in one sector works its way through the whole economy, but it is cumbersome to use, especially with multi-sector models. As mentioned earlier, the technique employed in most research work, using matrix algebra, provides a much more direct method

of estimating the total outputs required from all sectors in order to satisfy any given level of final demand. Although some of the background calculations which must precede the use of the technique can be rather complicated, the matrix solution method can be used without a full knowledge of the mathematics involved.* The working through of a matrix solution example, using the same data as in the previous iterative example, will illustrate the general technique, as well as demonstrate the advantages it has in terms of time taken to reach the final solution.

The table, or matrix, of input-output coefficients is manipulated mathematically to give a matrix of interdependence coefficients. This is the most difficult operation, and once it has been produced the use of the table is comparatively simple. The full table of interdependence coefficients for the New Zealand economy in 1964-65 is given in Chapter 3, together with the other tables.

The total output of all sectors can be calculated for any level of final demand by the multiplication of the matrix of interdependence coefficients, by the single column matrix, or vector, of final demands for the products of each sector.

* A full description of the matrix solution method may be found in any textbook on interindustry analysis. Eg. H.B. Chenery and P.G. Clark, Interindustry Economics, Wiley, New York, 1959, Chap. 2.

In our example, the matrix of interdependence coefficients formed from the input-output coefficients in Table 3 is:-

1.70612	.18112	.07054
.17131	1.26815	.13360
.24014	.24897	1.25421

After allowing for the fifty per cent increase in the final demands for the products of the Primary sector, the column, or vector, of final demand in our example from Table 4 becomes:-

\$1485.9 mn.

\$1472.7 mn.

\$1720.8 mn.

Under the rules of matrix multiplication, the rows of the first matrix (the interdependence coefficients) are multiplied by the columns in the second (the one column matrix of final demand). Thus 1.70612, .18112 and .07054 are multiplied by 1485.9, 1472.7 and 1720.8 respectively. The products, 2535.1, 266.7 and 121.4, are added to form the first element in a new one column matrix, or vector, which represents the new total outputs. This first element, of 2923.2, is the estimate of the required level of output from the Primary sector. Outputs of the Secondary and Tertiary sectors are calculated in the same way, and the full vector of total outputs is:-

Primary	2923.2
Secondary	2352.1
Tertiary	2881.7

These outputs are, of course, the same as those obtained by the much more laborious iterative procedure.

Having determined the equilibrium level of total outputs by either method, it is possible to construct a full inter-industry table which incorporates all the flows between sectors which are implied by the new levels of output. This has been done in Table 5.

Comparing Table 5 with Table 4 we can see that with input-output coefficients unchanged from year to year, a planned increase of \$495.3 mn. in the goods supplied to final consumers by one sector, led to an increase in the total output of that sector of \$845.0 mn. When increases in the outputs of other sectors are taken into account, the final demand increase of \$495.3 mn. necessitated a total increase in the gross outputs of all sectors of \$1048.8 mn.

Primary inputs have also increased proportionately, but as the extra quantities of these inputs are not produced within the economic system in the same way as the intermediate inputs they may be calculated after the total outputs have been derived. In making the projection it is assumed that the required additional quantities of labour, imports and so on, will be available. The important feature of the increase in primary inputs is that it is shared by all three sectors, even though the increase in final demand was solely for the products of the Primary sector.

TABLE 5

Projection of Economy After Fifty per cent Increase
in Final Demand for Primary Products

\$mn.	Primary	Secondary	Tertiary	Total Intermed. Sales	Final Demand	Total Output
Primary	1175.9	189.2	72.2	1437.3	1485.9	2923.2
Secondary	205.1	435.5	238.8	879.4	1472.7	2352.1
Tertiary	293.8	344.2	522.9	1160.9	1720.8	2881.7
Total Intermediate Inputs	1674.8	968.9	833.9	3477.6	4679.4	8157.0
Total Primary Inputs	1248.4	1383.1	2047.9	4679.4	401.8	5081.2
Total Inputs	2923.2	2352.1	2881.7	8157.0	5081.2	13238.2

Longer Term Projections

The simple projection example worked through above demonstrates the two alternative methods, but some modifications are required before meaningful longer term forecasts can be obtained. The two major modifications concern the capital requirements of the economy, and possible changes in the input-output coefficients.

The basic assumption in the example was that the current input-output relationships remained the same from one period to another. No explicit assumption was made about capital, but it is obvious that in most situations an increase in a sector's output will require an increase in the capital employed in that sector. If the current input-output relationships are assumed to be constant, then probably some constant relationships between capital and output will also be assumed. If information is available on the stock of capital in each sector, it may perhaps be assumed that each unit of output will require the same average amount of capital as existed in the sector in the base period. Alternatively it may be assumed that each \$1 increase in the output of a sector will require the same increase in the capital stock of the sector as was observed with each \$1 output increase in some previous period. On both theoretical and practical grounds the second assumption, involving marginal, or incremental, capital output ratios, is the one most often adopted.

Once the initial required increase in the output of each individual sector has been estimated, use of the chosen capital output ratios will indicate the value of extra

capital required in each sector. Most of the capital has to be produced within the economy (some will be imported) and the production of extra capital goods will require greater total output from the industries producing these goods. The sectors which will have to supply any given amount of capital to any particular sector may be determined from the Capital Matrix, and by adding the value of capital supplied to individual sectors the capital formation, or production of capital goods, by each sector is obtained. If the required capital formation differs from the base year levels, then total final demand is changed, and either of the projection methods described earlier should be applied to obtain an estimate of the full effects on the economy of the required increase in the production of capital goods.

Any increase in final demand will of course result in higher total outputs, which will require more capital, still higher outputs and so on. Even this is not the full story, as the use of more capital goods leads to greater depreciation and hence a need for greater production of replacement, as distinct from additional, capital goods.*

Often, when the effects of alternative small changes in final demand are being examined, it will be found that the effects of capital changes can be ignored, and this greatly simplifies the estimating procedure. Small changes

* These cumulative effects are described and quantified in B.P. Philpott & B.J. Ross, op.cit.

in total output necessitate only small changes in capital formation, and usually no great violence is done to the projection in such circumstances if the base year levels of capital formation are assumed to continue unchanged. Precise work, or projections involving major changes in final demand must of course include full allowance for required changes in capital formation.

The second major modification which the simple model requires before worthwhile real-world forecasts can be made concerns the input-output coefficients. The assumption that these coefficients remain unchanged year after year is too rigid, but it may be relaxed to some extent if sufficient information is available. One of the advantages of having a series of comparable interindustry tables for a number of years, as presented in this report, is that it becomes possible to investigate the ways in which various coefficients have been changing.

Changes in input-output coefficients result from either price changes (whether they affect inputs or outputs), changes in the physical amounts of various inputs used to produce a given physical amount of output, or some combination of price and physical changes.

Obviously if the physical relationship between inputs and outputs is unchanged but the price of one input rises sharply while all other prices are constant, then the value of that input per dollar of output will rise. Similarly, if the price of the output rises, while all input prices are constant, a dollar's worth of output will represent a smaller physical quantity and hence the value of each input

bought per dollar of output will fall. In each of these cases there would be a change in the profit component of primary inputs to compensate for the changes in the coefficients representing purchases from other sectors.

From time to time changes also take place in the physical relationships between inputs and outputs; electricity may replace coal as a source of energy, for example, a local product may replace an imported component, or the nature of the product may be changed. If the meat industry produces a more valuable product by carrying out more processing, for example, the purchase of livestock from farms becomes less important per dollar of output while the wages of the labour carrying out the processing become more important.

Changes in the coefficients due to physical changes are usually thought of as representing the effects of advances in technology, and where this is so the changes are unlikely to be reversed. But where one input may be readily substituted for another, the choice of input will be determined by relative prices, and to the extent that relative price changes can be reversed, alterations in the physical input mix which have been induced by price changes are also reversible.

Prediction of future changes in input-output coefficients is obviously a hazardous occupation, involving as it does, assumptions about future technological change, as well as some estimate of future price relationships, but the coefficients do change, and meaningful forecasts must take account of this fact. Fortunately, a trend is

discernible in many of the changes which have taken place in the past, and it is hoped that future work at the Agricultural Economics Research Unit will indicate the likely nature of at least some major coefficient changes to be expected in the future.

CHAPTER II

CONSTRUCTION OF THE INTERINDUSTRY TABLES FOR 1961 TO 1965

The basic starting point for all work on the estimation of the tables presented in Chapter III has been the Government Statistician's Inter-Industry Study of the New Zealand Economy, 1959-60. Once the decision had been made on the number of sectors to be included in the present study, the first step was to reduce the Government Statistician's table of 110 sectors to the chosen sixteen sectors.

The method used for the estimation of the tables was first to obtain estimates of the total output (and hence total input) of each sector, and of the individual elements of final demand and primary inputs. By subtraction of final demand from total output, and primary inputs from total inputs, estimates of intermediate sales and inputs respectively were obtained for each sector, and the R.A.S. technique, an example and explanation of which will be given later, was then applied to derive an estimate of the inter-industry or technology matrix.

Wherever possible, use was made of a wide range of published statistics* to obtain independent estimates of the level of output of each sector. Where an acceptable level

* A list of major sources is given with the tables in Chapter III.

of agreement with the estimate in the aggregated version of the Government Statistician's table could be achieved for 1959-60 (in most cases this meant an estimate within five per cent of the official figure), the same method was used to obtain the estimate for later years, and the same correction factor* which was required to bring the independent estimate for 1959-60 into agreement with the official figure was applied to the estimate for each other year, although in some cases the factor was modified by a measurable trend. In cases where this method could not be used, indices of volume of output, and of prices, were applied to the Government Statistician's estimate of sector outputs for 1959-60 to rate them up for the later years.

