COMMISSION OF THE EUROPEAN COMMUNITIES
DIRECTORATE-GENERAL COMPETITION
IV/A-3

A STUDY OF THE EVOLUTION OF CONCENTRATION IN THE FOOD INDUSTRY IN THE NETHERLANDS

COMMISSION OF THE EUROPEAN COMMUNITIES
DIRECTORATE-GENERAL COMPETITION
IV/A-3

A STUDY OF THE EVOLUTION OF CONCENTRATION IN THE FOOD INDUSTRY IN THE NETHERLANDS

09/74-E

REPORT ON CONCENTRATION IN THE DUTCH FOOD INDUSTRY

BY

Dr. H.W. de Jong,
Professor of Economics
Nijenrode, Instituut voor Bedrijfskunde, Breukelen,
The Netherlands
in collaboration with
Drs. W. Karssen
Drs. C. Klopper
Drs. R. de Lange
Drs. A.H. Smolders

April, 1974

CONTENTS

Part 1: General Report

Report on Concentration in the Dutch Food Industry

1. Introduction

This report has as its primary aim to give an idea of the development of concentration in the Dutch food industry in general during the period 1964-1971; the food industry is for the purpose of this coordinated Common Market investigation, to be defined as including all industrial sectors producing food products, with the exception of drinks and tobacco.
Trading activities in food products have been systematically eliminated, while the geographical area of manufacturing is restricted to the Netherlands.
Agricultural production -comprising the raising of food products on the soil by farmers, fruit and vegetables growers, etc.- or fisheries are strictly excluded. Attention is thus confined to the manufacturing and processing food industry.
This is nevertheless a large branch of industry in the Netherlands. As the figures of table 1 indicate, the number of firms with more than 10 employees was more than 1500 in 1964, and notwithstanding a decline, there remained over 1200 firms in 1971 with some 125,000 employees and a total sales value of more than Fls. 20,000 million ($ 5,710 million

2. Methods of Research

The research was carried out on the basis of the data provided by the General Industrial Statistics of the Central Bureau of Statistics, the Hague. All firms with more than 10 employees have been taken as the base material; however the relevant calculations for the concentration- and variation-coefficients were made on the basis of the following criteria for the separate variables:

- for employees, the companies with more than 100 employees were taken into account.

- for domestic sales, the cut-off point was Fls. 10 million.
- for export sales, the cut-off point was Fls. 5 million.
- for investments, the firms investing annually in excess of Fls. 2 million (before 1966) and Fls. 3 million (between 1966 and 1971) were taken into account.
  These demarcation lines provided groups of the largest firms, on which the quantitative concentration studies were performed.
- for the calculation of concentration-indices relating to the wage-bill some problems appeared. There were differences in the reporting card systems and it was not always clear whether the wage-bill referred to firms or plants.
  Moreover, the C.B.S. survey covered only companies with more than 500 employees and, most important, no wage-bill figures were available for the food industry as a whole (this is one of the exceptions pertaining to Dutch sectoral statistics in this field). As a result of these deficiences it turned out to be impossible to calculate the concentration ratios, Herfindahl-, Gini- and Entropy-indices for the wage-bill variable, and, consequently, only Linda-indices are computed. Also, for companies with less than 500 employees for which the exact data were not available some wage-bill figures were estimated by means of applying averages found from known companies; this procedure does not seem to give rise to more than minor deviations.

The companies included by the criteria mentioned were analysed separately. For each variable, the fourty or so largest companies were taken apart and concentration ratios - where possible - were calculated for the 4, 8, 12, 20, 30 and 40 largest firms. The other companies, falling under the criteria mentioned, were divided into size-classes; the number of classes was chosen in accordance with the variable at hand. The total number of companies under the criteria is mentioned in the first column of each table, following the year stated. The variation coefficients, Herfindahl and Entropy-indices were calculated by taking into account all the firms in the food sector.
The procedure followed was to establish a linear extrapolation for the values of the firms belonging to the group outside the criteria enumerated above.

For control purposes, it was evaluated for the concentration indices relating to a particular variable, which part of the sum of firms enumerated by the General Industrial Statistics was covered by the firms under the criteria; also, in respect of the calculated Linda indices, which part of the G.I.S. was covered by the 40 or 50 largest companies. The results of these tests are to be found in table 2, 3, 4 and 5, giving the percentages per annum and on average for the whole period.
Finally, a list of mergers in the Dutch food industry covering the years 1964-1971 has been prepared (page 8) and a short comment is added. More detailed remarks will be provided in the sub-sector reports.

3. The Results

a. The coefficients of dispersion

For the variable employees, both the variation-coefficient and the Gini-coefficient have a tendency to increase, reflecting an increasing disparity in the size relationships of the largest companies. The number of firms with more than 100 employees declined by some 72 units, or about one-sixth to one-seventh of the original total. This points to increasing absolute concentration, which went hand in hand with an increasing relative concentration.
A similar development is to be seen for the variables domestic sales and exports, though the tendencies mentioned were stronger for exports. For both variables, the two coefficients rose 15% or more throughout the years, with a marked jump during the final years. Dispersion coefficients relating to investments show a decline for the variation coefficient and a rise for the Gini-coefficient.

b. The concentration ratios provide us with a similar picture: for the variable employees, the C4 ratio increased by 3.5 percentage points, the following ratios (C8, C12) adding only 1 percentage point to the total rise, and the group of the firms making up the difference between C20 and C30 adding 2 percentage points. Finally, the bottom class of 10 firms did not raise the concentration ratio. These tendencies are also apparent in the concentration ratios of domestic sales and export sales, again on an increased scale. Whereas the top 4 companies in the food industry increased their concentration ratio for employees

by 3.5 percentage points, the increase for the variable domestic sales was 5 percentage points and for the variable exports no less than 11.5 percentage points.

For the next size groups of firms (i.e. the 20 to 40 largest firms) the rises were more modest, but nevertheless for the latter two variables (domestic sales and exports) double the amounts of the variable employees.

We thus retain the following conclusions:

1. Concentration in the food industry increased generally for the 40 or so largest firms.
2. The general increase in concentration was however not evenly spread; in fact, the largest firms among this group of the 40 or so largest firms pushed up the concentration ratios more than proportionately for all these variables, but not including investments. As to investments, concentration did not change for the share of the four largest companies and only to a small extent for the eight largest. The group of the twelve and higher largest investing firms did however increase its share by some 7 to 11 percentage points throughout the years.
3. The rise in concentration ratios accelerated during the last three years under review (1969-1971).
   In 1969 there was a decline as compared with previous years, but the level of concentration in subsequent years was generally lifted over the level attained in 1967/68.

The causes of the rise in concentration in general and its more than proportional rise among the top group and during the later years appear to be:

- a constant stream of mergers among food companies, swelling in 1969, 1970 and 1971. The later years have seen some important mergers influencing the outcome. Among these were the dairy mergers of 1969-1970, constituting the cooperative milk producers organisations, which have been counted as mergers, because they led to organisations coordinating and integrating the market behavior of the producers. For a more detailed account of the development of the dairy sector, see the accompanying report. Besides, the meat processing activities of two giant Dutch firms, Unilever and Akzo were united in 1971 under the control of Unilever, while the cooperative meat interests were united

by means of centralisation in the hands of Coveco (see the report on the meat canning industry). A third field where important mergers occurred was the poultry slaughtering industry.

- Apart from mergers, the largest food companies have grown relatively fast by means of internal expansion. The main producers increased their exports much faster than their domestic sales, confirming a tendency also found in other sector studies, namely that the main companies have derived a large benefit from the opening of the European Common Market. The export figures of table 10 show that whereas Dutch food exports to E.E.C. countries rose by nearly 200%, exports to other countries in the world increased only by 56%. The strongest growth of food exports took place to W.-Germany and Italy.

As to the level of concentration, this has remained modest, notwithstanding the rise, at least so far as concentration of employees and domestic sales in the hands of the largest firms is concerned. Thus, the largest 4 firms had between 15 and 20% of employees and domestic sales, and the largest 20 firms did not account for more than 35 to 42%.
The level of export concentration is however higher. The 4 largest firms accounted in the later years for 25 to 30% of exports, and the 20 largest firms had between 55 and 60%.

Investment concentration showed divergent tendencies.
Both the absolute concentration ratios and the relative spread indices exhibited variations throughout the years, though the concentration ratios showed on balance some increases.
The investment concentration level was throughout the years higher than concentration in employment and domestic sales, though lower than in exports. This illustrates the fact that the largest companies have invested (and exported) relatively more than the smaller ones.

c. The general picture given above, is confirmed by the Herfindahl and Entropy-indices. There was a general rise during the period (with the exception of the investment variable), but the levels attained even during the later years remained modest. Thus, the Dutch food industry, in general consisting of very many competing firms, shows a structure of modest concentration, a rather pronounced disparity between firm sizes, a decline in the number of the largest companies, and an ongoing concentration, brought about by mergers.

The top companies effected many smaller take-overs, plus some larger regroupings at the end of the sixties and early seventies. Alongside mergers, domestic market growth and export expansion took place, the latter developments obviously stimulated by inflationary movements in prices. Rationalisation of output accounted for a stable level of employment (see table 1).

d. The Linda-indices (tables 11 to 14) are in accordance with the findings:

1. the averages for the Linda-indices (Ls) for all variables are modest (between 0.2 and 0.3) throughout the period.
2. the L-index for the top two firms is generally higher than 1, except for the year 1970 and for exports during the whole period. The curious fact however, is that there was a persistent decline in most of the L_{N_h}x - indices throughout the years 1964-'69/'70; in the last two years the indices bounced back slightly, as a result of the big mergers mentioned before. Taken in conjunction with the C4-index, the implication seems to be that the two largest firms receded in importance vis-à-vis numbers three and four.
3. L-indices for domestic sales exhibited declines after 1966 and 1969. But because of the dairy concentrations, the L-maximum was reached by 3 firms instead of two, showing that the largest size discrepancy occurred between this group of 3 firms and the rest.
4. in general the level of L-indices for exports is lower than for the other variables. This indicates a more equalized structure of the exporting firms in the largest group.
5. a final noteworthy point is the sharp decline of the L-indices for investments in 1970-1971. Apparently, the top firms invested during these years less than their usual shares, probably because of the big mergers. It may provide an illustration of the often noted phenomenon that investment in new assets and investments in take-overs are to some extent rivalrous.

d. Consideration of the tables for the financial indices (tables 15, 16 and 17) adds a few interesting findings and conclusions.
The L-indices for net profits suggest an increasing parity between the firms belonging to the group of 15 leading firms. This follows from the decline in the Ls-index between 1965 and 1971, which was fairly pronounced and from the decline in the L_{N_h}-index since 1966. On the other hand the

L_{N_h}-index declined.

For the own-means or owner's equity variable, the levels of the Ls-indices were low in comparison with those for the net profits.

For the L_{N_h}'s the same applies, but for the L_{N_h}'s the differences are proportionately much less. This means that the differences between L_{N_h} and L_{N_m}-indices for the variable own means are much smaller than those for the variable net profits, while, moreover, the relative differences seem to be reduced as the years progress. From these tendencies we draw the following conclusions (which are supported by a review of the basic material):

- The profitability per unit of own means for the largest company of the 15 companies considered is considerably higher than for the rest of the group.
- Also, the profitability of the four or five leading food firms is relatively higher than that for the rest of the group.
- Throughout the years these differences are accentuated and, moreover, the profitability of the group as a whole has a tendency to remain on the same level (with here and there some increases). This is a deviation from the general industrial trend during the sixties, which showed a decline in net profitability.

The explanation of these phenomena can probably be given in terms of the market dominance of the largest firms, which are the leading firms in each of their sectors of the food industry. In these sectors - which for the purposes of this report are taken together, but which should in reality be considered as separate markets - the leading firms have strong market positions because of:

a. a large market share,

b. one or several strong trademarks, so that their products occupy a prominent position in distribution channels,

c. cartel agreements, or sales associations which coordinate sales.

Due to these facts, the leading firms make better prices and profits for their products than the other ones, and this raises their profitability.

If, finally the findings for the real and financial indices are compared, it would seem to follow that the largest food firms show a profit-maxi-

mizing behaviour instead of a sales-maximizing behaviour.
For, whereas the concentration-indices for sales and employees of the largest companies showed a decline between 1964 and 1969/'70, their profitability remained intact.
In the final years 1970 and 1971 they made good the relative recession of sales by means of mergers and take-overs; they were no doubt enabled to carry out this policy by their sizes and financial means.

Table 1: Total figures** of the food industry of the Netherlands.

	1964	1965	1966	1967	1968	1969	1970	1971
number of firms	1536	1509	1470	1460	1437	1407	1280	1231
number of employees x 1,000	129,5	131,0	131,1	130,0	130,2	130,5	128,5	124,8
domestic sales x 1,000,000 fls	8,951	10,012	10,641	11,161	12,137	12,940	14,161	14,678
export sales x 1,000,000 fls	2,796	3,125	3,364	3,736	4,344	4,895	5,896	6,650
investments x 1,000,000 fls	398	410	476	523	523	475	642	705

Source: G.I.S.

** concerningdata of firms with more than 10 employees

Table 2 : Investigated total per variable*

	1964	1965	1966	1967	1968	1969	1970	1971
domestic sales x 10,000,000 fls	585	738	785	873	974	942	1141	1241
export sales x 10,000,000 fls	228	273	296	332	393	402	543	649
employees x 1,000	122	119	119	121	123	121	122	120
investments x 1,000,000 fls	207	235	258	283	310	258	276	422

*) For all firms considered in the survey

Table 3 : Investigated total per variable for the largest 40-50 firms

	1964	1965	1966	1967	1968	1969	1970	1971
domestic sales x 10,000,000 fls	365	486	513	542	610	565	742	800
export sales x 10,000,000 fls	172	207	225	239	288	295	416	493
employees x 1,000	54	53	55	54	56	55	59	60
investments x 1,000,000 fls	207	235	258	283	310	258	276	422

Table 4 : Percentage of the sector covered by the investigation of all firms

	1964	1965	1966	1967	1968	1969	1970	1971	*
domestic sales	65.4	73.6	73.8	78.2	80.2	72.8	80.6	82.7	75.9
export sales	81.7	87.3	88.0	88.9	90.5	82.1	92,1	97.6	88,5
employees	94.3	90.6	90.9	93.1	94.6	93.0	95.1	96.5	93,5
investments	52.1	57.3	53.0	54,1	59.3	54.2	43.0	64.1	54,6

*) average for the period 1964 - 1971

Table 5 : Percentage of the sector covered by the investigation of the 40-50 largest firms

	1964	1965	1966	1967	1968	1969	1970	1971	*
domestic sales	40.9	48.5	48.2	48.5	50.2	43.6	52.4	54.5	42.3
export sales	61.7	66.1	66.9	64.0	66.3	60.3	70.6	74.1	66.3
employees	40.7	40.5	42.0	41.7	43.0	42.7	45.7	48.5	43.1
investments	52.1	57.3	53.0	54.1	59.3	54.2	43.0	64.1	54.6

*) average for the period 1964 - 1971

Table 6 : Concentration coefficients variable: employees

year	number of firms	coefficient of dispersion V	G	Concentration ratio 4	8	12	20	30	40	other concentration coefficients H	P
1964	475	3.591	0.7646	12.91	18.69	22.90	29.29	34.88	39.16	9.05	-255.0
1965	447	3.580	0.7346	13.45	18,70	22.85	29.21	35.44	39.76	9.16	-257.6
1966	438	3.678	0.7417	14.01	20.28	24,96	31.54	37.40	41.65	9.93	-254.4
1967	454	3.720	0.7572	13.89	21.20	26.39	33.19	38.35	42.36	10.16	-251.7
1968	459	3.746	0.7659	13.96	21.09	26.22	33.90	38.94	42.98	10.46	-249.8
1969	443	3.787	0.7588	14.50	21.43	26.62	34.36	39.60	43.51	10.90	-249.5
1970	435	3.786	0.7714	15.47	22.27	27.87	35.79	41.91	46.03	11.98	-243.8
1971	403	4.285	0.8017	16.46	23.14	29.12	37.93	44.82	49.19	15.73	-235.6

