Interindustry Forecasting Project
University of Maryland

Research Memorandum No. 1
The CBE Tape for the 1958 Table

By

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The most complete form of the 1958 table is a tape obtained

from OBE containing 8189 card images. We have put this tape into

a form readable by Fortran, and a copy or a listing of the tape

is available to patrons on request. At present, the tape does

not contain the additional detail in food, non ferrous metals,

and utilities published by OBE in March 1966. It does, however,

provide much more information than does the published table on

such subjects as the stage at which an allocation was made--on

firm, independent data, or during the reconciliation process,--

which flows are primary and which are secondary transfers, how much

transportation or trade or tax margin separates the purchaser's

price from the producer's price in each entry, and how much of

a flow represents by-products or scrap. The attached photostat

of the card layout shows what is found where on the cards.

Physically, the tape consists of a one card header with the

words"HDR--1958 FLOWS--CONS SORT-- OCTAL40 ZONE", followed by 8189

card images(which may be read by a Fortran program just as if

they were a data deck),followed by an end of file mark. The

tape is written at 800 BPI. The sector numbers are the same as

those used in the September 1966 Survey of Current Business, with
the following additions:

    87 Inventory valuation adjustment

    88 Value added

            Final demand

    92 Personal consumption expenditures

    93 Gross private fixed capital

    94 Net inventory change

    95 Exports of goods & services

    96 Imports of goods & services

    97 Federal government purchases

    98 State & local government purchases

The only trick to understanding these cards lies in interpreting
the "group" code punched in columns 7 and 8 of each card. This
memorandum elaborates OBE's explanation of these ten codes. The
meaning of several of the groups hinges on the distinction between
product classes and industries, a distinction made none the clearer
by the fact that we use the same set of names for industries which

we use for the product classes. An Establishment is classified

into the four-digit industry having the name of the four-digit

product class into which the largest fraction of its products fall.

For example, if an establishment has the following shipments:

SIC	Product name	Shipments
3585	Refrigeration machinery	$450,000
3632	Household refrigerators	$400,000
3443	Heat exchangers	$150,000
	Total	$1000,000

then this establishment will be classified in 3585, though less

than half of its products are in this class. All establishments

identified in this way as Refrigeration Machinery establishments

compose the Refrigeration Machinery Industry. In the input-output

table, we deal with aggregation of four-digit industries and of four

digit product groups. We can now explain several of the card groups.

Groups 10 and 11 Direct Allocations (3888 #10 cards, 1766 #11 cards)

These cards show the use of a product in the row product group

by the industry in the column industry group. The distinction be-

tween the 10 and the 11 seems to be that the 10's were done first

on the basis of rather firm evidence while the 11's are often

additions to a 10 entry made during the final reconciliation.

FIGUIRE 1.

ROW	COL	GRP	PROD PRICES
16	59	10	47862
16	59	11	2686
			50548

(All dollar figures here and subsequently in thousands)

Thus, in Figure 1, we see that the analyst first allocated $47862 of Fabrics and Yarn (product class 16) to establishments in the Automobile industry (59). Later, during reconciliation of the table, he added $2686 more to this flow. The total, $50548, does not appear on the tape.

Group 20 Transfers (1915 . #20 cards) These cards show the amount of products belonging to the column product group produced in establishments belonging to the row industry group. Thus the card shown in Figure 2 tells us that $36000 thousand of Stone and

FIGURE 2

ROW	COL	GROUP	PRODUCER PRICES
32	36	20	36000

Clay products (class.36) were produced in establishments classified in Rubber and Plastic Products Industry, (Industry 32). All of the inputs into the two dummy industries, Business Travel and Entertainment (81) and Office Supplies (82) appear on group 20 cards.

Group 12 and 22 By-product adjustments (18 #12 cards, 2 #22 cards).

In the 10, 11, and 20 cards, no distinction was made between main products and by-products. For example, in Figure 3 we see a 10 card showing a sale of $207599 thousand from food products (14) to leather tanning (33). Of course, nearly all of this amount represents hides*, a by-product of the food industry. Because by-products should not be allowed to generate output--we are not likely to start slaughtering steers just for their hides--these entries should be removed before using the matrix for analysis. The 12 cards do exactly this.

Figure 3

ROW	COL	GROUP	PROD PRICES
14	33	10	207599
14	33	12	- 205562
14	14	12	317753
37	27	22	-- 86898
37	68	22	- 36435

The second card shows that $205,562 thousand of the original flow was by-products and is removed by the second card. What shall we do with that $205,562,000 worth of hides? The official solution was to dump it into the diagonal of the hide producer (14), and we see that the third card of Figure 3 does exactly that. (The 317753 in the sum of all by-products of the food industry.) An alternative treatment with a by-products now would be possible. Nearly all the by-products are connected with either food or chemicals.

There are only two cards in group 22; both are shown in Figure 2. By-products of Iron and Steel(37) were primary to Basic Chemicals(27) and Utilities (68)--gas from coke ovens?--and were transfered to these industries on group 20 cards. These two cards remove these transfers to keep demand for by-products from causing production. These transfers are simply lost; OBE doesn't put them anywhere.

Groups 13 and 23, Scrap adjustment. (85 #13 cards, 36 #23 cards)

All scrap is transfered on group 20 cards to the Scrap column (83); Scrap-using industries then buy from 831 In Figure 4, the first card shows scrap production by the Automobile industry (59) of $134,096. The second card shows Iron and Steel (37) buying $572449 of scrap.

Figure 4

ROW	COL	GRP	PROD PRICES
59	83	20	134096
83	37	10	572449
59	83	23	-134096
83	37	13	-572449
59	59	13	134096

Because we don't expect the steel industry's demand for scrap to

force the automobile industry to make cars, we need to cancel these

entries before using the matrix for impact analysis. The group 23

cards knock out the allocation of scrap to 83; a positive entry on

a group 13 wipes out the purchase of scrap by the scrap user. Piling

the scrap onto the diagonal makes sense in that it makes scrap

consumption proportional to scrap output, that is, proportional to

the output of the scrap-producing industry. On the other hand it

turns the diagonal entry into a veritable junk yard. An alternative
                                                              scrap
would be to delete the scrap column and make a negative entry in the/

row of the scrap producing industries. The scrap balance could then

be computed after all the outputs are determined.

Group 15, Margin cards. (185 #15 cards)

These cards show transportation (row 65) trade (69) and insur-

ance(70) margins. The nature of the margin is shown by the "row"

field; the "producer price" field contains the total margins on

all materials used by the industry of the "column" field; and the

purchase price field contains the margins on the products of this

industry. Thus the first card of figure 7 shows a transportation

margin of 79722 on the inputs into Miscellaneous Manufacturing (64)
while the transportation charges on the products produced by this
industry total 144152. This arrangement of the margin cards makes
it possible to print a table in producer prices or in purchaser:
prices by selecting the entries from ohly one or the other field
of the cards..

Figure . 5

ROW	COL	GRP	PROD PRICES	PURCHASER PRICES
65	64	15	79722	144152
69	64	15	229859	2294894
70	64	15	853	0

Groups 30 and 35 Import Rearrangement cards (133 # 30 cards, 161
#35 cards) These cards will not be used by us. The 30 cards wipe
clean the import column and move these competitive imports into
the corresponding domestic industry. The 35 cards add the margins for
these imports to the margins of this competitive industry.