Estimates of the elements of final demand and primary inputs were handled in a similar manner, but the degree of confidence which may be placed in the results varies from item to item. Total subsidies, for example, are known exactly and may be allocated fairly readily to the appropriate sectors, whereas profits are notoriously difficult to estimate sector by sector. A detailed analysis of imports and exports was carried out and used in a preliminary version of these tables. Following publication of the detailed break-down

* For example, if estimated output of a sector differed from the Government Statistician's figure by 2% in the base year, then this percentage was used to adjust estimates in subsequent years.

of imports for the official 1959-60 table,* a new estimate of imports was prepared and used in the revised version of the tables published here.

Total Household consumption expenditure may be obtained fairly accurately by making minor adjustments to the figure published in the Report on the National Income and Expenditure such as allowing for an apparent under-statement of the rental value of owner-occupied houses. Separate estimates were made of items accounting for approximately three-quarters of the total Household expenditure, and the remaining items were calculated by allocating the residual by proportions, based on the proportions in 1959-60.

Wage and Salary payments and Other Value Added (profits and the incomes of the self-employed) were estimated in a similar fashion, the totals coming from national income statistics with minor adjustments, and after those individual items which could be estimated independently had been subtracted, the remainder were calculated as proportions of the residuals.

Total Government expenditure was taken from the national income estimate, with a very minor adjustment. Independent estimates were made of a few of the individual items (notably wage and salary payments) accounting for approximately two-thirds of the total expenditure, and the remainder was allocated proportionately.

* Department of Statistics, Inter-industry Study of the New Zealand Economy 1959-60: Part 4. A Description of the Input-Output Tables and System, 1967, pp.52-53.

Capital formation estimates were originally based on the work presented in the capital formation report of the present series* with a subsequent revision following the publication of more official information.

Estimates of changes in stocks were based principally upon published information on livestock numbers and data related to stocks in some sectors which may be found in supplements to the Monthly Abstract of Statistics.

Subsidies were obtained from the Accounts of the Government Sector which give sufficient information to enable the bulk of subsidy payments to be allocated to the appropriate sectors. Indirect taxes in the official interindustry study include local authority rates, and these were therefore added to the official estimates of indirect taxes to obtain the

* T.W. Francis, Sectoral Capital Formation in New Zealand 1958-65, Agricultural Economics Research Unit, Research Report No. 52, 1968. Unfortunately the data on capital formation presented in this present report do not correspond exactly with the estimates in Report No. 52. The capital estimates in that Report were made before Part 4 of the official 1959-60 study became available, whereas the tables in this present report have been revised in the light of the comparatively detailed information, particularly in regard to the sectoral allocation of imports, which Part 4 provides. The major changes resulting from a revision of the capital estimates in the light of the information now available, would be in the sources of the capital purchased by sectors, rather than in the total investment in each sector or in the capital: output ratios.

total on an interindustry basis. Some of the bigger items were estimated separately and the residual was then allocated proportionately.

Total depreciation was calculated by adjustment of the official estimate, and, once again, a proportional method was used to allocate the residual remaining after subtraction of the individual sectors' depreciation which could be estimated separately.

Using the methods outlined above, estimates were derived for all items in Quadrants 2, 3 and 4. By subtraction of primary inputs from total inputs, and final demand from total outputs, it was then possible to obtain the intermediate inputs and sales totals needed for the application of the R.A.S. technique to derive the interindustry transactions matrix.

R.A.S. Technique

If all prices and methods of production remained unchanged from year to year, the input-output coefficients would also remain unchanged, and all transactions between sectors could be calculated directly from estimates of total outputs, using the input-output coefficients. In fact, of course, the economy is subject to continual change, but the separate estimation of each transaction between sectors is an immense task which can only be undertaken by an organisation such as the Department of Statistics, which has the resources to carry out the job and the authority to ask firms and individuals for confidential information. Research work of the type being carried out at Lincoln College requires

a method of estimating the transactions which can be applied using the research resources at hand. The method adopted here is the R.A.S. or biproportional rating method.* This technique utilises the fact that changes in the proportions of primary inputs to total inputs, and of final demand sales to total outputs, provide an insight into the way in which the input-output coefficients have changed. A simple example should make the operation of the technique reasonably clear.

The technique depends on having a set of known input-output coefficients for some base year, and estimates of Quadrants 2, 3 and 4 of the interindustry table which is being estimated for some later year. The total outputs in this later year are first converted to the base year's prices, and using the known coefficients an estimate of the second year's interindustry transactions is obtained in base year prices. Base year prices must be used for the outputs as the input coefficients refer to physical relationships and are valid for only one set of prices. The indices relating prices in the base and later years are applied across the rows of interindustry transactions in order to convert the

* "R.A.S." is a shorthand way of describing a technique which involves multiplying the rows of a transactions matrix by r coefficients and the columns by s coefficients. For a detailed description of the R.A.S. technique see R. Stone, J. Bates and M. Bacharach A Programme for Growth, No.3, Input-Output Relationships 1954-66, Chapman and Hall, 1963.

estimates of sales by each sector to the second year's prices. The carrying out of this operation involves the implicit assumption that the whole of each sector's output is subject to a uniform price change; with highly aggregated sectors this assumption may not always be valid.

Addition of the interindustry transactions will give estimates of each sector's total intermediate sales and purchases in the second year's prices which are fully comparable in definition with the estimates obtained by subtracting final demand or primary inputs from total output. Any differences between the estimates are assumed to result from changes in the physical relationships measured by the input-output coefficients, and adjustments are made to the interindustry transactions to take account of these changes.

For example, let the following input-output table represent the situation of the economy in the base year.

Base Year Three Sector Interindustry Table.

	1 ^o	2 ^o	3 ^o	Total Intermed. Sales	Final Demand	Total Output
1 ^o	657.4	131.8	43.6	832.8	773.3	1606.1
2 ^o	102.3	270.6	128.6	501.5	947.4	1448.9
3 ^o	137.1	200.1	263.6	600.8	1156.6	1757.4
Total Intermed. Purchases	896.8	602.5	435.5	1935.1	2877.3	4812.4
Primary Inputs	709.3	846.4	1321.6	2877.3	287.2	3164.5
Total Inputs	1606.1	1448.9	1757.4	4812.4	3164.5	7976.9

The input-output coefficients for the base year are:-

1 ^o	.409314	.090966	.024809
2 ^o	.063695	.186762	.073176
3 ^o	.085362	.138105	.149994
Primary	.441629	.584167	.752020
Total	1.000000	1.000000	1.000000

For the second year it has been possible to estimate total inputs and outputs for each sector, together with the elements of final demand and primary inputs, all in the second year's prices. By subtraction, total intermediate sales and inputs are also obtained.

Elements of Second Year Interindustry Table
Independently Estimated.

	1 ^o	2 ^o	3 ^o	Total Intermed. Sales	Final Demand	Total Output
1 ^o				1087.6	990.6	2078.2
2 ^o				794.5	1472.7	2267.2
3 ^o				1042.0	1720.8	2762.8
Total Intermed. Purchases	1190.7	934.0	799.4	2924.1	4184.1	7108.2
Primary Inputs	887.5	1333.2	1963.4	4184.1	401.8	4585.9
Total Inputs	2078.2	2267.2	2762.8	7108.2	4585.9	11694.1

The problem is to estimate the interindustry transactions in the second year.

Calculation of price indices reveals that if prices in the base year equal 1000, the sectoral price indices for output in the second year are Primary 1082, Secondary 1100 and Tertiary 1180. Using these indices, the following estimates of the value of outputs in Year 2 at base year prices are obtained:-

Primary	1920.7
Secondary	2061.1
Tertiary	2341.4

With outputs valued in base year prices, the base year input-output coefficients can now be used to obtain the following estimates of the interindustry transactions in Year 2 in base year prices:-

	1 ^o	2 ^o	3 ^o
1 ^o	786.2	187.5	58.1
2 ^o	122.3	384.9	171.3
3 ^o	164.0	284.6	351.2

The next step is to convert these estimates to the second year's prices. This is done by applying each sectoral price index to the appropriate sector's output; that is, the row representing the sector's intermediate sales. Using the same indices as were used previously

to convert total outputs to base year prices, the following matrix of Year 2 interindustry transactions in current prices is obtained.

	1 ^o	2 ^o	3 ^o	Total Intermediate Sales
1 ^o	850.7	202.9	62.9	1116.5
2 ^o	134.5	423.4	188.4	746.3
3 ^o	193.5	335.8	414.4	943.7
Total Intermed. Purchases	1178.7	962.1	665.7	2806.5

The procedure so far carried out has provided estimates of interindustry transactions, and hence total intermediate sales and purchases, in the second year, after making allowances for the effects on the base year input-output coefficients of changes in prices. If the physical relationships between inputs and outputs were the same in both years these new estimates of total intermediate sales and purchases would be the same as those calculated by subtracting final demand and primary input estimates from total outputs. In fact there are differences between the two sets of estimates, indicating that changes have occurred in the physical relationships, and the interindustry transactions must be adjusted to take account of this.