Table 7 : Concentration coefficients variable: domestic sales

year	number of firms	spread coefficient V	spread coefficient G	Concentration ratio 4	8	12	20	30	40	other concentration coefficients H	P
1964	160	3.708	0.5810	13.84	19.44	23.27	29.01	34.61	39.49	9.60	-266.4
1965	183	3.869	0.6591	13.85	20.44	24.96	31.96	38.84	44.05	10.58	-256.7
1966	172	3.790	0.6559	13.63	20.70	25.58	32.79	39.61	44.87	10.45	-256.5
1967	212	4.006	0.7015	14.90	22.56	28.47	36.38	43.52	48.59	11.68	-249.2
1968	222	3.985	0.7150	14.82	22.59	28.64	36.39	43.95	49.37	11.74	-247.8
1969	224	3.656	0.6300	14.12	21.77	26.58	33.56	39.29	43.66	10.21	-259.2
1970	234	4.211	0.7072	18.58	26.99	33.04	40.26	46.26	50.89	14.64	-243.0
1971	241	4.289	0.7252	19.01	27.99	33.53	41.36	48.03	52.65	15.76	-239.2

Table 8 : Concentration coefficients variable: export sales

year	number of firms	spread coefficient V	spread coefficient G	concentration ratio 4	8	12	20	30	40	other concentration coefficients H	P
1964	107	4.857	0.7756	18.13	28.60	35.93	45.90	54.50	60.69	16.01	-227.3
1965	120	5.087	0.8293	18.78	29.82	37.84	48.05	56.74	63.48	17.81	-218.1
1966	123	5.068	0.8343	19.72	30.18	37.72	47.80	57.32	64.32	18.15	-216.8
1967	135	5.163	0.8410	20.55	32.25	39.02	48.32	56.83	63.47	18.95	-216.1
1968	138	5.173	0.8581	19.88	31.78	40.35	51.31	60.03	66.26	19.32	-211.8
1969	142	4.823	0.7672	18.98	29.50	36.41	45.84	53.89	59.77	17.30	-228.8
1970	142	5.790	0.8732	25.95	37.76	45.86	55.54	64.04	70.10	26.97	-201.9
1971	156	6.520	0.9296	29.72	41.43	49.37	60.12	68.57	74.06	35.34	-186.5

Table 9 Concentration coefficients Variable : investments

year	number of firms	spread coefficient V	spread coefficient G	Concentration ratio 4	8	12	20	30	40*	Other concentration coefficients H	P
1964	42	4.407	0.4932	17.41	24.17	29.40	37.49	44.80	50.90	13.30	-260.4
1965	41	5.128	0.5525	19.46	26.76	33.17	42.68	51.05	57.32	18.09	-248.4
1966	41	4.201	0.5080	16.20	23.63	29.50	38.34	46.47	53.03	12.69	-257.5
1967	39*	3.976	0.5192	15.16	23.29	29.92	40.00	48.70	54.07	11.51	-255.9
1968	37*	4.508	0.5727	16.54	27.13	34.11	44.13	54.13	59.35	14.84	-245.2
1969	36*	4.718	0.5217	18.48	25.75	32.17	41.89	50.27	54.23	16.53	-251.2
1970	37*	2.897	0.4056	11.67	19.31	24.21	32.29	39.38	43.05	7.34	-270.2
1971	47	4.293	0.6130	18.06	28.14	36.00	46.72	55.04	60.77	15.41	-237.8

*) The C-ratio in this column is for the years in which there were available data for less than 40 firms, calculated on the basis of the number of firms mentioned in the first column.

Table 10 : Processed food exports (see note)

value x 1,000,000 U.S. Dollars

year	world	E.E.C.	Belgium & Luxemburg	France	Germany	Italy	Other Countries
1964	926.7	500.7	95.6	118.4	220.7	66.0	426.0
1965	1,042.1	611.1	127.4	114.8	285.4	83.5	431.0
1966	1,077.2	631.5	117.5	108.5	304.5	101.0	445.7
1967	1,173.8	677.3	122.1	113.1	339.1	103.0	496.5
1968	1,376.9	855.0	134.1	175.9	428,7	116.3	521.9
1969	1,534.7	998.8	150.2	219.7	510.8	118.1	535.9
1970	1,881.9	1,272.8	185.0	214.4	694.7	178.7	609.1
1971	2,127.5	1,451.6	195.0	236.6	803.8	216.2	675.9

Source : Statistics of foreign trade O E C D

note 1) trade is included in these figures

Table 11 : Food industry Linda coefficients

Variable : Employees

year	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_h <$	$L_{N^*_h <}$
1964	0.2192	44	44	0.0754	2	1.622	2	1.622
1965	0.2213	42	42	0.0781	2	1.258	2	1.258
1966	0.2171	41	41	0.0854	2	1.138	2	1.138
1967	0.2206	38	38	0.0963	2	1.026	2	1.026
1968	0.2171	40	40	0.0925	2	1.069	2	1.069
1969	0.2311	37	37	0.0995	2	1.222	2	1.222
1970	0.2203	39	39	0.0947	2	0.935	2	0.953
1971	0.2772	38	38	0.0952	2	1.891	2	1.891

Table 12 : Food industry Linda coefficients

Variable : domestic sales

year	L_S	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.2330	43	43	0.0745	2	1.565	2	1.565
1965	0.1956	50	50	0.0629	2	1.505	2	1.505
1966	0.1948	48	48	0.0674	2	1.525	2	1.525
1967	0.2010	40	40	0.0814	2	1.079	2	1.079
1968	0.1932	42	42	0.0763	2	1.102	2	1.102
1969	0.2105	40	40	0.0883	2	1.167	2	1.167
1970	0.1951	44	44	0.0945	3	0.6501	3	0.6501
1971	0.1999	45	45	0.0943	2	0.8412	2	0.8412

Table 13 : Food industry Linda coefficients

Variable : export sales

year	L_s	N^*	N^*_m	L_{N^*m}	N^*_h	L_{N^*h}	$N^*_{h<}$	$L_{N^*h<}$
1964	0.1597	42	42	0.0794	2	0.6083	2	0.6083
1965	0.1586	45	45	0.0755	2	0.6108	2	0.6108
1966	0.1601	45	45	0.0756	2	0.7055	2	0.7055
1967	0.1378	41	41	0.0837	2	0.6623	2	0.6623
1968	0.1667	40	40	0.0865	2	0.7918	2	0.7918
1969	0.1888	41	41	0.0855	2	0.9130	2	0.9130
1970	0.2002	41	41	0.0101	2	0.6585	2	0.6585
1971	0.2266	40	40	0.0117	3	0.7273	3	0.7273

Table 14: Food industry Linda coefficients

Variable : investments

year	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.2102	41	41	0.0766	2	0.7938	2	0.7938
1965	0.2326	40	40	0.0828	3	1.009	3	1.009
1966	0.1970	40	40	0.0725	2	0.8969	2	0.8969
1967	0.1648	38	38	0.0711	2	0.7618	2	0.7618
1968	0.1836	37	37	0.0743	2	1.048	2	1.048
1969	0.2431	36	36	0.0861	2	1.166	2	1.166
1970	0.1459	37	37	0.0723	2	0.5587	2	0.5587
1971	0.1436	47	47	0.0760	2	0.5638	2	0.5638

Table 15 : Food industry Linda coefficients

Variable: Net profit

year	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.6656	15	15	0.3000	2	2.281	2	2.281
1965	0.7187	15	15	0.3006	2	2.081	2	2.081
1966	0.7456	15	15	0.3044	2	2.113	2	2.113
1967	0.6500	15	15	0.3195	2	1.506	2	1.506
1968	0.5875	15	15	0.2813	2	1.689	2	1.689
1969	0.5175	15	13	0.2775	2	1.234	2	1.234
1970	0.4024	15	15	0.2262	2	0.921	2	0.921
1971	0.4644	15	15	0.2234	2	1.227	2	1.227

Table 16 : Food industry Linda coefficients

Variable: Own means

year	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.2968	15	14	0.1557	2	0.8500	2	0.8500
1965	0.3366	15	14	0.1844	2	0.9719	2	0.9719
1966	0.3325	15	14	0.1836	2	0.9835	2	0.9835
1967	0.3046	15	13	0.1989	2	0.5779	2	0.5779
1968	0.2918	15	13	0.1854	2	0.5994	2	0.5994
1969	0.2798	15	15	0.2111	2	0.5026	2	0.5026
1970	0.3172	15	15	0.2022	2	0.7317	2	0.7317
1971	0.2491	15	15	0.1521	2	0.6295	2	0.6296

Table 17 : Food industry Linda coefficients

Variable: Gross Cash Flow

year	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.4968	15	15	0.1695	2	1.816	2	1.816
1965	0.4390	15	15	0.1554	2	1.600	2	1.600
1966	0.4297	15	15	0.1621	2	1.568	2	1.568
1967	0.3716	15	15	0.1887	2	0.8645	2	0.8645
1968	0.3327	15	15	0.1812	2	0.6810	2	0.6810
1969	0.3181	15	15	0.1598	2	0.9250	2	0.9250
1970	0.3259	15	15	0.1774	2	0.7971	2	0.7971
1971	0.3485	15	15	0.1534	3	0.7186	3	0.7186

Table 18 : Food industry Linda coefficients

Variable: Wage-bill

year	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.5218	15	15	0.2101	2	1.982	2	1.982
1965	0.4778	15	15	0.2070	2	1.518	2	1.518
1966	0.4843	15	15	0.2149	2	1.442	2	1.442
1967	0.4636	15	15	0.1800	2	1.335	2	1.335
1968	0.5145	15	15	0.1754	2	1.592	2	1.592
1969	0.5080	15	15	0.1789	2	1.659	2	1.659
1970	0.4779	15	15	0.1845	2	1.175	2	1.175
1971	0.5902	15	15	0.1791	2	1.974	2	1.974

LIST OF MERGERS

1964	Meneba	De Sleutels vh. Koster & Co. Leiden	(Leiden)
	N M U	NV Melkinrichting en flessenmelkfabriek Holland	(Amsterdam)
		NV Sterovita melkproducten	(Amsterdam)
	Zwanenburg-Organon	NV Uithoornse Bacon en conservenfabriek	(Uithoorn)
		NV Verapharm	(Meppel)
	Homburg	NV van Rooyen	(Almelo)
		Gerrit Bussink	(Wijhe)
		NV Twentse Vlees Export Mij.	
1965	Zwanenburg-Organon	Anton Hunink	(Deventer)
		California soepen	
		Fino fabriek	
		Noury van der Lande	(Deventer)
	Homburg	NV van Dijk	(Elburg)
		NV Kon. Stoomvleeswarenfabriek B. Linthorst en Zn.	(Wilp)
	Scholten	Honig	(Koog a/d Zaan)
	N M U	V Z R M I	(Rotterdam)
1966	Albert Heyn	G. de Meester	
	K Z O	Van Vollenhoven's Fabr. Comestibles NV	(Emmen)
	Meneba	V.d. Meer & Schoep	(Rotterdam)
	CSU	consolidation of six sugar cooperatives	(Rotterdam)
1967	N M U	NV Dordrechtse Melkinrichting	(Dordrecht)
	Coveco	NV Hollandse Vleescombinatie Groot & Booy	(Alkmaar)
	K Z O	Kon. Zout Ketjen	(Amsterdam)
1968	Meneba	Sitos NV	(Rijswijk)
	Duyvis	Zwervers's Ver. Maatsch. NV	(Vlaardingen)
	Frico	Karperton Kaasfabriek	(Alkmaar)
	C M C	N M U	(Amsterdam)
		NV Melkcentrale Amersfoort	(Amersfoort)
		NV Roomboterfabriek de Vooruitgang	(Woudenberg)
1969	I T T	Groko Cons. en blikfabriek	
	I T T	Eubisfa	
	Frico	Trifax NV	(Weesp)
	N M U	NV Veenendaalse Melkinrichting en zuivelfabriek	(Veenendaal)
	N C Z	G O C Z	(Zutphen)
	Meneba	NV Vermaats Bakkerijen	(Haarlem)
	Scholten Honig	Jacob Duyvis	(Zaandam)
	Cons. Foods Corp.	Coenen Cons. NV	(Horst)

	P. de Gruyter & Zn.	Kahiel's Thee NV	
	K Z O	Duyvis	(Zaandam)
	KZO and AKU together form	A.K.Z.O.	(Arnhem)
	Imp. Tobacco Ltd.	Golden Wonder	
1970	Meneba	Brood Banket Beschuitfabriek Dijkers NV	(Almelo)
	Veconi	Ver. Coöp. Zuivelfabriek Andi	(Doetinchem)
	Wessanen's	Jan van Heeswijk	(Veghel)
	S.U.	Coöp. Groenvoederdrogerij	
	Zuid Ned. Melkinr.	Coöp. Zuivelver. Zd. Ned. Zuivelbond GA (CZNZ)	
		Coöp. Centr.Melkproductenfabriek de Meyerij GA	
		Coöp. Centr.Melkproductenfabriek Bergeijk GA	
		Coöp. Zuivelexportver. "Brabant" GA	
	Cebeco	Kok-Ede NV	(Ede)
	S.H.V.	P. de Gruyter & Zn.	('sHertogenbosch)
	Nibecom	NV Export sl. De Haas	(Winterswijk)
	Domo takes over	5 factories of Lyempf	(Leeuwarden)
		Fano Friet	(Drachten)
		Mayo NV	(Smilde)
		Drents-Groninger Zuivelbond	(Assen)
	Meneba	NV Lubro	(Utrecht)
		Vonk's Bakk. NV	(Leeuwarden)
		d' Blauwe Molen NV	(Rotterdam)
	British United Biscuits Ltd.	Fritura	
	Campina	Sibema	
	I.T.T.	Nobo	
	C.M.C.	Coöp.Melkverwerkingver."Land van Heusden en Altena"	
	Unilever	Zwanenberg's Fabrieken NV	(Oss)
1971	Unilever	Croklaan	(Wormerveer)
	S.H.V.	Difa	(Dordrecht)
	General Foods	Maple Leaf	
	Scholten Honig	Avebe	
	Nutricia	Speyer, V.d. Vijver en Zwanenburg	(Etten Leur)
	Frico	C.C.F.	(Leeuwarden)
	Meneba	Amersfoortse Broodfabriek NV	(Amersfoort)

Comments on the list of mergers 1964-1971

1. The main sectors where mergers took place were:
   - the meat processing industry
   - the dairy industry
   - the flour and bakery sectors and the cooperative sugar industry
2. The main companies involved in merger operations were:
   - Meneba, (flour and bakeries), taking over both horizontal competitors like De Sleutels (1964), and effecting vertical integrations, leading up to a dominant position in bread baking in particular areas (Sitos, 1968, Western Holland).
   - Scholten-Honig, a varied food concern, which has grown rapidly to a prominent place by means of take-overs. In the fall of 1973 the firm was engaged in a battle with the Cooperative Sugar Union over the control of the only private sugar manufacturer in The Netherlands*. In 1973 Scholten-Honig gained control of the flour and bakery interests of the Dutch consumer cooperative, which got into financial troubles.
   - Many take-overs in the meat sector were effected by Homburg, Unilever, Nibecom and A. Heyn, the retail chain. Most of these mergers were horizontal operations, with some diversification intentions. The A. Heyn take-over of de Meester in 1966 was a vertical backward integration.
   - Dairy mergers were probably the most numerous, and were effected mainly among cooperatives. Most of these mergers and take-overs were on a regional basis, covering several provinces. The structure of the dairy industry is rather complicated, with many mutual interests and cross-participations.
3. Foreign take-overs were restricted both in numbers and size. The main foreign companies involved were Imperial Tobacco (Gr. Britain), I.T.T. and General Foods (U.S.A.). These companies penetrated the miscellaneous food sectors, such as canning, potato chips, biscuits and chewing gums.