Total intermediate sales, as previously determined from total outputs and final demand, are known to be 1087.6, 794.5 and 1042.0. The adjustments required to bring the new estimates of 1116.5, 746.3 and 943.7 into line

with the known values are -2.588%, +6.459% and +10.416% for the respective sectors. If these adjustments are applied across the rows of the interindustry transactions matrix it becomes:-

	1 ^o	2 ^o	3 ^o	Total Intermediate Sales
1 ^o	828.7	197.6	61.3	1087.6
2 ^o	143.2	450.7	200.6	794.5
3 ^o	213.7	370.8	457.6	1042.1
<hr/>				
Total Intermed. Purchases	1185.6	1019.1	719.5	2924.2

Allowing for small rounding errors, the row totals of estimated intermediate sales now equal the known values, but the column totals of intermediate purchases do not equal the known values of 1190.7, 934.0 and 799.4. Accordingly, adjustments of +0.430%, -8.351% and +11.105% must now be applied down the columns, giving the following result:-

	1 ^o	2 ^o	3 ^o	Total Intermediate Sales
1 ^o	832.4	181.1	68.1	1081.6
2 ^o	143.8	413.1	222.9	779.8
3 ^o	214.6	339.8	508.4	1062.8
<hr/>				
Total Intermed. Purchases	1190.8	934.0	799.4	2924.2

The column totals have now been brought into agreement with the known values, but in the process the row totals have been changed. The adjustment procedure has

to be applied to the rows once again, and the process is repeated until a final equilibrium situation is reached in which all the estimated row and column totals are in agreement with the known values. In the example which has been used here, the final estimate of the completed interindustry table is:-

	1 ^o	2 ^o	3 ^o	Total Intermed. Sales	Final Demand	Total Output
1 ^o	836.0	182.4	69.2	1087.6	990.6	2078.2
2 ^o	145.8	419.8	228.9	794.5	1472.7	2267.2
3 ^o	208.9	331.8	501.3	1042.0	1720.8	2762.8
Total Intermed. Purchases	1190.7	934.0	799.4	2924.1	4184.1	7108.2
Primary Inputs	887.5	1333.2	1963.4	4184.1	401.8	4585.9
Total Inputs	2078.2	2267.2	2762.8	7108.2	4585.9	11694.1

The interindustry transactions matrices in the tables presented in Chapter III have all been calculated in the manner described above, but the laborious process of adjusting and re-adjusting was, of course, carried out on a computer.

The R.A.S. technique is subject to several limitations, and it is not the only method of estimating the interindustry transactions matrix,* but it does provide a systematic method

* For a discussion of the methods, see C.B. Tilanus, Input-Output Experiments, The Netherlands 1948-1961, Rotterdam University Press, Economic Series, Vol. 5, 1966, pp.94-136.

of estimation which seems to have performed reasonably well where it has been checked against independent estimates of each transaction.* If any errors do arise they are generally the result of changes in input usage which affect some industries more than others, rather than all industries equally, as is assumed in the R.A.S. method. Stone and his colleagues quote the example of changes in the disposition of the output of the coal mining industry in Belgium. In most industries coal is used as a fuel, and over the period spanned by the two interindustry estimates for Belgium there had been a tendency for coal to be replaced as a fuel by oil, and the input of coal per unit of output in most industries was therefore reduced. In the production of gas and coke, however, coal is used as a raw material, and over the period studied there had been no change in the quantity of coal required for the production of a fixed amount of gas. Application of the R.A.S. technique over-estimated the quantities of coal used in the fuel consuming industries, and under-estimated the amount required by the gas and coke industry. Stone observes that all of the errors of this nature which occurred in the Belgian example were such that they could have been detected and estimated independently. Once allowance had been made for special circumstances affecting six of the coefficients, 262 coefficients out of a total of 270 were subject to errors of less than half of

* Stone et al., op. cit., pp. 30-32.

one per cent. These results are encouraging and in the estimates of the interindustry tables presented in Chapter III the R.A.S. technique has been applied in a straightforward manner with allowance for only one significant change. This concerns the replacement of imported petroleum products with the products of the oil refinery which imports crude oil, for which partial allowance has been made.

There is always a risk, however, that changes in production methods which could upset the R.A.S. technique might be overlooked. Consequently, any programme involving the routine production of annual input-output tables would have to include provisions for the periodic preparation of tables with independent estimates of the elements of the interindustry transactions matrix, to provide a check on the use of the R.A.S. technique for other years. In this connection it should be noted that the relative price changes brought about by New Zealand's devaluation are likely to have induced considerable changes in the physical mix of inputs used by some industries, and the preparation of a detailed interindustry table for a post-devaluation year is highly desirable.

CHAPTER III

THE INTERINDUSTRY TABLES FOR 1959/60 TO 1964/65

The following pages contain interindustry tables for each of the years 1959-60 to 1964-65, and two sets of coefficients derived from the 1964-65 interindustry tables.

Table I is a sixteen sector aggregation of the Government Statistician's 110 sector table for 1959-60. This table has been the foundation upon which the tables for later years have been built, and it is presented here for purposes of comparison.

Tables II to VI are the estimated interindustry tables for the years 1960-61 to 1964-65, which have been prepared by the methods outlined in Chapter II. The R.A.S. technique has been applied to each year by taking the previous year as base. Thus input-output coefficients derived from the interindustry transactions matrix for 1960-61 were used in the estimation of the matrix for 1961-62, and so on. It can be shown theoretically that this is likely to lead to a more accurate result than using the 1959-60 matrix as a base for each of the others, although in fact comparison of results from the two methods revealed very little difference.

Table VII presents the input-output coefficients for 1964-65 as calculated from Table VI, and the inter-

dependence coefficients derived from Table VII may be found in Table VIII. It will be noted that this latter table contains coefficients for only fourteen sectors. This stems from the fact that the sectors "Services to Households", and "Services to Government", have no inter-industry transactions, and for technical reasons the matrix of interdependence coefficients cannot include rows and columns of zeros.

The information presented in Tables VII and VIII may be used for projections of the type described in Chapter I, but the inadequacies of projections which do not include capital requirements must be borne in mind. As mentioned in Chapter II, the sectoral capital estimates by T.W. Francis^{*} provide information on capital : output coefficients which may be used for projection work. Although revision of the capital estimates would cause some change in the sources of the capital supplied to certain sectors, the estimated capital coefficients should be used in any projections involving major changes in final demand. Failure to take any account at all of capital requirements will produce greater errors than the use of capital coefficients which require some revision.

Three short appendices will be found at the end of the chapter, following the tables. The first provides a comparison of national income and interindustry estimates of major economic aggregates for 1964-65. It will be noted that, as in 1959-60, the slight differences in

* T.W. Francis op.cit.

definition and coverage result in the interindustry estimates being consistently higher than the equivalent national income aggregates.

The second appendix lists the composition of the 16 sectors used in this study in terms of the 110 sectors used by the Government Statistician. The third provides a list of the major sources of data used in producing the interindustry tables.

TABLE I : NEW ZEALAND INTERINDUSTRY

		Farming	Forestry	Forestry Proc.	Hunting & Fishing	Mining	Pri. Prod. Proc.	Other Mfrg.	Bldg & Constr.	Public Utilities	Trans. & Comm.	W/sale & Retail Trade	Bnkg & Ins.
		1	2	3	4	5	6	7	8	9	10	11	12
Farming	1	169.7	0.0	0.0	0.1	0.0	359.9	24.3	0.0	0.1	0.4	0.5	0.0
Forestry	2	1.3	0.0	22.6	0.0	0.1	0.1	0.1	0.2	0.5	0.1	0.1	0.0
Forestry Processing	3	7.7	0.1	36.8	0.1	0.0	7.1	24.6	48.4	0.6	1.4	10.6	0.7
Hunting & Fishing	4	0.2	0.0	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.1	0.0	0.0
Mining	5	0.8	0.0	0.8	0.0	0.0	3.2	6.0	17.7	3.1	1.8	0.0	0.0
Pri.Prod.Proc.	6	2.7	0.0	0.0	0.0	0.0	42.6	8.2	0.0	0.0	0.7	1.7	0.0
Other Mfrg.	7	69.2	1.4	5.3	0.9	1.5	9.6	115.7	68.9	3.7	36.6	19.2	3.3
Building & Construction	8	5.3	0.5	1.2	0.2	2.6	1.1	3.6	87.5	1.3	5.9	8.0	5.9
Public Utilities	9	5.7	0.1	3.0	0.1	0.9	3.6	9.0	1.7	33.9	2.1	5.8	2.0
Transport & Comm.	10	22.7	0.5	11.1	0.4	7.2	13.3	46.1	23.0	2.6	34.1	21.2	4.5
W/sale & Retail Trade	11	33.6	0.5	8.3	0.5	1.0	10.9	50.5	37.8	2.8	7.2	7.5	1.2
Banking & Insurance	12	3.2	0.2	1.6	0.1	0.6	1.0	4.6	3.2	0.5	1.2	17.6	2.0
Services	13	7.3	0.3	1.4	0.2	0.4	1.0	10.9	3.8	0.3	3.4	26.4	4.8
Services to Households	14	-	-	-	-	-	-	-	-	-	-	-	-
Services to Government	15	-	-	-	-	-	-	-	-	-	-	-	-
Ownership of Property	16	0.0	0.3	0.5	0.0	0.1	0.3	5.2	1.2	0.2	1.4	16.2	2.0
Total Intermediate Purchases	17	329.4	3.9	92.6	2.7	14.4	453.8	309.1	293.4	49.6	96.4	134.8	26.4
Wages & Salaries	18	77.0	11.0	35.6	2.4	15.4	50.2	231.6	131.2	15.4	147.3	191.1	49.3
Other Value Added	19	322.6	11.5	19.7	1.3	2.1	32.5	100.3	52.4	32.5	45.2	150.0	6.2
Indirect Tax	20	21.2	0.2	0.7	0.6	0.5	1.5	80.9	5.7	1.4	13.5	48.9	5.5
Subsidies	21	-1.7	-0.1	0.0	0.0	0.0	-14.6	-9.4	-0.1	-0.9	-0.2	-0.1	-1.9
Imports	22	31.5	1.0	12.0	1.0	2.3	10.4	189.5	25.7	3.3	19.2	11.9	2.2
Depreciation	23	37.2	2.5	7.8	0.3	4.2	6.7	25.9	11.5	11.3	23.2	23.7	7.6
Sales by Final Consumers		1.9	0.0	0.2	0.0	0.1	0.6	0.9	0.3	0.1	0.3	0.5	0.5
Total Primary Inputs	24	489.7	26.1	76.0	5.6	24.6	87.3	619.7	226.7	63.1	248.5	426.0	69.4
Total Inputs	25	819.1	30.0	168.6	8.3	39.0	541.1	928.8	520.1	112.7	344.9	560.8	95.8

TRANSACTIONS 1959-60

Services	Services	Services	Ownership	Total	H/hold	Govt.	Exports	Stock	Capital	Total	Total	
	to	to	of	Intermed.	Purchases	Purchases		Changes	Formation	Final	Output	
	H/holds	Govt.	Property	Sales						Buyers		
13	14	15	16	17	18	19	20	21	22	23	24	
8.9	-	-	0.0	563.9	44.3	2.7	192.5	12.4	3.3	255.2	819.1	1
0.0	-	-	0.0	25.1	0.3	3.3	1.1	0.0	0.2	4.9	30.0	2
1.9	-	-	1.5	141.5	3.8	1.4	14.3	2.3	5.3	27.1	168.6	3
0.8	-	-	0.0	1.6	1.3	2.7	2.7	0.0	0.0	6.7	8.3	4
0.0	-	-	0.0	33.4	4.8	0.6	0.1	0.0	0.1	5.6	39.0	5
11.4	-	-	0.0	67.3	119.3	3.2	356.4	-5.1	0.0	473.8	541.1	6
20.2	-	-	5.3	360.8	422.4	19.0	17.2	3.8	105.6	568.0	928.8	7
4.6	-	-	13.0	140.7	0.1	36.6	0.1	0.0	342.6	379.4	520.1	8
3.1	-	-	2.8	73.8	33.2	4.8	0.9	0.0	0.0	38.9	112.7	9
8.6	-	-	1.1	196.4	70.4	15.8	51.0	-3.4	14.7	148.5	344.9	10
6.6	-	-	1.7	170.1	322.0	6.6	24.4	2.7	35.0	390.7	560.8	11
3.3	-	-	3.8	42.9	44.9	1.7	5.7	0.1	0.5	52.9	95.8	12
15.3	-	-	1.6	77.1	157.3	16.0	7.5	-0.1	15.1	195.8	272.9	13
-	-	-	-	-	15.4	0.0	0.0	0.0	0.0	15.4	15.4	14
-	-	-	-	-	0.0	157.8	0.0	0.0	0.0	157.8	157.8	15
10.4	-	-	2.7	40.5	150.2	3.5	2.9	0.0	0.0	156.6	197.1	16
95.1	-	-	33.5	1935.1	1389.7	275.7	676.8	12.7	522.4	2877.3	4812.4	17
76.4	15.4	157.8	3.8	1210.9	0.0	0.0	0.0	0.0	0.0	0.0	1210.9	18
58.7	0.0	0.0	111.2	946.2	0.0	11.4	0.0	0.0	0.0	11.4	957.6	19
17.9	0.0	0.0	20.8	219.3	40.9	2.8	0.8	0.0	4.0	48.5	267.8	20
0.0	0.0	0.0	0.0	-29.0	-0.1	0.0	0.0	0.0	0.0	-0.1	-29.1	21
14.9	0.0	0.0	1.6	326.5	109.0	41.0	3.3	0.0	80.0	233.3	559.8	22
9.4	0.0	0.0	26.2	197.5	0.0	0.0	0.0	0.0	0.0	0.0	197.5	23
0.5	0.0	0.0	0.0	5.9	0.9	-8.0	1.0	0.0	0.2	-5.9	0.0	
177.8	15.4	157.8	163.6	2877.3	150.7	47.2	5.1	0.0	84.2	287.2	3164.5	24
272.9	15.4	157.8	197.1	4812.4	1540.4	322.9	681.9	12.7	606.6	3164.5	7976.9	25

TABLE II : NEW ZEALAND INTERINDUSTRY

		Farming	Forestry	Forestry Proc.	Hunting & Fishing	Mining	Pri. Prod. Proc.	Other Mfrg.	Bldg & Constr.	Public Utilities	Trans. & Comm.	W/sale & Retail Trade	Bnkg & Ins.
		1	2	3	4	5	6	7	8	9	10	11	12
Farming	1	161.0	0.0	0.0	0.1	0.0	345.2	29.1	0.0	0.1	0.4	0.6	0.0
Forestry	2	1.2	0.0	24.8	0.0	0.1	0.1	0.1	0.2	0.5	0.1	0.1	0.0
Forestry Processing	3	6.9	0.1	40.7	0.1	0.0	6.5	27.9	56.1	0.6	1.5	12.5	1.0
Hunting & Fishing	4	0.2	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0	0.2	0.0	0.0
Mining	5	0.7	0.0	0.8	0.0	0.0	2.7	6.3	18.9	3.0	1.8	0.0	0.0
Pri.Prod.Proc.	6	3.7	0.0	0.0	0.0	0.0	58.5	14.1	0.0	0.0	1.1	3.0	0.0
Other Mfrg.	7	56.7	1.4	5.3	0.6	1.5	7.9	119.5	72.7	3.6	35.5	20.6	4.3
Building & Construction	8	5.0	0.6	1.4	0.2	3.0	1.0	4.3	106.2	1.5	6.6	9.9	8.8
Public Utilities	9	5.0	0.1	3.3	0.1	1.0	3.2	10.0	1.9	35.5	2.2	6.7	2.8
Transport & Comm.	10	18.7	0.5	11.3	0.3	7.4	11.1	47.9	24.4	2.5	33.2	22.9	5.8
W/sale & Re- tail Trade	11	26.7	0.5	8.1	0.3	1.0	8.8	50.6	38.7	2.6	6.8	7.8	1.5
Banking & Insurance	12	2.6	0.2	1.6	0.7	0.6	0.8	4.7	3.3	0.5	1.2	18.7	2.6
Services	13	4.2	0.2	1.0	0.1	0.3	0.6	7.9	2.8	0.2	2.3	20.0	4.4
Services to Households	14	-	-	-	-	-	-	-	-	-	-	-	-
Services to Government	15	-	-	-	-	-	-	-	-	-	-	-	-
Ownership of Property	16	0.0	0.3	0.5	0.0	0.1	0.3	5.6	1.3	0.2	1.4	18.3	2.7
Total Intermediate Purchases	17	292.6	4.0	98.8	1.8	15.0	446.7	328.4	326.8	51.0	94.2	141.1	33.8
Wages & Salaries	18	82.2	12.0	39.9	2.8	15.2	52.5	264.0	143.4	16.4	159.8	208.4	52.0
Other Value Added	19	335.8	12.0	22.3	1.7	2.7	17.6	115.1	63.3	34.4	54.6	181.8	7.5
Indirect Tax	20	22.0	0.2	0.6	0.6	0.6	1.5	83.6	6.0	1.5	13.9	50.8	5.8
Subsidies	21	-1.4	-0.1	0.0	0.0	0.0	-20.8	-7.4	0.0	-0.8	-0.1	-0.1	-1.8
Imports	22	36.0	1.2	15.6	1.4	3.2	12.0	231.2	32.8	4.0	25.6	16.4	3.2
Depreciation	23	39.8	2.7	7.7	0.3	4.5	7.3	28.0	12.3	12.1	24.8	25.4	8.1
Total Primary Inputs	24	514.4	28.0	86.1	6.8	26.2	70.1	714.5	257.8	67.6	278.6	482.7	74.8
Total Inputs	25	807.0	32.0	184.9	8.6	41.2	516.8	1042.9	584.6	118.6	372.8	623.8	108.6

TRANSACTIONS 1960-61

Services to H/holds	Services to Govt.	Ownership of Property	Total Intermed. Sales	H/hold Purchases	Govt. Purchases	Exports	Stock Changes	Capital Formation	Total Final Buyers	Total Output		
13	14	15	16	17	18	19	20	21	22	23	24	
10.3	-	-	0.0	546.8	56.0	2.6	188.8	9.1	3.7	260.2	807.0	1
0.0	-	-	0.0	27.2	0.4	3.2	1.0	0.0	0.2	4.8	32.0	2
2.1	-	-	1.6	157.6	4.8	1.4	14.8	2.8	3.5	27.3	184.9	3
1.1	-	-	0.0	2.1	1.3	2.6	2.6	0.0	0.0	6.5	8.6	4
0.0	-	-	0.0	34.2	6.1	0.6	0.2	0.0	0.1	7.0	41.2	5
18.8	-	-	0.0	99.2	125.6	3.1	297.7	-8.8	0.0	417.6	516.8	6
20.1	-	-	5.1	354.9	492.5	18.5	18.1	17.7	141.2	688.0	1042.9	7
5.3	-	-	14.5	168.2	0.1	35.5	0.2	0.0	380.6	416.4	584.6	8
3.3	-	-	2.9	78.1	35.0	4.7	0.8	0.0	0.0	40.5	118.6	9
8.6	-	-	1.1	195.6	89.0	15.3	55.1	0.0	17.8	177.2	372.8	10
6.4	-	-	1.6	161.5	359.0	6.4	24.8	28.2	43.9	462.3	623.8	11
3.2	-	-	3.6	43.7	56.8	1.7	5.7	0.0	0.7	64.9	108.6	12
10.7	-	-	1.1	55.8	198.8	15.5	7.5	0.0	17.8	239.6	295.4	13
-	-	-	-	-	16.6	0.0	0.0	0.0	0.0	16.6	16.6	14
-	-	-	-	-	0.0	170.4	0.0	0.0	0.0	170.4	170.4	15
10.9	-	-	2.8	44.5	158.5	3.4	2.8	0.0	0.0	164.7	209.2	16
100.8	-	-	34.4	1969.4	1600.5	284.9	620.1	49.0	609.5	3164.0	5133.4	17
84.2	16.6	170.4	4.8	1324.6	0.0	0.0	0.0	0.0	0.0	0.0	1324.6	18
62.0	0.0	0.0	118.0	1028.8	0.0	10.6	0.0	0.0	0.0	10.6	1039.4	19
18.7	0.0	0.0	22.2	228.0	44.5	2.9	0.8	0.0	4.1	52.3	280.3	20
0.0	0.0	0.0	0.0	-32.5	-0.1	0.0	0.0	0.0	0.0	-0.1	-32.6	21
19.6	0.0	0.0	1.8	404.0	145.8	46.4	4.2	0.0	100.6	297.0	701.0	22
10.1	0.0	0.0	28.0	211.1	0.0	0.0	0.0	0.0	0.0	0.0	211.1	23
194.6	16.6	170.4	174.8	3164.0	190.2	59.9	5.0	0.0	104.7	359.8	3523.8	24
295.4	16.6	170.4	209.2	5133.4	1790.7	344.8	625.1	49.0	714.2	3523.8	8657.2	25