---

* In the middle of November 1973, the C.S.U. made known its withdrawal from the take-over battle concerning C.S.M.

Part 2: Concentration in the fish-canning industriy

Report on concentration in the Dutch Fish-canning Industry

1. General Survey

The Dutch fish-canning industry experienced a general revival after the second world war, mainly because of food scarcities in the tropical developing countries. However, since the early sixties the trend was reversed, as a result of several factors.
The industry produced to a large extent cheap mass products, which are mainly sold in Africa. Producing countries like Japan and S-Africa were more and more able to undercut the Dutch industry, while at the same, African consumers demanded a qualitatively better product. So a reorientation became imperative, which several firms could not manage to undertake and they consequently failed.
On the supply side there likewise arose difficulties. The most important input has been traditionally herring and mackerel. In the sixties an excess of fishing activities took place in the North Sea and the North Atlantic, so that supplies became scarcer and more distant fishing grounds had to be explored. Since the middle sixties supplies of herring declined from over 50,000 tons p.a. to between 20,000 and 30,000 tons, whereas mackerel supplies fell to some 10-15,000 tons (compared to about 25,000 tons in the early sixties). Prices therefore rose appreciably, and though there was some increase of supplies of herring at the end of sixties and early seventies, the industry saw itself confronted with a profonnd reorientation. This was aggravated by the rise in tinplate prices and the continuing increase in wages and social charges. The cost increases and the heavy international competition necessitated a withdrawal from the mass market and a shift towards quality products. As table 1 indicates, the number of firms fell since 1967 to a low of 17 in 1970. During these years a number of the most important firms, in terms of their ranking in 1964 and 1965, shifted to much lower places or were forced to terminate their operations altogether. For example, firms numbered two, three, four, and five in 1964 (concerning employees) had the following positions in 1971: eleven, six, three and dissapeared. Firm number four, which improved its position to number three, nevertheless experienced a decline of about one-quarter in the total of its personnal. Only the top fish-canning firm of 1964 continued to expand and to occupy the first place.

On the other hand, the renewed expansion during the later years (1970 and 1971) led to an influx of new companies, among wich were several larger ones. This expansion is also apparent from domestic sales and export sales, wich reached an absolute low in resp. 1968/1969 and 1968. The renewed growth since these years reflects the shifts of sales from the African market to that of the E.E.C.-countries. (table 2). The whole of the increase of the Dutch fish-canning exports between 1965 and 1971 ($ 3.7 million) was due to E.E.C. sales, wich rose $ 4.0 million. Whereas in 1960, 70 % of canned herrings were sold in African countries and only 9 % in Europe, the shares were totally reversed in 1967: 22 % in Africa and 64 % in Europe.

The structure of the industry has been traditionally one of small firms, undertaking practically no research and selling their products via established channels of distribution without individual efforts in sales promotion and advertising. The Dutch Ministry of Agriculture and Fisheries has tried repeatedly to stimulate an improvement of of the branch structure. In 1957 funds were made available to improve research in order to enhance the quality of the products. Also, it was tried to improve supplies by means of premiums for adequate preparation on board of ships. A further step was the financing of a large melting machine in order to influence the stock position, but this proved illusory because of the receding catchings. A tariff reduction from 12 % to 0 or $\frac{1}{2}$ % was achieved on a quota made available by the E.E.C. for herring imported from Scandinavia and destined for Dutch consumption.

The large shifts which have occurred in the industry are also apparent from table 3, which gives the supplies of fish to the canning industry in earlier and later years. It will be seen that herring supplies got the heaviest blow, whereas mackerel could retain its position. On the other hand, conditions for the processing of sea foods, mainly mussels packed in glass jars, have improved. The firms producing the mussels in the province of Zeeland and some speciality producers have tried to, promote brand knowledge and loyalty with some success. (" Zeelands Roem" for mussels and " Vico " for haddock liver pâté, are examples). The Zeeland firms are now threatened by the closing of the sea arms, so that long-term prospects for the cultivation of mussels are less secure.

The general tendency by the consuming public to increase its demand for high quality, imported fish products has led to more salmon and tuna sales, where international brands such as Delmonte, Royal Mail Imperial, Libby's and Princes are well established. There is also a wide variety of labels and retail prices in the sardine group, while more expensive canned seafoods like crab, lobster and shrimps (imported from the U.S.A., Hongkong and China) are also doing well.

2. Concentration Tendencies

Quantitative studies have been performed with the aid of the variables employees, domestic sales and exports. Financial data were not sufficiently available for this small-scale industry which is dominated by small firms (the largest firm had in 1971 only 212 employees and some Fls 18 million sales). In fact there are only a handful of firms with more than 50 employees. Discussions have therefore taken place during the past several years whether horizontal mergers and vertical integration would not be something worthwhile.
Both product and packaging research and market research could then be improved and the position of the Dutch firms could be strengthened in comparison with for example the larger W-German companies. Stability in raw material supplies could be achieved by means of long-term delivery contracts, so that prices and quantities could be fixed between the supplying and processing sectors.
But not much has come from these proposals. There is only one large company involved in the fish-canning industry: S.H.V., the Dutch conglomerate wich owns one of the larger companies in the trade; this firm, wich also owns IJvries from IJmuiden, is in the deep-freeze sector of the trade. Unilever of course, is one of the most important fish-producing firms in Europe. It owns the large Deutsche Hochseefischerei at Bremen, integrated from fish catching to the 270 special fish retailers and 85 fish restaurants in W-Germany. Its producing business in the Netherlands is much smaller.
Concentration indices in table 4, show a marked weakening of concentration in the last two years, after increases during the period up to 1970, at least for employees and domestic sales. For exports the trend was more level, with an exeption as to the last year. The Herfindahl and Entropy-indices in particular denote the large influence of the growing number of companies during the later years.

This sudden decline in concentration is in line with the previous sketch of the development in the industry: as the old established firms fastly declined in importance (and even were forced to liquidate) and some relatively large new ones stepped into the quickly expanding deep-freeze sector of the industry, concentration decreased both absolutely and relatively. The last tendency (which was rather strong) is to be seen from the Gini- and Variationcoefficients.

With respect to the the L-indices, we note an oligopolistic group of 6-12 firms, with an L_{N1_h} between 0.25 and 0.50 for domestic sales and exports, and one below 0.25 for employees. The industry has therefore stayed competitive, even though the major companies (N'_h) increased their dominance with respect to domestic sales and exports, especially in 1969, 1970 and 1971. We also note the discrepancy between the levels of L-indices of sales and employees, which may concord with the explanation given in the preceding paragraph.

Investment data were too spotty to calculate meaningful ratio's and indices. Whatever indications are available seem to show, however, that the largest firm in the industry invested heavily with time intervals of four to five years, and that its average investment record was fully commensurate with its first place among other variables. On the other hand, the investments of the smaller companies were disproportionately weak. They seem to have been overwhelmed by the problems coming to the fore during the recession years of the fish-canning industry.

Table: 1 The Fish-canning Industry"

	1964	1965	1966	1967	1968	1969	1970	1971
Number of firms	20	23	24	24	20	19	17	32
Employees x 1,000	1.1	1.0	1.1	1.0	0.8	0.9	1.2	1.2
Domestic sales x 1,000,000 Fls	18.9	21.9	25.3	27.0	21.3	21.4	49.0	59.0
Export sales x 1,000,000 Fls	22.7	23.7	23.2	25.0	24.7	31.3	36.0	63.0

" Concerning data of firms with more than 10 employees

Source: C.B.S.

Table: 2 CANNED FISH, EXPORTS AND IMPORTS
x 1,000 US dollars

		World	E.E.C.	Bel&Lux	France	Germany	Italy	Other
1965	exports	8,706	6,418	4,203	1,130	914	171	2,312
	imports	9,241	1,041	121	79	841	-	8,200
1967	exports	9,100	7,413	4,607	556	987	263	1,713
	imports	10,003	1,712	286	77	1,345	4	8,291
1969	exports	10,050	8,727	5,054	2,191	924	558	1,323
	imports	11,060	2,533	390	78	2,051	14	8,527
1971	exports	12,119	10,321	6,291	1,922	1,803	305	1,798
	imports	15,518	3,173	380	148	2,642	3	12,345

Source: OECD

Table: 3 Supplies of fish to the canning industry

(metric tons)

	1963	1964	1969	1970	1971
Sea-fish	15,224	15,941	8,787	6,018	7,235
of which herring	10,921	10,545	4,001	3,224	3,087
mackerel	3,227	4,803	3,260	1,723	3,323
Fresh water fish	81	113	142	109	24
Mussels	6,991	8,730	13,056	10,686	9,253

Table: 4 Concentration coefficients Fish-canning Industry

variable: Domestic sales

			Concentration ratio's					
	V	G	4	8	12	15	H	P
1964	1.333	0,4909	64.02	78.31	83.60	85.76	138.9	-103.8
1965	1.345	0.6210	60.27	84.02	91.78	95.52	122.1	-106.3
1966	1,477	0.6566	66.01	85.77	92.89	95.73	132.5	-103.6
1967	1,591	0,6716	69.26	86.67	92.96	95.13	147.1	-100.9
1968	1,512	0.6473	70.89	88.73	94.37	95.77	164.3	- 95.4
1969	1.801	0,7364	77.57	95.33	99.53	99.73	223.4	- 81.6
1970	1.131	0.0147	41.63	52.45	54.08	68.47	134.0	- 98.5
1971	1.387	0.5742	46.78	68.31	82.54	88.79	91.4	-123.1

Table: 5 Concentration coefficients Fish-canning Industry

variable: Employees

			Concentration ratio's					
	V	G	4	8	12	15	H	P
1964	0.638	0.3244	41.18	65.91	79.45	87.58	70.33	-122.4
1965	0.915	0.4860	45.60	72.80	88.00	92.80	79.88	-118.9
1966	0.902	0.4662	45.55	69.45	81.45	89.21	75.59	-122.3
1967	1.060	0.5149	51.10	73.60	85.70	91.09	88.45	-118.3
1968	0.827	0.4176	46.12	70.75	86.12	93.44	84.18	-117.4
1969	0.964	0.4661	52.22	75.44	89.44	96.34	101.60	-111.4
1970	0.789	0.0853	40.25	55.58	66.00	75.46	95.40	-111.5
1971	1.069	0.462	39.33	56.58	70.08	77.95	66.97	-133.4

Table: 6 Concentration coefficients Fish-canning Industry

variable: Export sales

			Concentration ratio's					
	V	G	4	8	12	15	H	P
1964	1.131	0.5262	60.79	81.50	88.55	92.61	114.0	-108.0
1965	1.301	0.6153	62.45	86.50	92.83	94.23	117.1	-105.6
1966	1.336	0.6234	60.34	84.48	92.67	94.50	116.0	-107.5
1967	1.220	0.5937	55.20	81.20	91.60	94.76	103.6	-111.1
1968	1.081	0.5694	56.68	84.21	96.36	98.55	108.5	-105.5
1969	1.029	0.5381	57.83	83.39	94.57	97.44	108.4	-106.7
1970	1.185	0.5622	63.33	86.94	95.83	99.54	141.4	- 98.9
1971	1.220	0.5841	42.68	68.25	85.24	92.05	77.8	-123.2

T able:7 Linda-coefficients of the Fish-canning Industry

v ariable: domestic sales

	L_s	N'	N'_m	$L_{N'_m}$	N'_h	$L_{N'_h}$	$N'_{h<}$	$L_{N'_{h<}}$
1964	0.6324	12	6	0.5036	2	0.7794	2	0.7794
1965	0.4861	12	7	0.3326	2	0.6538	2	0.6538
1966	0.4594	12	9	0.3704	2	0.6489	2	0.6489
1967	0.5276	12	9	0.4501	2	0.7653	2	0.7653
1968	0.6040	12	6	0.4627	2	0.8553	2.	0.8553
1969	0.7636	12	7	0.5713	3	1.0260	3	1.0260
1970	0.8783	12	7	0.5436	2	1.3000	2	1.3000
1971	0.4732	12	12	0.2239	2	1.4170	2	1.4170

Table : 8 Linda-coefficients of the Fish-canning Industry

variable: employees

	L_s	N'	N'_m	$L_{N'_m}$	N'_h	$L_{N'_h}$	$N'_{h<}$	$L_{N'_{h<}}$
1964	0.2907	12	12	0.1942	2	0.5577	2	0.5577
1965	0.2779	12	12	0.1894	2	0.5433	2	0.5433
1966	0.3032	12	12	0.2179	2	0.6094	2	0.6094
1967	0.3443	12	12	0.2510	2	0.6206	2	0.6206
1968	0.3485	12	12	0.1968	2	0.7296	2	0.7296
1969	0.3768	12	12	0.2381	3	0.6121	3	0.6121
1970	0.4487	12	12	0.2567	3	0.7561	3	0.7561
1971	0.4297	12	12	0.2097	2	0.7910	2	0.7910

Table: 9 Linda-coefficients of the Fish-canning Industry

variable: export sales

	L_s	N'	N'_m	$L_{N'_m}$	N'_h	$L_{N'_h}$	N'_h	$L_{N'_h}$
1964	0.4435	12	5	0.3212	2	0.6571	2	0.6571
1965	0.3898	12	6	0.3034	2	0.5625	2	0.5625
1966	0.4119	12	8	0.3198	2	0.6806	2	0.6806
1967	0.3604	12	12	0.2830	2	0.7424	2	0.7424
1968	0.3284	12	10	0.2485	2	0.5375	2	0.5375
1969	0.3660	12	9	0.2672	2	0.6383	2	0.6383
1970	0.5729	12	7	0.3625	2	1.0510	2	1.0510
1971	0.3473	12	12	0.1747	2	0.9083	2	0.9083

Part 3: Concentration in the vegetables and fruit processing industry

Report on Concentration in the Fruit- and Vegetables Processing Industry.

1. General Survey

At the beginning of the seventies the Dutch fruit and vegetables processing industry consisted of some 90 firms with about 110 establishments, having each more than 10 employees. Slightly less is the number of smaller firms, wich had a share of only 5 % in total output of the industry. As Table 1 indicates, these numbers have remained relatively stable; only the year 1968/69 saw a decline. Production and sales of both processed vegetables and fruits have increased since 1963/64, but the general increase masks varying tendencies in the two main sectors and the methods of processing were as follows:

Table 1 A:

	Vegetables				Fruit		
	1963	1967	1969		1963	1967	1969
Supplies (million kgs)	322.5	325.3	336.1	supplies (million kgs)	106	104	130
of wich (in %):				of wich (in %)			
sterilized	51	50	54	fruit pulp	15	7	3
frozen	14	13	17	fruit juice	16	13	13
sauerkraut	13	14	12	canned fruit/jars	18	14	13
dried	13	10	8	apple sauce	38	45	53
salted	7	10	6	sirup	4	4	3
other	2	3	3	frozen	5	10	12
				other	4	7	3

Expansion was greater in fruit processing than in vegetable processing, but both sectors showed a quantitative rise. For vegetables, only the sterilization method and deep freezing increased their shares; in fruit processing all methods declined in importance, except deep-freezing and apple sauce production. The last sector mentioned is by far the most important, and exhibits similar tendencies as sterilized vegetables, because it is a substitute product. Both types of products are sold in cans and/or glass jars. The share of tinplate and glass-jars in total packaging costs was 71 % in 1964/65, and again 71 % in 1968/69. But cans are losing terrain: in the earlier year, cans accounted for 60 % of packaging costs, in the latter year 49 %. So glass jars doubled their share. The consumer values the sight of his purchase, for quality and colour can be seen, and glass packagings

Table 1 : Industrial activities in the vegetables and fruit processing industry *)

		63 - 64	64 - 65	65 - 66	66 - 67	67 - 68	68 - 69	69 - 70	70 - 71
Number of activity units	vegetables	68	74	72	68	61	65	63	-
	fruit	73	71	65	63	52	55	45	-
	total	94	98	95	92	90	85	91	93
Number of establishments		116	120	117	113	111	106	112	-
sales	x 1 000 000 fls	468,3	476,1	556,1	581.6	646.5	699.6	791.8	897.2
production	vegetables "	275	274	274	333	363	387	451	554
	fruit "	197	207	234	250	282	284	289	314
(+ other services)	total "	486	493	526	604	675	712	800	933
consumption	"	298.1	297.8	301.5	358.5	401.2	425.1	481.0	573.5
Census value added (Prod - Cons)	"	188.3	195.4	224.2	245.5	273.9	286.8	319.2	359.0
Wages & salaries	"	67.8	78.1	79.3	89.7	96.8	103.8	115.5	132.5
Social charges, compulsory under law	"	8.9	9.9	9.5	11.6	13.9	16.1	18.1	21.1
Pension premiums	"	3.3	3.7	4.2	4.7	5.6	6.1	6.4	6.8
Other social charges	"							4.5	5.1
Number of persons employed on sept.30th	x 1 000	12	11.6	10.3	11.0	11.0	10.6	10.7	10.5
Index of producers prices (domestic sales)	1961 = 100	105	107	117	118	118	117	118	119

*) Enterprises with more than 10 employees

demand care of the product. The same applies to deep-frozen articles, where colour and freshness are preserved and consumers have spent relatively more for these types of products. These two methods of production have their peculiarities : for canned vegetables costs of production, stacking and transport are relatively low; for glass packaged articles visibility is good, while some articles (leaf green vegetables such as spinach) lend themselves to deep-freezing methods.

Processing methods are adapted to consumer wishes. Peas and beans are canned, but canned spinach has nearly disappeared, and consumers pay the higher price for the deep-frozen products wich account for more than 60 % of frozen vegetables sales. Consumers are satisfied with the traditional sauerkraut, so that alternative methods of preparing cabbages have no success.

Growth in the fruit and vegetable processing industry has been fast, but the different sectors have shown successively different rates of increase. Between 1950 and 1970 the output of sterilized products increased more than threefold, but most of this growth took place during the fifties. Deep-frozen products have grown fast during the sixties though there was some hesitation in the middle sixties. Nevertheless, the industry as a whole grew by 90 % between 1963 / 64 and 1970 / 71 (table 1), of wich the vegetables sector had the lion's share.

Neither are the structural characteristics uniform. The canning sector is dominated by small-scale firms, but the deep-freeze sector counts only a few large firms in Europe. The capital intensity is very high : the capital sales ratio is only slightly over 1 .

The canning sector has practically no brand-loyal customers (Hero products are an exception in Holland), whereas the deep-freeze products are heavily advertised, and promoted.

Production costs of canned fruits and vegetables are about equal to those of deep-frozen articles at the gate of the factory. But the differences afterward are decisive. The stocking in cold storage systems, the transport at low temperatures to depots and again to retailers, the retailer'sinstallations and the broad range of products put a high premium on efficient transport and storage, wich promotes vertical integration. Vertical integration in its turn raises barriers to entry and limits the number of firms. If however the market expands in future years to much higher levels of per capita consumption, (say 10 - 20 kg in stead of the present 3 - 5 kgs) more room may be created for additional firms.

In the canning sector growth will be less but may nevertheless be positive. Between 1960 and the early seventies per capita consumption rose from 5.5 kg to 10 kg. There is not much advertising and sales take place

to food chains mainly on the basis of delivery contracts : the sale is made and the canner stores the goods untill he gets a call; the production process is not capital intensive, and more and more, the sale is pushed by the large retailers under their own marks. But new products continue to make their entry also in this sector. Mushrooms are an example. This is now the main export product. And new marketing techniques have appeared. The auctionsare losing out against contract raising, wich steadies supplies and prices for the processors. On the sales side the greater demand for convenience goods also gives canners more chances to continue their growth, if a suitable product is supplied.
Exports and imports have done very well in the fruit and vegetables processing industry (tables 2 and 3). For vegetables the lines of expansion in exports and imports run nearly parallel. Fruit processing shows a declining import balance since 1966, as the Dutch processors have improved their market positions in the E E C . Table 3 indicates the extent : a nearly fourfold increase in E E C sales between 1965 and 1971. In particular, trade with W.Germany has intensified.

2. Concentration

Growth in the canning industry, competition from deep-frozen products and from imports and continuing rationalisation have limited the price-increases for canned fruits and vegetables. Table 1 shows that prices have risen only 19 % during the ten year period 1961 - 1971. This is a general indication : canned and deep-frozen vegetables prices have hardly risen since 1964. Because fresh vegetables and foods in general rose in price during this period, oonsumption of canned and deep-frozen products was stimulated (see graph 1). Export prices rose somewhat more, which may partly reflect an increase in quality, necessary because of the fierce competition with Belgian and French suppliers for the largest market in Europe : W. Germany (90 % of foreign sales go to other E E C countries, of which the Federal Republic is by far the largest customer).
Some firms did not succeed in keeping abreast of the price and quality competition or could not sufficiently rationalize their operations. They have either stopped producing (Tieleman & Bros.,Leiden (1953) Beverwijkse Conservenfabriek(1965), Hoogenstraten(1969) and some others), or merged with other companies, often large international firms. For a list of mergers see Appendix A. Companies like Consolidated Foods, I.T.T., Heinz, Unilever, A K Z O, and Nutricia are now represented in the Dutch canning and deep-freeze market. Table 4 gives the largest international companies in the trade in recent years .
Many of these combinations arose out of series of mergers, which took place

Table 2. Foreign trade in Fruit and Vegetables (processed)

		value x 1 000 000 fls							
		1964	1965	1966	1967	1968	1969	1970	1971
Vegetables	exports	81.6	92.1	107.3	121.2	140.3	184.8	221.0	243.4
	imports	29.5	41.6	50.2	51.7	60.3	75.6	87.2	87.2
	balance	52.1	50.5	57.2	69.5	80.0	109.2	133.8	156.2
Fruit	exports	63.1	66.3	76.4	96.7	111.6	123.5	139.7	171.6
	imports	76.7	89.5	108.1	121.8	124.0	141.4	159.0	172.5
	balance	- 13.6	- 23.2	- 31.7	- 25.1	- 12.4	- 17.9	- 19.3	- 0.9
Total	exports	144.7	158.4	183.7	217.9	251.9	308.3	360.8	415.0
	imports	106.2	131.1	158.2	173.5	184.3	217.0	246.3	259.7
	balance	38.5	27.3	25.5	44.4	67.6	91.3	114.5	155.3

Source : C B S

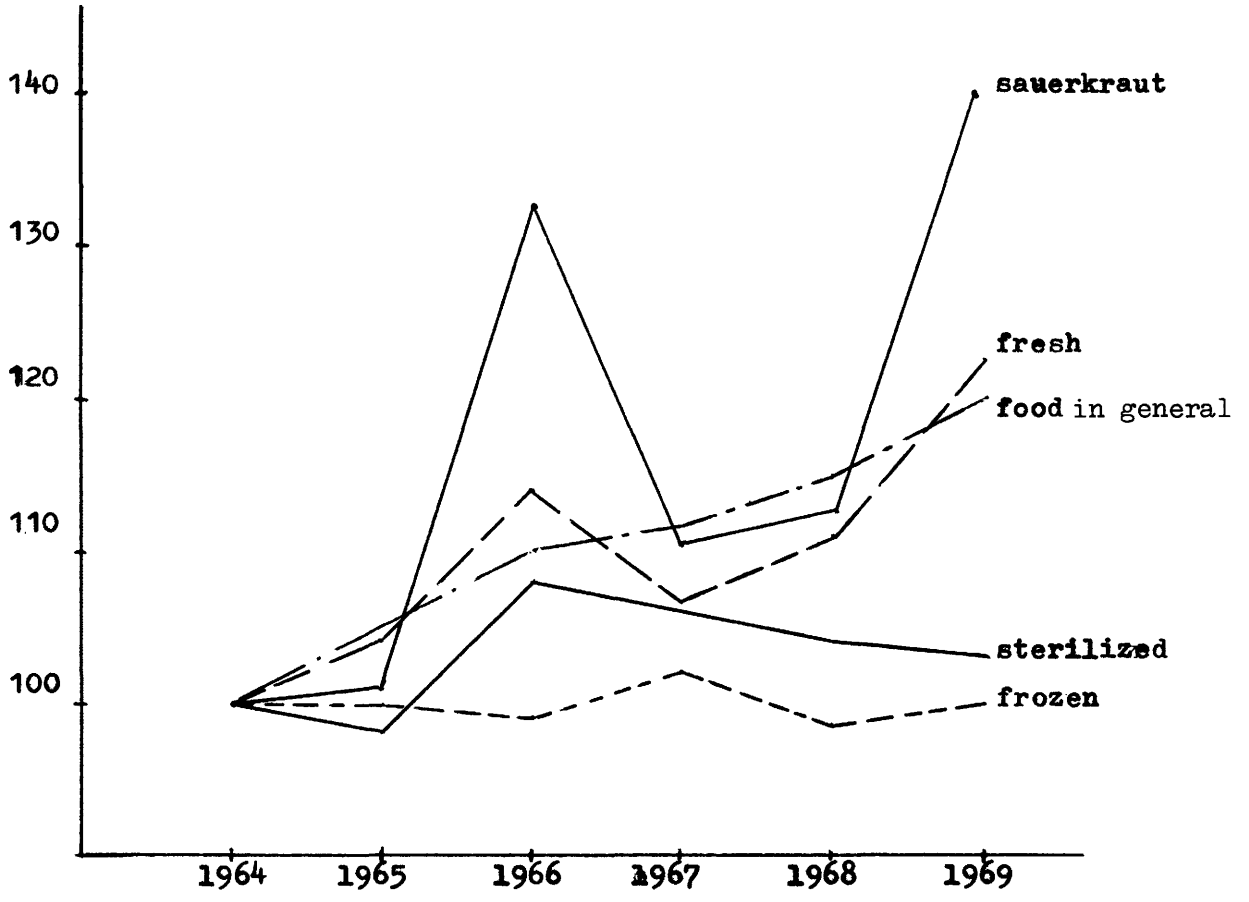
Table 3 : Imports and exports of processed vegetables and fruits by the Netherlands

value 1 000 U S dollars

year		world	E E C	BLEU	France	Germany	Italy	Other
1965	exports	33.006	21.774	4.376	1.201	15.921	276	11.232
	imports	43.977	14.278	7.111	1.519	2.444	3.314	29.699
1967	exports	49,031	34,668	6,263	949	26,971	585	14,363
	imports	55.591	21.784	8,550	1.791	6.675	4.768	33.807
1969	exports	73.186	59.576	8.358	2.703	47,903	612	13.610
	imports	65.256	27,053	9.624	2.530	8.515	6.384	38.203
1971	exports	112,643	100.139	11.588	4.199	83.375	977	12,504
	imports	80,496	33,356	6,887	3.161	12.837	10.471	47.140

Source : O E C D trade sector 052 / 053 / 055

Graph 1 Consumerprice-indices



source: C.B.S.

Table 4. Main Companies

Company & Country of origin	Processor in F & V industry	Main Products	Employees
1. Unilever the Netherlands	De Betuwe Tiel	jams,sirup,juices, fruit pulp	600
	L.Aardenburg, Hoogeveen	deep-freeze production, ready meals, juices	1250
	I G L O Utrecht	sales office of L. Aardenburg	
2.HERO Lenzburg Switzerland	Hero Conserven Breda	canning,dried soups,juices jams,drinks,sauces	1100
3. Nutricia the Netherlands	Preservenbedrijf Breda	dried products,frozen, snacks	350
	Spijer,van der Vijver & Zwanenburg	canning,juices,concentrates deep-freeze,pickles,jams,	
	Etten-Leur	gherkins	750
4. Consolidated Foods Corporation U S A	van Wagenberg-Festen Conserven-febrieken,Heusden	canning,jams,juices, gherkins	540
5. I T T Food products U S A	Groko	deepfreeze,ready meals	350
6. A K Z O the Netherlands	Welco Conserven Assen	canning,dried products, deep-freeze,sauces	300
7. H.J.Heinz U S A	H.J. Heinz	canning,juices	?
8. Ets.Blanchaud France	Sleutels Conserven L.E.Nieuwenhuizen Leiden (50 %)	canning,meals,sauces, gherkins,lemonades	150
9. Riscona Conserven & Co. W. Germany	Riscona, Warffum	canning	90

during the sixties. A typical picture of events has been as follows: Dutch companies of national importance carried out mergers amongst themselves, and the group was afterwards taken over by some international combine. Examples are:

- van Wagenberg Festen Canning Company at Heusden in Brabant which took control of Coenen Canning, the largest mushroom processor in 1969; later Consolidated Food of Chicago became the 100 % owner.
- Wilco Canning of Assen was taken over by Duyvis in 1965; in 1969 the group was merged into the A K Z O consumer products division .
- De Betuwe, Tiel, the large Dutch jam producer, Lucas Aardenburg at Hoogeveen and I G L O, Utrecht have been taken over by Unilever.
- Spijer and van der Vijver merged and later combined with Zwanenburg, wich had merged earlier with Vink. The total combination was taken over by Nutricia in 1972.

The penetration of large, diversified international firms was therefore a rather general phenomenon, and, though the total number of companies according to table 1, seems not to have declined, the picture is different once the various product markets are considered separately. Table 5 summarizes the main developments in product markets

Table 5 Concentration in the main product-markets

	Number of processing companies		share of markets
	Postwar	Present	held by:
1. Vegetables canning	35 of which 20 large	20 of which 10 large	10 large: 80 %
2. Fruit canning	--	--	10/12 large: 90 %
3. Jams	40	15	5 large: 75/80 %
4. Deep-freeze	6	4	3 large: 90 %
5. Mushrooms	--	20	mainly small firms*)

Source: Estimates from Central Bureau of Horticultural Auctions.

*) two companies belong to international groups: Coenen's Conserven, a subsidiary of Consolidated Foods, and Nieuwenhuizen, in wich Blanchaud of Chacé, France has a 50 % interest.