TABLE III : NEW ZEALAND INTERINDUSTRY

		Farming	Forestry	Forestry Proc.	Hunting & Fishing	Mining	Pri. Prod. Proc.	Other Mfrg.	Bldg & Constr.	Public Utilities	Trans. & Comm.	W/sale & Retail Trade	Bnkg & Ins.
		1	2	3	4	5	6	7	8	9	10	11	12
Farming	1	149.8	0.0	0.0	0.1	0.0	332.8	28.2	0.0	0.1	0.5	0.6	0.0
Forestry	2	1.2	0.0	25.7	0.0	0.1	0.1	0.1	0.2	0.6	0.1	0.2	0.0
Forestry Processing	3	7.6	0.1	43.7	0.1	0.0	7.3	31.9	55.3	0.7	1.7	14.0	1.2
Hunting & Fishing	4	0.2	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0	0.2	0.0	0.0
Mining	5	0.7	0.0	0.8	0.0	0.0	2.8	6.6	17.0	3.2	1.9	0.0	0.0
Pri. Prod. Proc.	6	4.1	0.0	0.0	0.0	0.0	68.3	16.5	0.0	0.0	1.4	3.5	0.0
Other Mfrg.	7	64.9	1.6	6.0	0.7	1.5	9.4	142.8	74.8	4.3	44.0	24.0	5.3
Building & Construction	8	4.9	0.6	1.3	0.2	2.6	1.0	4.4	92.6	1.5	6.9	9.7	9.1
Public Utilities	9	5.2	0.1	3.3	0.1	0.9	3.4	10.8	1.8	38.1	2.4	7.1	3.1
Transport & Communication	10	20.7	0.6	12.2	0.3	7.0	12.7	55.1	24.2	2.9	39.7	25.7	6.9
W/sale & Re- tail Trade	11	29.8	0.5	8.9	0.4	1.0	10.1	59.0	38.8	3.0	8.2	8.8	1.8
Banking & Insurance	12	3.1	0.3	1.9	0.1	0.6	1.0	5.9	3.6	0.6	1.5	22.9	3.3
Services	13	6.3	0.3	1.5	0.1	0.4	0.9	12.4	3.8	0.3	3.8	30.4	7.0
Services to H/holds	14	-	-	-	-	-	-	-	-	-	-	-	-
Services to Govt.	15	-	-	-	-	-	-	-	-	-	-	-	-
Ownership of Property	16	0.0	0.3	0.5	0.0	0.1	0.3	6.4	1.3	0.2	1.7	20.1	3.1
Total Intermediate Purchases	17	298.5	4.4	105.8	2.0	14.2	450.4	380.5	313.4	55.5	114.0	167.0	40.8
Wages & Salaries	18	86.8	12.4	41.2	3.0	14.8	56.7	286.1	150.2	17.0	169.0	224.4	57.0
Other Value Added	19	299.4	13.8	22.6	1.6	2.5	33.3	116.4	58.9	39.4	50.8	169.3	7.0
Indirect Tax	20	22.7	0.2	0.6	0.6	0.6	1.5	86.4	6.2	1.5	14.4	52.5	6.0
Subsidies	21	-1.4	-0.1	0.0	0.0	0.0	-16.2	-11.0	0.0	-1.0	-0.1	-0.2	-1.8
Imports	22	38.4	1.3	14.7	1.5	3.4	12.3	233.0	31.9	4.2	28.0	17.9	3.6
Depreciation	23	42.3	2.8	8.4	0.3	4.8	7.8	30.8	13.1	12.8	26.4	26.9	8.6
Total Primary Inputs	24	488.2	30.4	87.5	7.0	26.1	95.4	741.7	260.3	73.9	288.5	490.8	80.4
Total Inputs	25	786.7	34.8	193.3	9.0	40.3	545.8	1122.2	573.7	129.4	402.5	657.8	121.2

TRANSACTIONS 1961-62

Services to H/holds	Services to Govt.	Ownership of Property	Total Intermed. Sales	H/hold Purchases	Govt. Purchases	Exports	Stock Changes	Capital Formation	Total Final Buyers	Total Output		
13	14	15	16	17	18	19	20	21	22	23	24	
9.9	-	-	0.0	522.0	58.3	2.8	195.9	3.3	4.4	264.7	786.7	1
0.0	-	-	0.0	28.3	0.4	3.4	2.5	0.0	0.2	6.5	34.8	2
2.4	-	-	2.1	168.1	5.0	1.4	11.4	0.0	7.4	25.2	193.3	3
1.1	-	-	0.0	2.1	1.5	2.8	2.6	0.0	0.0	6.9	9.0	4
0.0	-	-	0.0	33.0	6.3	0.6	0.3	0.0	0.1	7.3	40.3	5
22.0	-	-	0.0	115.8	121.2	3.3	309.3	-3.8	0.0	430.0	545.8	6
24.0	-	-	6.9	410.2	524.2	19.4	17.6	2.8	148.0	712.0	1122.2	7
5.3	-	-	16.5	156.6	0.1	37.4	0.2	0.0	379.4	417.1	573.7	8
3.6	-	-	3.6	83.5	40.2	4.9	0.8	0.0	0.0	45.9	129.4	9
9.8	-	-	1.4	219.2	92.6	16.1	54.8	0.0	19.8	183.3	402.5	10
7.4	-	-	2.1	179.8	379.8	6.7	24.5	20.7	46.3	478.0	657.8	11
4.1	-	-	5.2	54.1	59.1	1.7	5.6	0.0	0.7	67.1	121.2	12
16.7	-	-	1.9	85.8	206.9	16.4	7.4	0.0	18.5	249.2	335.0	13
-	-	-	-	-	17.4	0.0	0.0	0.0	0.0	17.4	17.4	14
-	-	-	-	-	0.0	181.4	0.0	0.0	0.0	181.4	181.4	15
12.2	-	-	3.5	49.7	179.9	3.6	2.8	0.0	0.0	186.3	236.0	16
118.5	-	-	43.2	2108.2	1692.9	301.9	635.7	23.0	624.8	3278.3	5386.5	17
91.4	17.4	181.4	4.8	1413.6	0.0	0.0	0.0	0.0	0.0	0.0	1413.6	18
74.4	0.0	0.0	133.0	1022.4	0.0	10.4	0.0	0.0	0.0	10.4	1032.8	19
19.3	0.0	0.0	23.4	235.9	44.3	3.0	0.9	0.0	4.3	52.5	288.4	20
0.0	0.0	0.0	0.0	-31.8	-0.1	0.0	0.0	0.0	0.0	-0.1	-31.9	21
20.7	0.0	0.0	1.8	412.7	143.0	46.5	4.4	0.0	104.9	298.8	711.5	22
10.7	0.0	0.0	29.8	225.5	0.0	0.0	0.0	0.0	0.0	0.0	225.5	23
216.5	17.4	181.4	192.8	3278.3	187.2	59.9	5.3	0.0	109.2	361.6	3654.4	24
335.0	17.4	181.4	236.0	5386.5	1880.1	361.8	641.0	23.0	734.0	3639.9	9026.4	25