Comments on Tables 6 to 13

As many products in the fruit and vegetables processing industry are substitutes (though processed by various methods) and separate data on the product markets per company are not available, the concentration measures have been calculated for the industry as a whole. Throughout, the thirty

to fourty largest companies have been considered for the calculation of concentration ratios. For the other indices, the values of the smaller companies were approximated by means of linear interpolation. No financial data were available because of the structure of the industry and in particular because of the influence of the international firms. The main findings are :

1. For sales (both domestic and exports) the level of concentration is highest, but there is a tendency to decrease throughout the years. This is especially pronounced for the four largest companies; the smaller companies within the group of fourty largest do not add to deconcentration or only to a small extent. It follows that the structure of the group of the largest firms has become more equalized, as is also apparent from the V and G indices. The mergers carried out by the "majors" are not foreign to this development.
2. For employees, the decline in concentration on the level of the largest companies is much less, and beyond the eight-largest firms does not appear at all. This denotes a similar equalization of the structural composition of the largest companies, and some slight improvement of the position of the group of 40 largest as a whole in comparison with the other firms. Likewise, the V and G indices have remained constant, whereas Herfindahl and Entropy indices showed declining concentration to 1968 and then rose again to about their previous levels.
3. Comparison of the concentration levels between domestic and export sales on the one hand and employees on the other may lead to the conclusion that the larger firms are more mechanized, so that their output and sales per employee are higher than for the medium sized companies and small firms. Likewise, the greater degree of vertical integration in the larger companies might sustain such an idea. But this is certainly not the whole (or even the most important) reason for the differences, as the level of investment concentration of the larger companies is equal to, or lower than that of employee or sales concentration. Another explanation of this difference may therefore be more in accordance with the facts : that the larger companies have been less successful in penetrating new sub-markets, where expansion is high and investments per unit of output and sales. are relatively large. That is why their market shares have declined during the period. In order to counter the increasing competition they have taken over other relatively large firms. In this way their investments (in wich the sums paid for the companies taken over do not figure) have remained modest and investment concentration is

lower than employee or sales concentration. Only in 1970 and 1971 is the discrepancy less (though it has not disappeared altogether) because of the expansion in the deep-freeze sector, where the large companies are strongly represented. This explanation is also consistent with the much smaller relative concentration of investments than of sales or employees, as shown by the variation and Gini-coefficients, in the years 1963-69. In 1970 and 1971 the discrepancies here were likewise reduced.

4. The tables on the Linda-coefficients confirm the ideas developed above. The L-index measures the degree of oligopolistic equilibrium or disequilibrium, or the degree of competition between the oligopolistic firms in the market. In tables 10 - 13 the oligopolistic group of competing firms is large for domestic and export sales and employees but is lower for investments. For domestic sales, employees and investments, the N'_m values have a tendency to decrease throughout the years, though the $^{L}N'_m$ values remain relatively stable and relatively low. They indicate for all variables an equalized oligopolistic competition, confirming our earlier finding that competition is fierce. The mergers had no influence on the intensity of competition in this industry. For exports, N'_m rises in later years to over 30 firms, and deviates from the total group considered without appreciably altering the $^{L}N_m$ values.

The maximum values N'_h and $^{L}N'_h$ are also instructive. For domestic sales, the dominant group of firms was enlarged up to 1970 and then fell back to the old level of two. The $^{L}N'_h$ indices for all variables are between o.5 and 1.16, denoting an unequalized oligopolistic structure, i.e. a strong position of the few largest firms (N'_h), without however impairing the competitive process. Moreover the large fluctuations in the $^{L}N'_h$ indices also point towards an intensive competition. It is to be remarked that for investments the $^{L}N'_h$ is relatively weak, confirming our earlier conclusion and sustaining the idea that the largest firms are not also proportionately the largest investors.

Table: 6 Vegetables and Fruit Processing Industry

Concentration coefficients,variable: domestic sales

			Concentration ratios								
	V	G	4	8	12	15	20	30	40	H	P
1964	2.905	0.8285	48.75	63.73	73.30	78.21	84.39	92.43	97.51	81.38	-136.6
1965	2.237	0.6735	36.56	48.58	56.89	61.98	69.14	77.12	82.37	50.05	-164.6
1966	2.103	0.5875	34.53	46.36	56.04	61.39	66.80	74.27	78.15	46.34	-169.1
1967	2.038	0.6543	35.54	49.48	60.20	65.65	72.31	80.43	84.63	45.59	-163.4
1968	2.126	0.6187	36.21	48.13	57.32	62.26	67.39	74.31	79.40	49.72	-166.1
1969	1.940	0.6156	33.71	45.43	55.37	61.26	68.24	76.16	81.05	44.95	-166.7
1970	2.274	0.7044	37.59	51.46	63.22	69.80	77.21	85.03	88.49	55.10	-156.2
1971	1.946	0.6482	31.70	45.67	57.11	62.99	70.32	78.25	82.85	43.54	-165.9

Table: 7 Vegetables and Fruit Processing Industry

Concentration coefficients variable: employees

	V	G	Concentration ratios 4	8	12	15	20	30	40	H	P
1964	2.084	0.5449	32.93	44.38	51.40	55.27	60.39	68.01	73.65	46.03	-173.7
1965	1.707	0.5597	27.39	40.81	50.41	54.90	60.45	68.82	74.47	32.63	-178.2
1966	1.692	0.5476	27.66	41.70	50.20	54.41	60.20	68.62	74.18	33.00	-177.9
1967	1.580	0.5289	26.82	40.52	50.31	54.84	60.63	68.58	73.90	30.93	-178.3
1968	1.559	0.4458	26.31	39.71	48.36	52.59	57.64	64.91	69.69	30.91	-180.0
1969	1.620	0.5540	28.73	42.99	53.79	58.74	63.69	71.83	77.19	34.18	-173.5
1970	1.752	0.6156	29.13	44.30	55.13	60.58	67.01	74.85	80.09	36.33	-171.0
1971	1.702	0.5552	28.29	41.79	52.06	57.46	63.21	70.51	75.88	35.44	-174.7

Table: 8 Vegetables and Fruti Processsing Industry

Concentration coefficients variable: investments

			Concentration ratios								
	V	G	4	8	12	15	20	30	40	H	P
1964	1.496	0.4789	27.82	38.93	45.11	47.79	52.07	60.11	67.43	27.90	-183.2
1965	1.126	0.2609	22.17	30.32	33.80	35.75	38.94	45.27	51.56	18.90	-194.9
1966	1.004	0.3402	18.74	29.00	36.69	40.41	44.19	51.38	58.24	17.17	-194.1
1967	1.172	0.4360	21.60	30.78	38.66	43.72	49.03	57.80	65.79	21.01	-188.4
1968	1.145	0.3679	21.08	33.48	42.03	46.00	49.91	55.98	61.92	20.83	-188.5
1969	0.909	0.2774	17.78	28.87	35.86	39.24	42.98	49.88	56.71	17.22	-192.0
1970	1.681	0.4000	31.07	41.99	49.71	52.40	54.85	59.06	63.44	34.17	-179.2
1971	1.709	0.5374	28.49	49.17	57.75	60.47	63.33	68.61	73.58	35.65	-172.4

Table: 9 Vegetables and Fruit Processing Industry

Concentration coefficients variable: exports

			Concentration ratios								
	V	G	4	8	12	15	20	30	40	H	P
1964	2.809	0.8169	45.19	66.79	78.33	82.96	88.83	93.35	94.12	76.65	-136.4
1965	2.356	0.6958	38.57	56.73	67.08	72.20	78.57	83.04	84.92	54.58	-156.2
1966	1.877	0.6102	31.71	47.17	55.19	60.43	66.52	72.87	77.86	38.66	-171.3
1967	2.543	0.7105	42.18	59.44	68.61	73.70	78.89	84.95	86.76	66.09	-151.6
1968	2.508	0.6915	40.87	56.19	64.92	69.44	74.76	80.75	84.54	65.66	-155.7
1969	2.234	0.6982	38.66	54.48	64.77	69.96	75.52	82.13	86.32	56.53	-156.2
1970	1.857	0.6205	32.40	49.20	58.37	63.88	70.30	77.57	81.33	39.72	-167.5
1971	2.238	0.7046	38.62	55.34	65.54	70.75	76.89	83.18	87.04	54.63	-156.5

Table: 10 Vegetables and Fruit Processing Industry

Linda-coefficients variable: domestic sales

	L_s	N'	N'_m	$L_{N'_m}$	N'_h	$L_{N'_h}$	$N'_{h<}$	$L_{N'_{h<}}$
1964	0.2858	39	39	0.1669	2	0.7678	2	0.7678
1965	0.2750	35	34	0.1441	2	0.7177	2	0.7177
1966	0.2777	33	33	0.1486	2	0.6855	2	0.6855
1967	0.2251	35	35	0.1387	2	0.5248	2	0.5248
1968	0.2892	33	33	0.1656	3	0.6741	3	0.6741
1969	0.2727	32	30	0.1491	4	0.6616	4	0.6616
1970	0.2453	35	35	0.1540	4	0.6171	4	0.6171
1971	0.2718	34	28	0.1473	2	1.0420	2	1.0420

Table: 11 Vegetables and Fruit Processing Industry

Linda-coefficients variable: employees

	L_s	N'	N'_m	$L_{N'_m}$	N'_h	$L_{N'_h}$	$N'_{h<}$	$L_{N'_{h<}}$
1964	0.2886	40	40	0.1297	3	0.9978	3	0.9978
1965	0.2168	38	38	0.1170	3	0.7074	3	0.7074
1966	0.2141	40	40	0.1146	3	0.7046	3	0.7046
1967	0.2006	40	40	0.1164	3	0.5913	3	0.5913
1968	0.2298	38	37	0.1243	3	0.7533	3	0.7533
1969	0.2082	39	39	0.1246	2	0.7218	2	0.7218
1970	0.2141	35	35	0.1323	3	0.6176	3	0.6176
1971	0.2366	37	37	0.1288	2	1.1640	2	1.1640

Table: 12 Vegetables and Fruit Processing Industry

Linda-coefficients variable: investments

	L_s	N'	N'_m	$L_{N'_m}$	N'_h	$L_{N'_h}$	$N'_{h<}$	$L_{N'_{h<}}$
1964	0.3474	14	12	0.2628	2	0.6179	2	0.6179
1965	0.3611	14	14	0.3047	2	0.6829	2	0.6829
1966	0.4262	17	15	0.1538	2	0.5141	2	0.5141
1967	0.2988	18	16	0.1454	2	0.7053	2	0.7053
1968	0.2706	19	13	0.1597	2	0.6391	2	0.6391
1969	0.2644	17	16	0.1627	2	0.6875	2	0.6875
1970	0.3889	18	12	0.2451	2	0.5971	2	0.5971
1971	0.2652	19	9	0.1709	2	0.5435	2	0.5435

Table: 13 Vegetables and Fruit Processsing Industry

Linda-coefficients variable: exports

	L_s	N'	N'_m	$L_{N'_m}$	N'_h	$L_{N'_h}$	$N'_{h<}$	$L_{N'_{h<}}$
1964	0.3066	25	25	0.2173	2	0.8889	2	0.8889
1965	0.2844	24	21	0.1860	2	0.6270	2	0.6270
1966	0.2576	27	26	0.1730	2	0.6294	2	0.6294
1967	0.3174	29	28	0.2150	2	0.9013	2	0.9013
1968	0.3416	30	29	0.2165	2	1.0770	2	0.0770
1969	0.2674	36	36	0.1813	3	0.6945	3	0.6945
1970	0.2165	39	31	0.1579	2	0.5839	2	0.5839
1971	0.2607	40	36	0.1804	2	1.0260	2	1.0260

Appendix A.: List of mergers since 1964

1964 - Spijer Brothers and van der Vijver merge into the Company Spijer & van der Vijver.

1965 - Wilco Conserven is being taken over by Duyvis of Zaandam.

- Luyck's Producten N.V. taken over by Mc.Millan's voedingsmiddelen N.V. (a Canadian producer)

1969 - Groko taken over by I T T

- Wagenberg - Festen acquires control of Coenen Conserven N.V.
- Luyck's producten takes over N.V. Kon. Hart Zuurkoolfabriek (a sauerkraut producer)
- Wilco becomes part of A K Z O

1970 - Sleutels Conserven of Leiden and the French firm Ets. Blanchaud at Chacé have agreed on a take over of a majority participation of Blanchaud in Sleutels (1970). The firms have resp 2500 and 200 employees, and operate resp 10 and 2 plants. Blanchaud - with subsidiaries in Germany and Spain - produces vegetables-, meat-, and fish canned foods; the company applies a new dry-freezing process. Sleutels Conserven is in the vegetables and canning sector.

1971 - Nutricia acquires control of Preservenbedrijf N.V. at Breda from Amstel Brewery, Amsterdam

- Spijer & van der Vijver merges with A. Zwanenburg, the fruit and vegetables canner.

1972 - Nutricia acquires S V Z (the combination Spijer & van der Vijver and Zwanenburg, formed in 1971).

Part 4: Concentration in the meat processing industry

Report on Concentration in the Dutch Meat Processing Industry

1. General Survey

The meat processing industry is a large sector within the whole of the Dutch food industry. In 1969, the turnover of the food, drink and tobacco industry in the Netherlands was Fl. 20,870 million, of which Fl. 5,230 was accounted for by exports. The meat products sector came second with a turnover of more than Fl. 3,000 m., compared to Fl. 4,500 million for the dairy industry and Fl. 900 million for the fruit and vegetables sector.

A noteworthy feature of the meat processing industry has been the traditional reliance on exports, which, since 1969 have surpassed domestic sales both in amount and rate of growth. Moreover, exports are much larger than imports. The three main segments of the meat processing industry are meat processing and canned products, the deep-frozen poultry sector and the slaughteries; their relative importance in later years is given in table 2. The frozen poultry market has expanded especially fast. The canning sector grew much slower. Sales of meat in cans and glass jars rose from 115 million liters in 1969 to 132 m. lts. in 1970, but declined in succeeding years to 120 million liters in 1972. Sales of other meat processed remained stable. See table 3. The canning segment is made up of minced meat, canned sausages, liver paté and luncheon meat (about one-third), and a large number of miscellaneous items such as canned pork and beef, goulash and corned beef (two-third, of which the last product holds some 5 %).

The canned meat segment consists of two parts:
- plain meats without added fats, such as ham products and tongues
- canned meat delicacies with up to 50 % fat content and containing spices added, such as sausages and luncheon meat.

There are a large number of producers, ranging from diversified international giants like Unilever, or specialised large producers such as Homburg, to smaller companies, or those belonging to food chains. The meat bussiness is such that no clear-cut picture can be drawn of the various activities of the manufacturers, e.g. those processing meat, or producing the canned product, or the delicacies.

Since 1964 the industry grew at a fast rate, but in 1969/1970 growth tapered off on the domestic market. Investments and exports continued to increase to new heights however (table 1). But export prices had to be reduced. One of the reasons for the relatively slow growth of domestic sales of canned meat is the availability of fresh meat of good quality. Another is the high price of canned meat. Table 4 gives the price developments of canned meat and slaughterhouse products. It should be read together with table 5 which illustrates the proportion of total meat supplies which is processed.

For the main products, pork and beef, the fraction is about one-fifth to one-tenth. It follows that the processing sector is heavily dependent for its input on the market quotations of the slaughterhouses, even though some of the largest companies have integrated vertically backwards into raw materials production. The rising price of slaughtered meat has driven up the input quotations for processed meat and, together with increasing wages and several charges, has affected the output prices and profitability of canned meat products (moreover the tinplate cans have also become more expensive). Producer prices have risen 49 % between 1962 and 1972, but export prices have gone up only 15 % to 1970 and thereafter fell, so that the rise between 1962 and 1972 was only 6 %.

As Dutch canned meat is being exported to large foreign markets (table 6), the exporting companies had to measure their price increases. This scissor-like development of fastly increasing costs of inputs and processing and much more modest increases of output prices (and in particular export prices) has impaired the profitability of several companies. In particular the smaller companies, and those which were not integrated vertically (either forward into the retail business or backwards into meat production) have felt the pinch. Also, some larger companies have not been able to escape the profit squeeze and the result has been a flattening of growth since 1969, some liquidations and some mergers.

2. Companies and Mergers

The main companies in the sector can be divided into groups.

The first group comprises the very large divisions of international companies or large specialised companies. These are the meat processing companies of Unilever, now the largest producer in the Netherlands; Coveco, the cooperative slaughtering and meat processing firm, and Homburg, taken over in 1972 by J. Lyons and Comp. ltd. (London). These companies each sell about Fls. 300 million or more, of which the major part abroad. Among these large companies also figures the poultry slaughtery of Friki in recent years. After having taken over C. Rep. N.V. in 1968, a merger was consumated in 1971 between two main poultry firms of Pluimveeslachterij Wezep N.V. and Cooperative Pluimvee Slachterij Boxmeer, to which Goossens N.V. was added in 1972. The result was a combination with sales of some Fls. 270 million, compared to the next largest having sales of about Fls. 55 million.

The second group consists of the large domestic companies with sales of between Fls. 50 million and Fls. 200 million in 1971. Here, Export Centrale Boxtel, Stroomberg N.V., Gevato, Groot and Booy, Jansen, Export Slaughtery Vos, van de Bend and Luto are the main companies. For most of these companies, the export market is relatively less important than for the companies

of the first group, though all of them sell more than 1/3 of their output abroad and there are some noteworthy exceptions of companies which sell more than half of their output in foreign countries (Export Centrale Boxtel, van de Bend, Jansen and Luto).

The third group is made up of domestic producers, selling mainly on the domestic market (de Meester, Compaxo, Beckers, Stegeman; De Meester is integrated with A. Heyn, the largest retailer in the Netherlands).
The fourth group comprises smaller companies, which have some share in regional markets and may be active exporters (such as Persoon, Lisse and Schop, Rotterdam), while a fifth group has become important as suppliers of special products such as snackbar items (meat balls, sausages).

The positions of the leading companies within the industry have shifted markedly between 1965 and 1971. For the group of 19 leading companies, we ranked each of them in the years 1965, 1967, 1969 and 1971 according to their position in total sales and calculated rank correlation coefficients. These gave the values 0.49, 0.45 and 0.22 for the comparative years 1965-1967, 1965-1969 and 1965-1971. Neither were the positions among the leading five companies stable: companies number one and five had disappeared altogether in 1971, while two of the three others also shifted their rank. Many pre-war independents have been taken over by the leading companies in the periode up to 1964/65: among them were E. Noack's Fijne Vleenwaren- en Conservenfabriek (1964), Anton Hunink (1965), Uithoornse Baconfabriek (1964) and Neco (all by Zwanenberg-Organon); Bakhuis' Olba Conservenfabrieken, and Exportslachterij Udema (both by Unilever). In later years merger activity continued, a,o, the taking over of Zendijk's Vleeswaren- en Conservenfabriek at Olst by Homburg in 1970. But this was small fry compared to the agreement reached in the same year between the two giants Unilever and Akzo, whereby Unilever acquired Zwanenberg-Organon's meat processing interests. Following the acquisition of Zwanenberg, the Unilever group's meat processing business has been reorganised so that marketing and sales are controlled by the Unox subsidiary, while purchasing and production come to rest with Zwanenberg. The meat processing interests of the new groups have an employment of some 6200 persons, and total-sales of some Fls. 600 million, of which 50 % are exports. The reasons for the sale of Zwanenberg's meat processing interests were that the food sector had become of secondary importance (8 % of total sales) in the Akzo chemical and synthetic fiber combination, while moreover, the meat sector was not very profitable. (Notwithstanding the series of mergers mentioned before). The other main merger was the take-over of Homburg by the J. Lyons Company of Great Britain in March 1972. This entailed an integral take-over of this important Dutch meat processor, which is one of the main

exporters, in particular of canned hams to the U.K. and the U.S.A. In August 1972 Homburg took over the Beckers firm at Deurne, which occupied about the twentieth place in the ranking of companies.

3. Concentration indices (tables 7-14)

It follows from the behaviour of the concentration ratios (tables 7-10) that the mergers of 1970 and 1971 have had a profound influence on concentration in the top, while the mergers of earlier years (1964-1967) have strengthened the position of the leading companies as against the rest. Both tendencies are apparent from:

- the increase in the concentration ratio of the four largest companies with respect to domestic sales, exports, employees and (inversely) investments. This concentration ratio rose by some 4.5 to 6 percentage points from 1970 to 1971, but the companies in the classes 4-8, 8-12 and so on, on balance yielded a few percentage points. This denotes deconcentration among all but the four leading companies. The investment-concentrationratio declined markedly for the 8 largest (in particular the 4 largest companies) in the later years, indicating the well-known phenomenon that the largest companies effected the mergers not alongside of internal investments, but in place of them. The same tendencies are visible from the Herfindahl and (to a lesser extent) Entropy-indices.
- The V and G-indices mark a rise in relative concentration especially since 1967. This may partly reflect the market strategy of the majors to acquire control of the second echelon of large meat processors and canners, so that their relative position (vis à vis the rest of the trade) became more important. For another part, the cyclical recession of 1966-67 may have been influential in changing the indices.
- The L-indices denote the same tendencies, but less clear, probably because the oligopolistic competitive range remained wide (see L_{N_M} values for domestic sales, employees and exports). The group of dominant firms stays however relatively stable at 2 (or exceptionally 3) firms for these variables while the L_{N_H}-indices go up markedly from 1970 to 1971 (this may be due to the large merger in the trade effected between Unilever and Akzo). The L_{N_H}-index is even above 1 in 1971, for domestic sales it approaches 1 (0.84), but, curiously enough, for exports it declines to 0.52. Thus the mergers have not hampered the growth of exports by the smaller firms, which on the whole has been fast. The behaviour of investment indices seems to be in accordance with our previous conclusion: there were more changes in the number of dominant investors, while the index went up to 1966 and then declined, especially in 1971.

Table 1 Main statistics concerning the Meat Processing Industry

	1964	1965	1966	1967	1968	1969	1970	1971
Domestic sales million Fls	965	1061	1204	1273	1380	1502	1674	1678
Employees thousands	17.0	17.7	19.2	20.3	21.5	20.8	22.0	21.9
Investments million Fls	39.5	39.8	48.2	65.5	57.8	51.7	92.0	97.5
Exports million Fls	800	928	1003	1108	1332	1559	1874	1955
Number of companies	135	146	154	169	173	182	181	175

source: C.B.S.

Table 2 Maim statistics of the Meat sector*

		number of companies	employees	output x	input x	wages, salaries & social charges x
slaughteries	1969	11	700	368.6	341.2	10.4
	1970	10	800	406.4	370.5	12.8
	1971	9	900	442.5	401.2	17.3
poultry slaughteries						
	1969	22	370	.	.	.
	1970	25	490	608.4	491.4	64.3
	1971	23	510	680.4	554.0	76.8
meat processing & canning	1969	30	14,400	1872.7	1495.9	200.5
	1970	31	14,600	2095.3	1641.3	238.2
	1971	35	15,200	2222.0	1755.4	296.5

*large firms with more than 50 employees

source: C.B.S.

x in million guilders

Table 3 Sales of the Meat Processing Industry

	1967	1968	1969	1970	1971	1972
Canning (in tinplate and glass jars) Million liters	115	129	127	132	130	120
Other meat processing million kilograms	.	84	83	82	82	84

Source: C.B.S.

Table 4 Price Developments, 1962=100

	Price-indices of			
	Slaughterhouse meat		Processed and canned meat	
	producer prices	export prices	producer prices	export prices
1963	112	112	105	102
1966	134	134	123	118
1967	132	135	124	110
1968	134	133	125	108
1969	154	145	130	110
1970	152	146	139	115
1971	151	173	143	106
1972	142	155	149	106

Source: C.B.S.

Table 5 Total Meat Supplies and to the Processing sector
(in 1000 tons of boned meat)

	Output of Meat				Supplies of meat to processing industry		
	1969	1970	1971	1972	1969	1970	1971
Beef	184	216	212	154	21.4	19.8	15.4
Veal	88	101	104	97	0.4	0.3	0.1
Pork	614	705	809	816	150.4	154.5	163.6
Poultry	304	342	405	443	1.3	1.4	1.6
Others	15	17	16	13			
Offal	55	64	68	64	21.2	23.4	21.2
	1260	1445	1614	1587	194.6	199.3	201.9

Source: C.B.S.

Table 6 Exports and Imports of Meat and Meat preparations
in millions of US dollars

		World	EEC	BLEU	France	Germany	Italy	Others
1965	exports	380.1	276.3	25.3	71.0	112.2	67.8	103.8
	imports	50.1	9.2	7.8	.4	.9	.1	40.8
1967	exports	414.3	282.4	15.0	52.3	133.1	82.0	131.9
	imports	58.9	19.2	14.7	2.7	1.6	.3	39.7
1969	exports	593.6	450.5	17.3	138.5	209.8	84.7	143.1
	imports	81.2	35.5	16.7	13.6	5.0	.2	45.6
1971	exports	788.6	623.4	21.0	116.7	328.6	157.1	165.2
	imports	99.2	37.1	20.0	10.4	6.5	.3	62.1

Source: OECD

(ω)

Table 7 Concentration indices of the Meat and Meat Processing Industry

variable: domestic sales

	V	G	Concentration ratio 4	8	12	15	20	30	40	H	P
1964	2.007	0.5774	30.44	44.34	53.21	59.19	67.03	72.14	74.79	37.24	-175.2
1965	2.216	0.6540	33.68	49.97	58.61	64.14	70.92	78.20	80.08	40.47	-169.6
1966	2.156	0.6574	30.28	46.72	56.29	62.00	69.26	78.69	80.40	36.66	-172.8
1967	2.458	0.6883	33.65	47.45	57.50	63.05	69.64	79.32	82.01	41.68	-170.9
1968	2.423	0.6837	32.36	45.78	55.84	61.80	68.29	78.44	81.67	39.70	-172.9
1969	2.428	0.6972	31.59	45.53	56.34	61.36	67.99	78.79	82.54	37.87	-173.4
1970	2.371	0.6735	31.40	45.30	55.26	60.07	66.50	76.96	80.35	36.59	-176.0
1971	2.789	0.7065	35.80	48.28	57.74	62.91	69.64	79.31	83.35	50.17	-168.4

Table 8 Concentration indices of the Meat and Meat Processing Industry

variable: employees

			Concentration ratio								
	V	G	4	8	12	15	20	30	40	H	P
1964	2.479	0.6573	38.92	53.01	61.65	66.57	72.85	78.50	80.55	52.94	-163.8
1965	2.889	0.7017	42.28	55.98	63.77	68.48	74.79	81.59	83.17	64.01	-159.0
1966	2.530	0.6004	37.34	50.07	56.86	61.32	66.69	71.69	73.96	48.06	-172.8
1967	3.139	0.7194	44.94	56.45	63.30	67.71	73.44	80.60	83.40	64.20	-160.4
1968	3.164	0.7050	45.58	56.45	63.77	68.27	73.91	79.98	81.38	63.65	-161.3
1969	3.182	0.6573	43.93	57.02	63.99	68.46	73.11	79.34	79.68	61.12	-161.8
1970	3.022	0.7058	41.78	56.43	64.08	68.29	72.82	78.99	81.27	55.97	-164.4
1971	3.628	0.7158	48.92	58.98	66.58	70.42	74.39	80.06	81.74	80.92	-156.5

Tabel 9 **Concentration indices of the Meat and Meat Processing Industry**

variable: investments

	V	G	Concentration ratio 4	8	12	15	20	30	40	H	P
1964	2.536	0.6822	40.78	57.34	66.25	70.84	76.13	80.03	81.93	55.04	-159.3
1965	2.391	0.5162	35.78	47.56	53.64	56.88	61.03	64.12	67.22	46.01	-177.4
1966	3.262	0.6900	47.63	57.16	62.95	65.75	68.57	72.97	76.86	75.60	-160.3
1967	2.437	0.4999	37.63	47.82	51.27	53.11	55.94	59.45	62.75	41.07	-183.3
1968	1.933	0.3485	27.35	35.64	39.91	42.06	44.38	47.85	51.34	27.39	-198.4
1969	2.108	0.5128	30.50	38.34	43.23	45.84	49.32	54.59	59.40	29.90	-194.2
1970	1.362	0.2228	19.21	28.24	32.50	34.82	37.53	40.64	43.36	15.78	-209.0
1971	1.535	0.3089	21.14	29.56	36.23	40.11	44.80	49.20	51.57	19.19	-203.4

Table 10 **Concentration indices of the Meat and Meat Processing Industry**

variable: Exports

	V	G	Concentration ratio 4	8	12	15	20	30	40	H	P
1964	2.200	0.7045	34.04	51.00	61.35	67.11	73.83	82.00	86.41	43.28	-163.8
1965	2.246	0.7419	32.21	50.08	60.09	65.79	72.75	83.52	89.88	41.41	-163.2
1966	1.905	0.5925	27.99	42.02	50.39	54.78	61.30	70.18	75.49	30.07	-182.2
1967	2.672	0.7608	38.39	51.48	61.50	66.90	73.30	81.94	88.16	48.16	-162.6
1968	2.878	0.7952	40.25	54.05	64.34	69.35	75.79	84.95	90.65	53.66	-157.3
1969	2.965	0.8138	39.20	56.13	65.01	69.94	76.43	85.13	90.70	53.80	-156.1
1970	2.980	0.8455	40.15	55.85	65.28	70.71	78.08	87.54	93.10	54.60	-151.6
1971	3.182	0.8537	45.26	58.10	66.32	71.43	78.48	88.45	93.74	54.60	-151.6

Table 11 Linda-coefficients of the Meat and Meat Processing Industry

variable: domestic sales

	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.2766	23	23	0.1402	2	0.8905	2	0.8905
1965	0.2235	26	26	0.1392	2	0.5722	2	0.5722
1966	0.2108	29	29	0.1236	2	0.6379	2	0.6329
1967	0.2248	32	32	0.1256	2	0.5588	2	0.5588
1968	0.2164	33	33	0.1185	2	0.5140	2	0.5140
1969	0.1993	34	34	0.1127	2	0.5445	2	0.5445
1970	0.1983	34	34	0.1185	2	0.5013	2	0.5013
1971	0.2667	35	35	0.1297	2	0.8426	2	0.8426

Table 12 **Linda-coefficients of the Meat and Meat Processing Industry**

variable: employees

	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	$N^*_{h<}$	$L_{N^*_{h<}}$
1964	0.2915	27	27	0.1891	3	0.6103	3	0.6103
1965	0.3216	30	30	0.1941	3	0.7198	3	0.7198
1966	0.3115	27	27	0.2056	3	0.5873	3	0.5873
1967	0.3105	34	34	0.1835	2	0.7003	2	0.7003
1968	0.3268	30	30	0.2127	2	0.6919	2	0.6919
1969	0.3209	31	30	0.2158	2	0.6694	2	0.6694
1970	0.2910	33	33	0.2025	2	0.6570	2	0.6570
1971	0.4030	31	31	0.2439	2	1.1220	2	1.1220

Table 13 **Linda-coefficients of the Meat and Meat Processing Industry variable:investments**

	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	N^*_h	$L_{N^*_h}$
1964	0.2863	24	23	0.2201	2	0.5588	2	0.5588
1965	0.3823	20	20	0.2583	3	0.6977	3	0.6977
1966	0.4798	26	26	0.3351	2	0.8691	3	0.8691
1967	0.4550	23	4	0.3273	2	0.6038	2	0.6038
1968	0.4246	20	18	0.3087	4	0.6396	4	0.6396
1969	0.3419	26	26	0.2116	2	0.6391	2	0.6391
1970	0.2815	28	28	0.2078	2	0.6586	2	0.6586
1971	0.2841	33	22	0.1570	3	0.5932	3	0.5932

Table 14 Linda-coefficients of the Meat and Meat Processing Industry

variable: exports

	L_s	N^*	N^*_m	$L_{N^*_m}$	N^*_h	$L_{N^*_h}$	N^*_h	$L_{N^*_h}$
1964	0.1996	36	36	0.1326	2	0.5207	2	0.5207
1965	0.1833	39	39	0.1109	2	0.6295	2	0.6295
1966	0.1881	38	38	0.1067	2	0.6232	2	0.6232
1967	0.2162	40	40	0.1265	2	0.5961	2	0.5961
1968	0.2297	40	40	0.1369	2	0.8110	2	0.8110
1969	0.2289	40	40	0.1407	2	0.7855	2	0.7855
1970	0.2173	40	40	0.1377	2	0.5927	2	0.5927
1971	0.2415	40	40	0.1466	2	0.5177	2	0.5177

List of Mergers

1964. - Zwanenberg-Organon acquires the control of N.V. Uithoornse Bacon- and Conservenfabriek, Uithoorn.
- Homburg takes over N.V. van Royen's slaughteries at Almelo, G. Hunink, a meat processing firm at Wijhe and N.V. Twente Vlees Export Company.
- Gevato takes over N.V. Gebr. van Zadelhoff and Engross slaughtery N.V. Drostimex.