TABLE IV : NEW ZEALAND INTERINDUSTRY

		Farming	Forestry	Forestry Proc.	Hunting & Fishing	Mining	Pri. Prod. Proc.	Other Mfrg.	Bldg & Constr.	Public Utilities	Trans. & Comm.	W/sale & Retail Trade	Bnkg & Ins.
	1	2	3	4	5	6	7	8	9	10	11	12	
Farming	1	183.4	0.0	0.0	0.1	0.0	360.1	32.3	0.0	0.1	0.5	0.7	0.0
Forestry	2	1.2	0.0	26.2	0.0	0.1	0.1	0.1	0.2	0.6	0.1	0.1	0.0
Forestry Processing	3	8.0	0.1	48.1	0.1	0.0	6.9	31.5	60.5	0.8	1.6	14.2	1.1
Hunting & Fishing	4	0.2	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0	0.1	0.0	0.0
Mining	5	0.6	0.0	0.8	0.0	0.0	2.3	5.8	16.5	3.0	1.5	0.0	0.0
Pri. Prod. Proc.	6	4.8	0.0	0.0	0.0	0.0	70.5	18.0	0.0	0.0	1.4	3.9	0.0
Other Mfrg.	7	67.7	1.6	6.5	0.8	1.4	8.7	139.3	80.9	4.5	38.9	24.2	4.9
Building & Construction	8	4.4	0.5	1.1	0.1	2.1	0.9	3.7	87.4	1.4	5.3	8.6	7.5
Public Utilities	9	6.1	0.1	4.0	0.1	0.9	3.5	11.9	2.2	45.5	2.4	8.0	3.3
Transport & Communication	10	21.0	0.6	12.9	0.4	6.4	11.4	52.5	25.6	3.0	34.3	25.2	6.4
W/sale & Re- tail Trade	11	33.9	0.6	10.5	0.5	1.0	10.2	62.6	45.7	3.5	7.9	9.7	1.8
Banking & Insurance	12	3.1	0.2	2.0	0.1	0.6	0.9	5.5	3.8	0.6	1.2	22.1	3.0
Services	13	7.5	0.4	1.8	0.2	0.4	1.9	13.8	4.7	0.4	3.8	35.1	7.6
Services to Households	14	-	-	-	-	-	-	-	-	-	-	-	-
Services to Government	15	-	-	-	-	-	-	-	-	-	-	-	-
Ownership of Property	16	0.0	0.4	0.7	0.0	0.1	0.3	7.0	1.6	0.3	1.7	22.9	3.3
Total Intermediate Purchases	17	341.9	4.5	114.6	2.5	13.0	476.8	384.4	329.1	63.7	100.7	174.7	38.9
Wages & Salaries	18	87.6	13.4	43.9	3.0	14.4	60.6	301.1	155.2	18.6	179.8	232.2	61.2
Other Value Added	19	325.6	12.8	22.5	1.8	2.8	30.8	139.7	66.3	44.4	57.1	190.5	7.9
Indirect Tax	20	23.0	0.2	0.7	0.6	0.7	1.5	87.3	6.3	1.5	14.5	53.1	6.1
Subsidies	21	-2.4	-0.2	0.0	0.0	0.0	-16.6	-10.4	0.0	-1.0	-0.3	-0.2	-1.8
Imports	22	36.6	1.2	13.5	1.3	3.2	11.4	224.2	29.8	4.0	25.8	16.1	3.1
Depreciation	23	44.8	3.0	10.1	0.4	5.1	8.5	34.0	13.9	13.6	28.0	28.6	9.2
Total Primary Inputs	24	515.2	30.4	90.7	7.1	26.2	96.2	775.9	271.5	81.1	304.9	520.3	85.7
Total Inputs	25	857.1	34.9	205.3	9.6	39.2	573.0	1160.3	600.6	144.8	405.6	695.0	124.6

TRANSACTIONS 1962-63

Services to H/holds	Services to Govt.	Ownership of Property	Total Intermed. Sales	H/hold Purchases	Govt. Purchases	Exports	Stock Changes	Capital Formation	Total Final Buyers	Total Output		
13	14	15	16	17	18	19	20	21	22	23	24	
12.2	-	-	0.0	589.4	61.5	3.0	187.5	10.1	5.6	267.7	857.1	1
0.0	-	-	0.0	28.7	0.4	3.6	1.9	0.0	0.3	6.2	34.9	2
2.5	-	-	2.8	178.2	5.3	1.5	12.7	0.0	7.6	27.1	205.3	3
1.1	-	-	0.0	2.0	1.3	3.0	3.3	0.0	0.0	7.6	9.6	4
0.0	-	-	0.0	30.5	6.7	0.7	1.2	0.0	0.1	8.7	39.2	5
25.9	-	-	0.0	124.5	133.0	3.5	312.7	-0.7	0.0	448.5	573.0	6
25.1	-	-	9.4	413.9	545.6	21.0	16.9	10.6	152.3	746.4	1160.3	7
4.9	-	-	19.7	147.6	0.1	40.4	0.2	0.0	412.3	453.0	600.6	8
4.2	-	-	5.4	97.6	41.0	5.3	0.9	0.0	0.0	47.2	144.8	9
10.1	-	-	1.9	211.7	97.7	17.4	57.6	0.0	21.2	193.9	405.6	10
8.4	-	-	3.1	199.4	398.6	7.3	27.9	13.0	48.8	495.6	695.0	11
4.1	-	-	6.7	53.9	62.4	1.9	6.4	0.0	0.0	70.7	124.6	12
20.1	-	-	3.0	99.7	218.4	17.7	8.5	0.0	19.3	263.9	363.6	13
-	-	-	-	-	18.6	0.0	0.0	0.0	0.0	18.6	18.6	14
-	-	-	-	-	0.0	201.4	0.0	0.0	0.0	201.4	201.4	15
14.5	-	-	5.4	58.2	211.3	3.9	3.2	0.0	0.8	219.2	277.4	16
133.1	-	-	57.4	2235.3	1801.9	331.6	640.9	33.0	668.3	3475.7	5711.0	17
98.8	18.6	201.4	5.2	1495.0	0.0	0.0	0.0	0.0	0.0	0.0	1495.0	18
81.2	0.0	0.0	156.4	1139.8	0.0	13.0	0.0	0.0	0.0	13.0	1152.8	19
19.5	0.0	0.0	25.2	240.2	41.6	3.0	0.9	0.0	4.3	49.8	290.0	20
0.0	0.0	0.0	0.0	-32.9	-0.2	0.0	0.0	0.0	0.0	-0.2	-33.1	21
19.7	0.0	0.0	1.6	391.5	132.9	46.1	4.4	0.0	92.1	275.5	667.0	22
11.3	0.0	0.0	31.6	242.1	0.0	0.0	0.0	0.0	0.0	0.0	242.1	23
230.5	18.6	201.4	220.0	3475.7	174.3	62.1	5.3	0.0	96.4	338.1	3813.8	24
363.6	18.6	201.4	277.4	5711.0	1976.2	393.7	646.2	33.0	764.7	3813.8	9524.8	25

TABLE V : NEW ZEALAND INTERINDUSTRY

		Farming	Forestry	Forestry Proc.	Hunting & Fishing	Mining	Pri. Prod. Proc.	Other Mfrg.	Bldg & Constr.	Public Utilities	Trans. & Comm.	W/sale & Retail Trade	Bnkg & Ins.
		1	2	3	4	5	6	7	8	9	10	11	12
Farming	1	207.5	0.0	0.0	0.1	0.0	416.1	33.2	0.0	0.1	0.5	0.8	0.0
Forestry	2	1.4	0.0	28.0	0.0	0.1	0.1	0.1	0.2	0.7	0.1	0.2	0.0
Forestry Processing	3	9.6	0.1	52.1	0.1	0.0	8.4	34.3	64.2	0.9	1.9	17.7	1.1
Hunting & Fishing	4	0.2	0.0	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.1	0.0	0.0
Mining	5	0.8	0.0	0.9	0.0	0.0	3.0	6.6	18.5	3.5	2.0	0.0	0.0
Pri.Prod.Proc.	6	4.7	0.0	0.0	0.0	0.0	70.8	16.1	0.0	0.0	1.4	4.0	0.0
Other Mfrg.	7	92.8	1.8	8.1	0.8	1.8	12.2	173.1	98.2	5.8	54.3	34.5	5.8
Building & Construction	8	4.9	0.4	1.3	0.1	2.2	0.9	3.7	85.6	1.4	6.0	9.9	7.0
Public Utilities	9	7.2	0.1	4.3	0.1	1.1	4.3	12.7	2.3	49.7	2.9	9.8	3.2
Transport & Communication	10	26.7	0.6	14.8	0.3	7.8	14.8	60.5	28.7	3.6	44.4	33.4	6.9
W/sale & Re- tail Trade	11	40.8	0.6	11.4	0.4	1.1	12.5	68.3	48.7	3.9	9.7	12.2	1.9
Banking & Insurance	12	4.0	0.2	2.2	0.1	0.7	1.2	6.3	4.2	0.7	1.6	29.1	3.2
Services	13	10.8	0.4	2.3	0.2	0.6	1.4	18.0	6.0	0.5	5.5	52.3	9.3
Services to Households	14	-	-	-	-	-	-	-	-	-	-	-	-
Services to Government	15	-	-	-	-	-	-	-	-	-	-	-	-
Ownership of Property	16	0.0	0.4	0.7	0.0	0.1	0.3	7.4	1.6	0.2	2.0	27.9	3.5
Total Intermediate Purchases	17	411.4	4.6	126.1	2.3	15.5	546.1	440.6	358.2	71.0	132.4	231.8	41.9
Wages & Salaries	18	93.4	15.0	46.8	3.2	14.8	61.6	329.6	169.2	19.6	186.4	249.2	66.6
Other Value Added	19	379.8	13.4	28.2	1.9	3.0	31.4	175.0	71.3	49.8	61.5	205.0	8.5
Indirect Tax	20	25.9	0.3	0.7	0.7	0.7	1.7	98.5	7.1	1.7	16.4	59.9	6.8
Subsidies	21	-2.2	-0.1	0.0	0.0	0.0	-16.8	-10.4	0.0	-1.0	-0.3	-0.1	-1.8
Imports	22	40.2	1.2	15.1	1.3	3.3	12.0	277.3	33.0	4.3	26.0	16.2	3.1
Depreciation	23	47.3	3.2	10.8	0.4	5.3	8.8	36.8	14.6	14.4	29.5	30.2	9.7
Total Primary Inputs	24	584.4	33.0	101.6	7.5	27.1	98.7	906.8	295.2	88.8	319.5	560.4	92.9
Total Inputs	25	995.8	37.6	227.7	9.8	42.6	644.8	1347.4	653.4	159.8	451.9	792.2	134.8