1965. - Zwanenberg-Organon takes over A. Hunink meat processing company at Deventer, with sales of Fls. 45 million.
- Homburg takes over the remaining minority interests in N.V. Van Dijk-Haarmeyer, slaughteries at Elburg, and the N.V. Stoomslachterij B. Linthorst & Sons at Wilp.

1966. - A. Heyn, the supermarket retailer takes control of J. Meester, meat processor at Wijhe; this effects a vertical integration.
- Pluimveeslachterij, a fastly expanding poultry slaughter, Wezep takes over a similar firm in Oostzaan: C. Rep N.V.

1967. - A merger occurs between the poultry slaughteries of G. Bekebrede & Zn. N.V. at Barneveld and Aheco N.V. of Wandenberg.
- Coveco, the large cooperative slaughtery and meat processor acquires N.V. Hollandse Vlees Combinatie Groot-Booy of Alkmaar.

1970. - Plumrose A/S of Denmark takes over Gevato (the meat processor and canner) of Driebergen.
- Homburg takes over Zendijk's Vleeswaren- en Conservenfabrieken at Olst; Zendijk is integrated with Verenigde Slachtbedrijven Salland at Olst, which also goes to Homburg.
- Nibecom export slaughteries acquire the control of Export Slaughteries De Haas of Winterswijk.
- Unilever acquires the integrated meat processing interests of Akzo, grouped in the Zwanenberg-Organon food division. This is the largest post-war merger in the Dutch meat processing industry, and comprises A. Hunink, Zwanenberg, Noack and Uithoornse Bacon Centrale. Unilever and Zwanenberg operated jointly since 1966 the pork research centre at Nieuw-Holland.

1971. - De Gruyter of 's-Hertogenbosch, a leading food retailer, partially owned by Unilever, acquires Difa, of Dordracht, a regional producer of deep frozen meat. It will supply supermarkets in the Rotterdam area. De Gruyter has its own slaughtery in the Utrecht-Eindhoven area, and announces similar plan for the Amsterdam area.

- Lockwood & Food Ltd. of London acquires the majority of shares in N.V. Lupack meat processing.
- A merger occurs between the poultry slaughteries Poultry Slaughtery Wezep and Coöperative Poultry Slaughtery Boxmeer, the two largest companies in this field: the new combination adopts the name Friki N.V.

1972. - J. Lyons and Comp. ltd. (London) takes a 100 % interest in one of the most important producers: Homburg N.V. (Cuyck).
- Homburg N.V. (see above) acquires Beckers of Deurne.
- Friki, the leading firm in the poultry slaughtery sector, acquires the second firm: Poultry Slaughtery Goossens N.V. at Rosmalen.

Part 5: Concentration in the dairy industry

CONCENTRATION IN THE DAIRY INDUSTRY

1. Introduction

The dairy industry in The Netherlands is based on the milk produced by farmers. This milk is being processed by the dairy industry into two main product groups: consumer milk products and industrial milk products. The first group comprises raw milk, processed milk and milk products like yoghurt, custard and chocolate milk. Processed milk is provided in many forms (full sweet milk, sterilized, pasteurized, sour milk etc.) and many packages (glass, plastics, cartons, etc.). The second group consists of the "industrial milk products" such as cheese, butter, milk powder and condensed milk. This group is by far the most important in terms of the total milk balance (see table).

Table 1: Milk balance 1972 of dairy plants
(in 1000 tons)

OUTPUT		INPUT	
Processed into consumption milk products	1830	Domestic milk supplies	8464
Processed into industrial products	6713	Derived from solution of powders	32
Returns to farmers as feedstock	58	Imports of milk	105
	8601		8601

In 1971, the Dutch share in E.E.C. milk output on the farm was 11%, the share in deliveries to dairy plants 14%. Though total domestic milk supplies to the dairy plants has steadily risen since 1965 (namely from 6485 thousand tons in 1965 to 8464 thousand tons in 1972) the two main sectors showed an uneven development. Whereas total consumption of consumer milk products stagnated, which meant a declining per capita consumption from 149 liters in 1960 to 137 liters in 1972 (table 2), the output of most industrial products increased (table 3). Only for cheese, per capita consumption has increased between 1968 and 1972; other products (butter, milk powder, condensed milk) showed a decline. During the preceding years of the fifties and sixties the domestic market for these products still had grown. The main reason for the output growth in later years was exports. The overall picture in the dairy industry (with the exception of cheese) thus reflects a stagnating home market for consumer products, and a continuing growth in the domestic sales and exports of most industrial milk products. This tendency has had an important effect on concentration in the industry and on the behaviour of individual companies. Another factor exerting a profound influence was the method

Table 2: SHARES OF THE MAIN SECTORS IN THE DAIRY INDUSTRY (in percentages)

	1969	1970	1971	1972
standardized milk	18.8	19.0	16.1	14.3
sour milk	3.1	3.5	4.2	4.4
cream	0.3	0.3	0.3	0.3
special products	0.7	0.7	0.9	0.8
total consumption milk products	22.9	23.5	21.5	19.8
cheese	34.6	34.2	36.6	35.6
condensed milk	15.6	14.9	14.1	12.8
milk powder	18.8	19.8	18.9	21.8
returns	1.6	1.3	0.9	0.7
various	5.1	6.7	6.2	7.4
butter	1.6	1.5	1.6	1.9
total industrial milk products	77.3	78.4	78.3	80.2

of packaging milk (table 4): the increasing share, first of glass, and later of plastic and milk cartons, has revolutionised the distribution of consumer milk products; the super markets, chain stores, cash and carry markets and lately the mobile retail cars have raised their share of total distributed milk to the detriment of the time-honoured milkmen (table 5). This development meant the appearance of large scale retailing organisations on the demand side of the market, which tilted the negotiating balance against the dairy firms. These dairy companies - mainly the cooperative organisations, which process 85% of delivered supplies, together with a few private family companies - have fought back by starting a process of regional concentration, in order to build up their market power.

Table 3: OUTPUT OF THE MAIN INDUSTRIAL MILK PRODUCTS (in 1000 tons)

	1968	1969	1970	1971	1972
butter	118.9	111.6	121.0	124.7	163.1
condensed milk	481.9	494.9	495.3	481.6	475.1
cheese	245.5	259.7	270.9	297.4	313.2
milk powder	144.5	138.8	152.9	151.0	195.2

Table 4: THE PACKAGING OF CONDENSED MILK (in percent)

	1960	1965	1970	1971	1972
Loose	35	21	4	2	1
Glass	64	77	71	65	60
Plastic	-	1	11	11	12
Cartons	-	1	14	22	27
	99	100	100	100	100

Table 5: THE HANDLING OF MILK SALES (in percent)

	1968	1970	1972	1973
1. Milkman	85	76	54	46
2. Mobile retail car	0	5	17	17
3. Shop	4	4	2	3
total milk trade	89	85	73	66
Retail chains	1	3	7	9
Comm. organisations & independents	6	7	14	14
Cash and carry markets	-	-	2	5
Total food trade	7	10	23	28
others	4	5	4	6
Total	100	100	100	100

2. Structural tendencies

A. Number of firms, plants, average sizes and multiplant companies.

A long term view of the dairy industry makes clear that the concentration tendencies made themselves felt after 1960, and particularly since 1965. The number of cooperative firms declined from 350 in 1955 to about 70 in 1973. Also the number of dairy plants went back, but to a much lesser extent (table 6). Whereas the number of companies was reduced to less than a fifth between 1950 and 1973, the number of plants was only about halved. Consequently, the average size of firm went up much faster than the average size of plant, indicating that technical factors were not the main reason for the concentration process.

This conclusion is reinforced by the recent tendency towards the multiplant dairy firm, on which table 7 gives more information. Within the span of four years, the number of one-plant firms fell from 113 to 36, and their market-

share was nearly halved. On the other hand the large, multi-plant firm increased its importance as a factor in the market from slightly over half to more than 75%. This again underlines other than technical causes for increased concentration, though of course, these were not completely absent.

Table 6: STRUCTURAL DEVELOPMENTS IN THE DUTCH COOPERATIVE DAIRY SECTOR (1950-1973)

	1950	1955	1960	1965	1970	1971	1972	1973
Number of firms	374	350	331	247	162	101	72	69
Number of plants	404	385	357	301	230	236	217	200
Average of milk receipts per firm*)	9.0	9.9	12.8	20.5	58.3	65.3	94.5	107.0
Average of milk receipts per plant*)	8.4	9.0	11.9	16.6	28.2	28.0	31.2	36.9

*) in million kilos

Table 7: MARKET SHARES OF ONE-PLANT AND MULTI-PLANT FIRMS (consumption milk sector)

	end of 1967			end of 1971		
Number of plants per firm	nr. of firms	nr. of plants	market %	nr. of firms	nr. of plants	market %
1	113	113	49	36	36	26
2 - 9	11	32	25	10	31	40
10 or more	1	13	26	2	25	34
total	125	158	100	48	92	100

B. Concentration Measures.

A long term comparison also points towards the increasing dominance of the top companies. Table 8 focusses attention on the share which the four- and ten largest companies had in the total received milk supplies of the cooperative firms. The pronounced jump between 1965 and 1971 is clearly visible. It was the period of the regional concentrations in the dairy industry, leading up to the formation of C.M.C. in the Western part of the Netherlands, Domo and C.C.F. in the Northern Provinces, Coberco in the Eastern Provinces and Campina in the South. Together, these regional cooperatives have started discussions in 1971/72 with a view to the formation of a national dairy union; but the discussions have broken

down, as a result of divergent views among the leaders of the groups concerned. There is nevertheless the feeling that sooner or later - depending on circumstances such as personalities, market power, import competition etc. - the talks will be resumed. The present state of concentration and its development since 1967 are given in table 9, where also the state of concentration in the customer's trades - milk distribution and food retailing - is presented.

Table 8: CONCENTRATION IN COOPERATIVE DAIRIES

	1950	1955	1960	1965	1970	1971
share of 4-largest	4.3	6.8	7.9	11.8	39.1	47.0
share of 10-largest	9.3	13.2	15.2	22.7	57.9	67.0

Table 9: NUMBERS OF COMPANIES AND CONCENTRATION INDICES IN MILK PROCESSING AND DISTRIBUTION

	MILK PROCESSING		DISTRIBUTION (1971)	
	1967	1971	milk trade	food retailing
Number of firms	125	48	2300	2120
Number of plants/establishments	158	92	9094	15462
Concentration ratio:				
1-firm		26	59	14
2-firms		34	80	22
12-firms	51	74	80	74
Symmetrical-index	0.90	0.87	0.99	0.99
Gini-index	0.44	0.57	0.80	0.94
Herfindahl-index	0.08	0.10	0.39	0.06

Table 10 gives the names of the largest cooperative firms, their plants (both for processing consumption milk and industrial products), their location and share of the total Dutch milk supplies in 1972. The firms marked with an asterix were involved in the merger discussions of 1971/72, concerning the formation of a national cooperative dairy union, but which broke down. The share of such a union would have been 48.3% of Dutch milk supplies.

As a comparison, the share of the four private dairy firms together is provided, and it follows that each of these private firms is much smaller than even the smallest cooperative combination mentioned in the list of the seven largest. On the other hand, the private sector shows a higher degree of concentration already for a long time. In 1950 the share of the four largest private firms of the total private sector was already 42.3%; in 1970 this share had risen to 60.9%.

Table 10: THE LARGEST DUTCH DAIRY FIRMS IN 1972

Name	Location	Number of plants	Milk supplies received (1000 tons)	Share %
1. Coberco	* Zutphen	43	2250	26.5
2. C.M.C.	* Wassenaar	23	864	10.2
3. Domo-Bedum	* Beilen	20	663	7.8
4. Campina	* Bergeyk	11	573	6.8
5. De Takomst	Wolvega	7	350	4.1
6. Noord-Holland	* Opmeer	5	320	3.8
7. Maasvallei	Roermond	9	302	3.6
4 Private Firms			212	2.5

C. Vertical Integration.

The cooperative sector (but not the private sector) of the dairy industry has developed a remarkable degree of vertical integration during the past twenty years. The large regional cooperatives now integrate the dairy industry from the stage of raw milk production (taking place on the farms, united in a cooperative association) to the output and marketing of milk, butter, condensed milk, milk powder and other products. The central production plants have been the main factor in this development.

Central production plants (C.p.p.) are plants being operated for the common account of member cooperative associations. This means that local dairy plants are practically always members of some regional C.p.p. The first C.p.p. dates back to 1913 and is called Cooperative Condens Factory "Friesland". Other C.p.p.'s such as Domo and Coberco only developed after the second World War. There have been no C.p.p.'s in the Western part of Holland. In 1937 the C.p.p.'s together processed about one-third of the total milk supplies to cooperative milk plants, which in itself was some 80% of total Dutch supplies.

The reasons for this emerging forward vertical integration have been:

1. Lower production costs, because of large-scale processing of milk into products like milk powder and condensated milk.
2. These products were often sold in many far-off countries in the world, so that an extensive sales and marketing apparatus was needed.
3. The products manufactured in the C.p.p.'s were "new products" in the sense that they were not produced on the farms and consequently not processed in the local dairy plants.

During the fifties and sixties the C.p.p.'s have clearly been the poles of the concentration movement, directing the horizontal regroupings of the cooperative associations and their dairy plants towards regional organizations. This process is by now mainly a thing of the past, though some further connections between local cooperatives, still independent, with the regional groups will be made in the future. The main question for the future - say up to 1980 - will be how fast and how far the regional groups will unite horizontally to one or more national dairy firms.

D. Sales Associations.

These handle the industrial products' sales of local cooperative organisations or central production plants. These sales organisations have a long history: the oldest one dates back to 1893 while most of them were formed during the twenties. During the sixties important mergers took place. Four of them united in 1969 to N(ationale) C(coöperatieve) Z(uivelunie), while two main sales organisations in the South combined to the Nederlandse Melkunie. The third main association is established in Frisia: Frico of Leeuwarden. Table 11 gives the share of the sales organisations in the total output of the cooperative sector for some important products.

Table 11: SHARE OF SALES ORGANISATIONS IN TOTAL COOPERATIVE SECTOR SUPPLIES (in %)

	1938	1950	1960	1965	1970
Butter	47.8	60.4	57.2	70.4	85.3
Cheese	33.8	50.5	56.6	59.6	70.0
Milk powder	38.5	55.1	54.7	73.4	88.5

It appears that the importance of the sales organisations has regularly increased. But the regional concentration of dairy supplies might also undermine their independent existence, as they fit in logically with the groupings which have been formed.