TRANSACTIONS 1963-64

Services	Services	Services	Ownership	Total	H/hold	Govt.	Exports	Stock	Capital	Total	Total	
	to	to	of	Intermed.	Purchases	Purchases		Changes	Formation	Final	Output	
	H/holds	Govt.	Property	Sales						Buyers		
13	14	15	16	17	18	19	20	21	22	23	24	
12.2	-	-	0.0	670.5	58.8	2.8	251.3	6.7	5.7	325.3	995.8	1
0.0	-	-	0.0	30.9	0.4	3.5	2.5	0.0	0.3	6.7	37.6	2
2.7	-	-	3.1	196.2	5.0	1.5	17.8	0.0	7.2	31.5	227.7	3
0.8	-	-	0.0	1.6	1.5	2.8	3.9	0.0	0.0	8.2	9.8	4
0.0	-	-	0.0	35.3	6.4	0.6	0.2	0.0	0.1	7.3	42.6	5
22.4	-	-	0.0	119.4	146.2	3.4	364.2	11.6	0.0	525.4	644.8	6
30.3	-	-	11.9	531.4	597.3	20.1	19.6	26.3	152.7	816.0	1347.4	7
4.8	-	-	20.0	148.2	0.1	38.7	0.3	0.0	466.1	505.2	653.4	8
4.4	-	-	5.9	108.0	45.6	5.1	1.1	0.0	0.0	51.8	159.8	9
11.3	-	-	2.2	256.0	93.6	16.7	62.8	0.0	22.8	195.9	451.9	10
9.0	-	-	3.4	223.9	440.8	7.0	32.1	39.4	49.0	568.3	792.2	11
4.6	-	-	7.8	65.9	59.7	1.8	7.4	0.0	0.0	68.9	134.8	12
25.3	-	-	3.9	136.5	209.1	16.9	9.7	0.0	18.3	254.0	390.5	13
-	-	-	-	-	20.2	0.0	0.0	0.0	0.0	20.2	20.2	14
-	-	-	-	-	0.0	218.6	0.0	0.0	0.0	218.6	218.6	15
15.0	-	-	5.8	64.9	231.1	3.7	3.7	0.0	0.8	239.3	304.2	16
142.8	-	-	64.0	2588.7	1915.8	343.2	776.6	84.0	723.0	3842.6	6431.3	17
107.0	20.2	218.6	6.0	1607.2	0.0	0.0	0.0	0.0	0.0	0.0	1607.2	18
86.2	0.0	0.0	171.6	1286.6	0.0	13.6	0.0	0.0	0.0	13.6	1300.2	19
22.0	0.0	0.0	27.6	270.0	42.2	3.4	1.0	0.0	4.9	51.5	321.5	20
0.0	0.0	0.0	0.0	-32.7	-0.1	0.0	0.0	0.0	0.0	-0.1	-32.8	21
20.5	0.0	0.0	1.6	455.1	148.8	54.4	4.5	0.0	111.8	319.5	774.6	22
12.0	0.0	0.0	33.4	256.4	0.0	0.0	0.0	0.0	0.0	0.0	256.4	23
247.7	20.2	218.6	240.2	3842.6	190.9	71.4	5.5	0.0	116.7	384.5	4227.1	24
390.5	20.2	218.6	304.2	6431.3	2106.8	414.6	782.1	84.0	839.7	4227.1	10658.4	25

TABLE VI : NEW ZEALAND INTERINDUSTRY

		Farming	Forestry	Forestry Proc.	Hunting & Fishing	Mining	Pri. Prod. Proc.	Other Mfrg.	Bldg & Constr.	Public Utilities	Trans. & Comm.	W/sale & Retail Trade	Bankg & Ins.
		1	2	3	4	5	6	7	8	9	10	11	12
Farming	1	202.0	0.0	0.0	0.1	0.0	471.3	36.2	0.0	0.1	0.6	0.8	0.0
Forestry	2	1.6	0.0	31.1	0.0	0.1	0.1	0.1	0.2	0.8	0.2	0.2	0.0
Forestry Processing	3	10.5	0.2	55.6	0.1	0.0	10.7	42.0	67.7	1.0	2.5	19.0	1.4
Hunting & Fishing	4	0.2	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0	0.1	0.0	0.0
Mining	5	0.8	0.0	0.9	0.0	0.0	3.6	7.6	18.5	3.9	2.4	0.0	0.0
Pri.Prod.Proc.	6	2.6	0.0	0.0	0.0	0.0	44.3	9.7	0.0	0.0	0.9	2.1	0.0
Other Mfrg.	7	105.4	2.2	8.9	1.0	1.9	16.1	220.8	107.8	6.9	73.0	38.5	7.4
Building & Construction	8	5.1	0.5	1.3	0.2	2.0	1.2	4.4	86.8	1.5	7.4	10.2	8.3
Public Utilities	9	7.8	0.1	4.5	0.1	1.0	5.4	15.3	2.4	56.3	3.8	10.4	4.0
Transport & Communication	10	31.2	0.7	16.9	0.4	8.2	20.1	79.4	32.4	4.4	61.4	38.4	9.1
W/sale & Retail Trade	11	48.5	0.8	13.3	0.5	1.2	17.3	91.3	56.0	4.9	13.6	14.2	2.5
Banking & Insurance	12	5.0	0.3	2.8	0.1	0.8	1.7	9.0	5.2	1.0	2.5	36.3	4.6
Services	13	12.6	0.5	2.7	0.3	0.6	1.9	23.7	6.8	0.6	7.7	60.3	12.2
Services to Households	14	-	-	-	-	-	-	-	-	-	-	-	-
Services to Government	15	-	-	-	-	-	-	-	-	-	-	-	-
Ownership of Property	16	0.0	0.4	0.7	0.0	0.1	0.4	8.7	1.6	0.3	2.5	28.4	3.9
Total Intermediate Purchases	17	433.3	5.7	138.7	2.9	15.9	594.2	548.6	385.4	81.7	178.6	258.8	53.4
Wages & Salaries	18	101.8	17.6	51.7	3.6	15.8	66.2	368.9	196.8	20.6	204.8	275.0	74.2
Other Value Added	19	387.8	14.2	34.1	2.1	3.3	27.2	193.9	78.4	53.6	67.6	225.1	9.3
Indirect Tax	20	28.4	0.3	0.8	0.8	0.8	1.9	108.1	7.8	1.9	18.0	65.7	7.5
Subsidies	21	-2.7	-0.2	0.0	0.0	0.0	-20.6	-11.6	0.0	-1.0	-0.4	-0.2	-1.8
Imports	22	38.0	1.2	15.5	1.2	3.6	12.6	300.6	33.0	4.5	28.2	17.9	3.6
Depreciation	23	50.4	3.4	10.9	0.4	5.7	9.7	41.7	15.6	15.3	31.5	32.1	10.3
Total Primary Inputs	24	603.7	36.5	113.0	8.1	29.2	97.0	1001.6	331.6	94.9	349.7	615.6	103.1
Total Inputs	25	1037.0	42.2	251.7	11.0	45.1	691.2	1550.2	717.0	176.6	528.3	874.4	156.5

TRANSACTIONS 1964-65

Services	Services	Services	Ownership	Total	Household	Govt.	Exports	Stock	Capital	Total	Total	
	to	to	of	Intermed.	Purchases	Purchases		Changes	Formation	Final	Output	
	H/holds	Govt.	Property	Sales						Buyers		
13	14	15	16	17	18	19	20	21	22	23	24	
12.8	-	-	0.0	723.9	60.8	3.2	227.0	15.7	6.4	313.1	1037.0	1
0.0	-	-	0.0	34.4	0.4	4.0	3.2	0.0	0.2	7.8	42.2	2
3.1	-	-	3.3	217.1	5.2	1.7	20.0	0.0	7.7	34.6	251.7	3
1.0	-	-	0.0	1.9	1.3	3.2	4.5	0.0	0.1	9.1	11.0	4
0.0	-	-	0.0	37.7	6.6	0.7	0.1	0.0	0.0	7.4	45.1	5
13.0	-	-	0.0	72.6	159.6	3.9	426.0	29.1	0.0	618.6	691.2	6
37.1	-	-	13.0	640.0	666.9	22.9	25.2	20.1	175.1	910.2	1550.2	7
5.4	-	-	20.2	154.5	0.1	44.1	0.3	0.0	518.0	562.5	717.0	8
5.1	-	-	6.1	122.3	47.4	5.8	1.1	0.0	0.0	54.3	176.6	9
14.3	-	-	2.4	319.3	96.6	19.1	68.5	1.1	23.7	209.0	528.3	10
11.5	-	-	3.9	279.5	474.6	8.0	33.6	26.9	51.8	594.9	874.4	11
6.2	-	-	9.6	85.1	61.6	2.1	7.7	0.0	0.0	71.4	156.5	12
32.0	-	-	4.4	166.3	215.9	19.3	10.2	1.1	20.0	266.5	432.8	13
-	-	-	-	-	22.0	0.0	0.0	0.0	0.0	22.0	22.0	14
-	-	-	-	-	0.0	241.2	0.0	0.0	0.0	241.2	241.2	15
16.7	-	-	5.8	69.5	252.5	4.2	3.9	0.0	0.9	261.5	331.0	16
158.2	-	-	68.7	2924.1	2071.5	383.4	831.3	94.0	803.9	4184.1	7108.2	17
120.6	22.0	241.2	7.4	1788.2	0.0	0.0	0.0	0.0	0.0	0.0	1788.2	18
94.0	0.0	0.0	186.6	1377.2	0.0	15.2	0.0	0.0	0.0	15.2	1392.4	19
24.1	0.0	0.0	31.2	297.3	45.0	3.7	1.1	0.0	5.3	55.1	352.4	20
0.0	0.0	0.0	0.0	-38.5	-0.2	0.0	0.0	0.0	0.0	-0.2	-38.7	21
23.1	0.0	0.0	1.6	484.6	151.6	55.1	5.1	0.0	119.9	331.7	816.3	22
12.8	0.0	0.0	35.5	275.3	0.0	0.0	0.0	0.0	0.0	0.0	275.3	23
274.6	22.0	241.2	262.3	4184.1	196.4	74.0	6.2	0.0	125.2	401.8	4585.9	24
432.8	22.0	241.2	331.0	7108.2	2267.9	457.4	837.5	94.0	929.1	4585.9	11694.1	25

TABLE VIII : INTERDEPENDENCE COEFFICIENTS 1964-65

1.252408	0.003959	0.005946	0.017778	0.006150	0.915234	0.044330	0.011017	0.005862	0.012249	0.012071	0.010016	0.075141	0.004169
0.005405	1.001346	0.159902	0.002955	0.004357	0.007314	0.006198	0.019459	0.008702	0.002827	0.004967	0.003650	0.003051	0.003452
0.026853	0.010335	1.293773	0.022571	0.014583	0.044324	0.047386	0.152402	0.018502	0.018838	0.037302	0.027244	0.022353	0.026374
0.000370	0.000070	0.000123	1.007221	0.000143	0.000485	0.000400	0.000158	0.000072	0.000408	0.000237	0.000268	0.002576	0.000077
0.002974	0.001143	0.006981	0.002012	1.003997	0.008668	0.007329	0.032198	0.033317	0.007275	0.002053	0.003807	0.002477	0.003202
0.005629	0.001228	0.002041	0.002413	0.002052	1.073393	0.009506	0.003104	0.001312	0.004372	0.006124	0.003997	0.036416	0.001336
0.170625	0.073904	0.097168	0.136683	0.104996	0.166861	1.199761	0.239278	0.088650	0.199319	0.085732	0.100918	0.141486	0.072532
0.011654	0.016438	0.016315	0.019984	0.059668	0.013179	0.009557	1.146995	0.019859	0.022206	0.022631	0.069547	0.023076	0.074629
0.020187	0.008197	0.041026	0.019986	0.039807	0.029963	0.023262	0.019031	1.471840	0.017827	0.025668	0.045559	0.026496	0.032264
0.062213	0.028336	0.117559	0.061265	0.221557	0.089424	0.084092	0.100574	0.059872	1.152186	0.068704	0.087553	0.061186	0.024678
0.075572	0.026245	0.085369	0.066300	0.047166	0.088837	0.082045	0.119773	0.053150	0.047332	1.032461	0.037368	0.048962	0.027104
0.011979	0.010564	0.022058	0.016511	0.022956	0.014155	0.013104	0.018934	0.012740	0.010144	0.048337	1.036432	0.021956	0.033512
0.027625	0.018777	0.029437	0.036399	0.025550	0.028288	0.030080	0.030560	0.014291	0.026794	0.084920	0.094767	1.091075	0.022548
0.005355	0.012422	0.011205	0.005287	0.007555	0.006777	0.011752	0.010896	0.006439	0.009602	0.039699	0.032538	0.046293	1.021191

APPENDIX I

Comparison of Interindustry Estimates with
National Income
1964-65

	National Income \$mn.	Interindustry \$mn.
Wages and salaries	1,755	1,788.2
Other value added (incl. public authority trading income)	1,338	1,392.4
Public debt interest paid in New Zealand	<u>-95</u>	<u> </u>
National income at factor cost	2,998	3,180.6
Indirect taxation	276	352.4
Subsidies	<u>-35</u>	<u>-38.7</u>
National income at market prices	3,238	3,494.3
Depreciation	<u>249</u>	<u>275.3</u>
Gross national product	3,487	3,769.6
Personal consumption	2,132	2,267.9
Public authority current exp.	460	457.4
Gross domestic capital form'n.	812	929.1
Change in stocks	97	94.0
Exports	838	837.5
Imports	<u>-793</u>	<u>-816.3</u>
Expenditure on gross domestic product	3,546	3,769.6
Net factor payments to rest of world	<u>-59</u>	
Expenditure on gross national product	3,487	

APPENDIX II

Composition of Sectors

Sectors Used in Aggregated Model	Sector Numbers in Government Statistician's 110-Sector Model
1. Farming	1.
2. Forestry and Logging	3.
3. Forest Processing	36 to 41, 45 to 47.
4. Hunting	2.
5. Mining	4.
6. Primary Produce Processing	5, 6, 8, 9.
7. Other Manufacturing	7, 10 to 35, 42 to 44, 48 to 93.
8. Building and Construction	94 to 97.
9. Public Utilities	98, 99.
10. Transport and Communication	102 to 106.
11. Wholesale and Retail Trade	100.
12. Banking and Insurance	101.
13. Services	107.
14. Services to Households	109.
15. Services to Government	110.
16. Ownership of Property	108.

Detailed definitions of the composition of sectors may be found in Department of Statistics, Inter-Industry Study of the New Zealand Economy 1959-60, Part 1, Transactions Between 110 Productive Industries at Producers' Prices, 1966, pp.24-27.

APPENDIX III

Major Sources of Data

AVIATION INDUSTRY ASSOCIATION OF NEW ZEALAND, INC.
Annual report,
Avinews.

EASTON, B.H.
Consumption in New Zealand 1954-5 to 1964-5, 1967.
(New Zealand Institute of Economic Research,
Research Paper No. 10.)

NEW ZEALAND DEPARTMENT OF LABOUR
Labour and employment gazette.

NEW ZEALAND DEPARTMENT OF STATISTICS
Balance of payments.
Census of building and construction.
Census of distribution.
Exports.
External trade.
External trade, report on, and analysis of.
Farm production.
Imports (pt.A) commodity by country.
Incomes and income tax.
Industrial production.
Insurance.
Local authority statistics.
Monthly abstract of statistics.
Monthly abstract of statistics supplements as
detailed below:
Accounts of the government sector,
Census of mining and quarrying 1963-64,
Gross domestic product in constant prices,
Industrial classification of salary and wage
payments,

Appendix III (cont'd)

Manufacturers' stocks,
Productivity and volume of production indexes,
Retail trade,
Wholesale trade,
National income and expenditure.
New Zealand official yearbook.
Population, migration and building.
Prices, wages and labour.
Transport.

NEW ZEALAND PARLIAMENT, HOUSE OF REPRESENTATIVES
Appendices to the journals.

NEW ZEALAND MILK BOARD
Annual reports.

PHILPOTT, B.P., ROSS, B.J., MCKENZIE, C.J.,
YANDLE, C.A., AND HUSSEY, D.D.,
Estimates of farm income and productivity in
New Zealand, 1921-1965, 1967, (Agricultural
Economics Research Unit Publication No. 30).

RABBIT DESTRUCTION COUNCIL
Annual reports.

R E P R I N T S
(Available on Request)

1. R.C. Jensen, "Economics of Pasture Insect Control",
Proceedings of the 20th N.Z. Weed & Pest Control
Conference 1967, pp.135-149.
2. R.H. Court, "Supply Response of N.Z. Sheep Farmers",
The Economic Record, Vol. 43, June 1967, pp.289-302.
3. J.L. Morris & R.G. Cant, "The Labour Position on the Farm",
The Proceedings of the 17th Lincoln Farmers'
Conference 1967, pp.55-61.
4. R.W.M. Johnson, "Income & Productivity in Agriculture",
The Proceedings of the 17th Lincoln Farmers'
Conference 1967, pp.46-54.
5. A.T.G. McArthur & K.T. Sanderson, "An Assessment of the
Value of Pastoral Development in Northland",
Proceedings of the 29th Conference of the N.Z.
Grassland Association, 1967, pp.64-77.
6. J.W.B. Guise, "Economic Factors Associated with Variation
in Aggregate Wheat Acreage in N.Z. (1945-65)",
N.Z. Economic Papers, Vol. 2, No.1, pp.38-54, 1968.
7. A.T.G. McArthur, "'Effective Number' as a Measure of Source
and Destination Diversity". Journal of Marketing
Research. Vol. V, (Feb. 1968), pp.99-100.
8. R.H. Court, "Utility Maximization and the Demand for N.Z.
Meats". Econometrica, Vol. 35, No.3-4, July-October
1967, pp.424-445.
9. R.G. Cant. "A Case Study in Outmigration : Movement of
Adult Farm Workers from the Selwyn-Ashburton Electoral
District During the Period 1963-1966". The Proceedings
of Fifth N.Z. Geography Conference, N.Z. Geographical
Society (Inc.), Auckland, 1967, pp.41-48.
10. A.T.G. McArthur & K.T. Sanderson. "Value of Farm Development
in Northland". Reprinted from the Proceedings of
Fifth N.Z. Geography Conference, N.Z. Geographical
Society (Inc.), Auckland, 1967, pp.49-57.
11. B.P. Philpott. "Overseas Trends Affecting New Zealand
Agriculture". The Proceedings of the 18th Lincoln
Farmers' Conference, 1968", pp.97-110.

Reprints (cont'd)

12. R.H. Court. "An Application of Demand Theory to Projecting New Zealand Retail Consumption".
Extract from The Economic Record, 1968.
13. B.P. Philpott. "The Wool Marketing Study Group Report",
Extract from Sheepfarming Annual 1968: 87-101.

Canterbury Chamber of Commerce Agricultural Bulletins

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