E. Developments in Distribution.

The distribution of milk and dairy products takes place via two main channels: the milk trade and the food retail distribution sector.
Apart from these channels there is some import and some sales take place directly to large-scale users (e.g. schools), but this is quantitatively unimportant.
A complete description of the distributive sector would not do for this study. We only want to draw attention to the following facts and tendencies:

- during the last five years (1968-1973) the share of the milk trade in milk sales has declined from 89% to 66%, while the share of food retailing increased from 7% to 28%.
- within the milk trade the mobile car has grown rapidly in importance from 0% in 1968 to 17% in 1972. Trade by means of the mobile car is dominated by two organisations, namely S.R.V. and Iveko, to which belong resp. 51% and 23% of the 6,500 milk retailers. The consolidated sales of S.R.V. were Fls. 1,250 million in 1972, which explains the high degree of concentration mentioned in table 9.
- the number of parallel products, besides dairy products, sold by the milk trade increased from 4% of total sales in 1958, to 50% in 1972. For mobile cars the share is probably some 80%.
  Likewise, the food retail stores have increasingly sold dairy products and for both types of organisation the throw-away-package has become more prominent.
- this growing overlap in sales has increased the intensity of competition. In particular, price competition has been stimulated. A survey of price competition has indicated that presently 49% of milk sold in plastic packages and 68% of milk sold in cartons is retailed for cut-prices, that is prices which are at least 6 cents lower than the normal street

selling prices. In cash and carry markets this share is even 95%.
The battle between the large retailing organisations is thus seen to influence the relationship between distribution and production.
To some extent concentration between the companies in the latter group is to be understood as a response to developments in retailing.

- the large retailing organisations (and in particular the supermarket chains) are increasingly selling dairy products under their own private label. For example, Albert Heyn sells milk products under its own label, bought from C.M.C. (the large Western cooperative milk association).
Largely because of this development distribution of milk and milk products is becoming more and more a nationwide affair. The distribution of industrial products is more complex, but the main tendencies are not basically different.

3. Future Tendencies.

There are four alternative ways in which the organisation of the dairy industry in coming years may develop:

A. The four main cooperatives mentioned in table 10 unite their operations to one large whole, controlling more than 50% of Dutch milk supplies. This dairy union would have a very strong market position and could integrate forward towards the milk trade organisations (esp. S.R.V.). Sales to the food retail organisations could well continue under the union's label or under private labels, but cut-price competition in the distribution of milk would then be prevented.

B. Though the partners of the dairy-union would have a strong market position, outsiders (the private dairy firms) could integrate with the milk trading organisations S.R.V. and Iveko, and could supply the food retailing firms. In this way, the dominant position of the dairy union would be undermined. The condition for this outcome would be that outsiders supply a varied assortiment of goods in sufficient quantities on a national scale.
Given the present-day size-relationships between the cooperative firms and private outsiders this would only be imaginable if a strong foreign dairy group would interest itself in the Dutch market. Such a development is not yet in sight. One of the exceptional international liaisons of the cooperative sector concerns the partnership of Zuid Nederlandse Melkunie with Unigate in London, having 40% of British milk supplies (3 million tons). Z.N.M. will deliver Fls. 100 million worth of dairy products which will be marketed by Unigate under its "St.-Ivel" brand in the U.K. (press-report Jan. 1973).
Nestlé of Switzerland is the only important foreign group in The Netherlands,

having 100% control of Hollandia milk products of Amsterdam.

C. S.R.V. and Iveko could unite to one firm and integrate backwards with regional dairy firms. This milk retailing organisation would then be in a strong position and could market under its own private label. S.R.V. has recently proposed such a step to several dairy firms, but these have declined to accept. S.R.V. now tries to effect regional liaisons.
The proposal was probably warded off, because the dairy cooperatives considered S.R.V. not a sufficiently well-organised and financially strong partner. Thus the proposal may some day be advanced anew.

D. A horizontal and diversification merger proposal might emanate from one or a few large food retail chains to S.R.V. and to Iveko. They would then be able to offer a franchise-formula to the mobile car companies in order to establish a growth market in the convenience sector and to create a dominant position vis-à-vis the dairy firms.

Alternatives B, C and D all have the same weakness, namely that they depend on the position of S.R.V. and/or Iveko. Both organisations are being considered by their members - the private milkman with his mobile car - as purchasing organisations and, moreover, their staff is not adapted to the running of a united central organisation; also there are no assets or sales to be taken over centrally.
For the time being, S.R.V. and Iveko are the weak links in any of the combinations considered, so that alternative A - the national combination of dairy cooperatives - is the step most likely to occur in the future. This, notwithstanding the fact that the merger discussions between the four members of the so-called Havelte-group have come to a stand-still for the time being.

Acknowledgements

This report is based on:
- The annual reports of F.N.Z. (Federation of Dutch Dairy Cooperatives).
- Private talks and articles contributed by Mr. Schelhaas, F.N.Z.'s economist.
- A doctoral paper prepared by Mr. ten Klooster, a student at the University of Amsterdam, who also made the calculations for the concentration-indices.

Part 6: Concentration in the sugar industry

Concentration in the Sugar Industry

1. Introduction

The Dutch sugar industry has only two firms, viz. Coöperatieve Suiker Unie (S.U.), a cooperative company, formed in 1966, and Centrale Suiker Maatschappij (C.S.M.), a company which resulted from merger between private companies in 1918.

The raw materials base of the sugar producing industry are the sugar beets. Processing of beets takes place in the period from the 15th of September to the middle of December, called the "campaign". A number of by-products, such as molasses, pulp and other sugar wastes are also produced and valorised.

A branch with only two firms is heavily concentrated. This survey will try to answer the questions pertaining to the causes and effects of this concentration, and the recent monopolisation drive by S.U.

2. Initial development of the Industry

Although sugar beets were produced in The Netherlands as early as 1800, the real history of the industry goes back to about 1850. From the middle of the century to the end, there was a fast expansion both in output and in the number of plants. Also from the very beginning, there were conflicts of interest between the beetgrowers and their customers, the sugarbeet processing industry.

The latter group, united in the Association of Sugar Manufacturers, laid down purchase conditions unilaterally. One of the bones of contention was the compensation of beet growers according to weights and not in relation to sugar contents of the beets.

So the growers united and founded their own cooperative sugar plants: the first one arose in Southern Holland at Sas van Gent (1899). In 1919, there were seven cooperative associations, covering mainly the Southern, and North-eastern beet growing areas in The Netherlands.

The largest factory, Dinteloord, processed 108,000 tons in 1919, the smallest one 36,720 tons.

As a reaction to this process, 17 private sugar factories merged in 1919 under the name of C.S.M., which closed down immediately 3 of the plants.

The 1920-1940 period can best be characterized as one of consolidation after the expansion of the previous period. The two main companies rationalized their structure by eliminating less efficient plants:

	number of plants	
	1919	1945
C.S.M.	17	6
Cooperative firms	7	6

3. Developments since 1945

Between 1947 and 1971 the cultivated area doubled; the new areas taken into production were mainly located in the new polders, being part of the former Zuiderzee (closed in 1931). Table 1 gives the figures:

Year	Area cultivated in 10,000 square meters	Sugar beets processed (in mln kilograms)	Sugar production (in mln. kilograms)
1947	50.800	1514	201
1955	66.800	3085	384
1965	90.900	3733	549
1970	104.500	4857	656
1971	102.300	5267	770
1972	113.000	4934	695
Index for 1972 on the basis 1947:			
100	220	325	345

The greatly increased productivity is mainly a result of the modern plants, established in the new polders and to the introduction of a new type of sugar beet.

The Dutch Government's postwar policy with respect to sugar consisted of

- an artificial isolation of the home market from the world market in order to protect sugar beet growing.
- the fixation of minimum purchase prices for sugar beets as well as a maximum price for sugar to consumers.
- the processing industry got compensated on the basis of an average cost price for all factories, plus a normal enterpreneurial profit. The least efficient firms thus had a hard time in making ends meet, while the most efficient companies could earn "cartel rents".

In the fifties, the sugar factories started a battle for sugar beet supplies by means of higher delivery terms, binding suppliers and raising output; while the factories would be able to account for higher raw

materials prices by means of better capacity utilisation.
C.S.M. introduced contracts including posterior payments on the preliminary convened purchase price, if the factory results at the end of the campaign warranted this. Also, certificates covering supply period of 5 years for sugar beets were issued. There ensued a competitive battle for supplies between the privately owned and the cooperative firms. However, a cartel organisation developed since 1953, when the Stocuso (Stichting tot Organisatie Samenwerking uit hoofde Contingenteringsovereenkomst) was founded. Members were C.S.M., Verenigde Cooperatieve Suikerfabrieken and Puttershoek, a large cooperative firm. In 1956 and 1962, other cooperative firms adhered or started negotiating adherence and since 1966, all sugar producing firms have been members of the raw materials purchasing cartel. Two main points were the subject of this agreement:
a) the purchase price and other contract conditions
b) the joint transport and reception of sugar beets.
Under the last point of agreement, sugar factories got delivery of sugar beets from the beet growers in their own region, notwithstanding possible long term contracts with other factories.
Payments to such growers were nevertheless effected by the factories having concluded the contracts.
In case of surpassing the fixed quotas, redistribution took place in kind. Complicated equalisation agreements, with difficultly to enforce penalties were thus avoided.
Apart from a reduction of transport costs, the main goal of the cartel agreement was a freezing of the competitive structure. Growth was henceforth only possible in accordance with alotted quotas based on the supplies of sugar beets. The Dutch Government acquiesced in the cartel, because it deemed a battle for sugar beet supplies with enhanced beet prices still less desirable.
It feared that sugar factories would see their processing margins reduced, with consequent upward pressure on the maximum sugar price, which it did not want because of its anti-inflationary policies, aiming at low food prices.
Difficulties arose when domestic output surpassed domestic sales. It was then convened among the industrialists that sugar producers would be liable for surplusses on the basis of their output. Moreover, foreign sales prices and sales conditions were agreed.
So the cartel still had to fix the prices of specialized products and byproducts. This was done in the Suiker conventie. Other forms of cooperation

related to research, education, joint advertising and sales of cattle foods.

In 1964, the cooperative sugar factories made a joint bid on the shares of C.S.M. in order to increase their quotas, now that internal expansion was no longer possible. The bid was motivated with the argument that duplication of investments could be eliminated if the industry was further concentrated. However, the bid failed, because of opposition from C.S.M. Then the cooperative sugar factories united themselves into the Cooperative Suiker Unie (S.U.); this move was motivated with the possibility to achieve savings in transport costs because of rationalisation in beet traffic and in deliveries of sugar and by-products to customers. After the merger of the cooperations, the S.U. and C.S.M.'s quotas were respectively 62,5243% and 37,4753%.

4. The Sugar Cartel and the European Economic Community

After complicated negotiations an agreement was reached concerning the policy on sugar beet culture and the sugar industry. This agreement just preceded the consummation of the cooperative merger in August 1966.

Before paying attention to the measures agreed on in July 1966 which were to be implemented on 1st July 1968 there follows some further information on the sugar industry in the European countries.

	Number of sugar factories				average sugar production (tons)
	1900-1901	1935-1936	1956-1957	1966-1967	1966-1967
Germany	295	212	71	62	28,380
Belgium	107	34	25	22	16,950
France	334	108	106	78	21,050
Holland	32	13	12	12	43,960
Italy	28	50	39	78	15,250
E.E.C. total	896	417	293	252	

With the exception of Italy there was a long-term reduction in the number of sugar factories. The highest average sugar production per factory was achieved in Holland: 43,960 tons. The next table furnishes some data on the degree of concentration of the national sugar production; it gives the shares of the three largest companies of each of the E.E.C. members for the years 1957 and 1967.

Shares of the 3 largest sugar producers in sugar output*)

	1957		1967	
	number of factories	%	number of factories	%
Germany	14	45	17	47
Belgium	8	60	8	61
France	11	18	15	25
Italy	45	-	45	54
Holland	10	84	12	100

*) For The Netherlands = 2 largest
Luxemburg had no sugar factories

Let us return to the joint strategy that was followed from July 1968 onwards. A logical consequence of the European agricultural policy was that the hitherto existant Dutch policy had to be discarded.

The measures introduced can be summarized as follows: As from July 1968 t here was to be established a directive price of white sugar, generally binding all E.E.C. countries.

In order to effectuate this price a system of import duties on sugar beets, molasses and sugar holding products had to be introduced. This would result in a protection of E.E.C. beet culture and sugar production.

Secondly, the Commission was authorized to intervene in the market by means of buying sugar when as a result of a temporary excessive supply, prices were to drop below a fixed level. The fixed prices at which the Commission was authorized to intervene is the so called intervention price. This market regulation was established in order to ensure that the consumer would have to pay the production costs of the sugar. The factories would be obliged to pay a minimum price for beets based on the intervention price, whereas the Commission would lay down rules concerning the conditions stipulating the contracting of sugar beets.

The minimum price of beets would only hold good if the combined sugar production did not exceed the expected consumption level by 5%. This price would be reduced at percentages of total production ranging from 105 to 135 of the amount necessary for consumption inside the E.E.C. countries. The losses on the sales of even greater surplusses would be completely chargeable to the producers and be apportioned among them.

Each of the E.E.C. countries would be alotted a certain share in the production of the amount of sugar corresponding to the E.E.C. consumption.

If a deficit should arise, E.E.C. consumption would have to be insured by subsidizing imports and by means of extra export levies.
Moreover, special measures were introduced to make it possible for the E.E.C. sugar industry to compete effectively on the world market.

The quotas were alotted per country and the national governments were to organize further distributions. In The Netherlands S.U. was thus alotted 2/3 and C.S.M. 1/3. As from July 1975 the Commission will establish quotas independently based on the amount of sugar produced in the previous years.

From July 1968 onward the Sugar Industry thus had no longer to cope with national market regulations, but with European ones which were to lead to a European sugar market with no import duties or quantitative regulations between the E.E.C. countries.
However, the envisaged European sugar market was slow in making its appearance. The reason was the market sharing agreement between the main European producers, involving the making of deliveries in E.E.C. importing countries only with the assent of the main producers in these countries.
Imports in The Netherlands amounted to 10-15% of national output.
They were dependent on the approval of the two producers, who violated article 85[1] of the Treaty. Also, both companies abused their dominant position on the market by forcing under threat of squeezing some leading importers to follow their price strategies. In January 1973 the companies were fined amounts of DFl. 2.9 million (S.U.) and DFl. 2.2 million (CSM).

5. Recent Events

Though the joint cooperations did not succeed in taking over C.S.M. in 1966, their merger in the same year did not stop their efforts.

It appears that S.U. and C.S.M. have negotiated over a merger more than 30 times since 1970. Negotiations which, according to the S.U. board of managing directors, were approaching success in March 1973.

This concord did not prevent them from making a bid for C.S.M. shares in 1973.

C.S.M. shareholders were invited to exchange their shares for S.U. bonds. These *f* 900 bonds (at an interest of *f* 48 per year) would be payable after 3 years, at the utmost, provided the Commission would agree to the merger.

The motivation of S.U. was: "It is of the greatest importance for all concerned that the Dutch sugar industry implements a rationalization in order to be able to continue to compete within the extended E.E.C.".

Further: "we experience an ever increasing pressure on the prices of sugar from the other E.E.C. members; which results in prices falling even below the fixed minimum!

Concentration is considered necessary in order to produce at the lowest possible costprice. C.S.M. replies that the consumer never benefits from a monopoly. Then the E.E.C. commission intervenes.
It writes in a letter to the board of C.S.M. that a possible concentration of the companies could give them such a dominant position that it would make all competition virtually impossible. Next the Continental Can Company Decision is mentioned which recognizes that article 86 is applicable to mergers eliminating competition. CSM assumes that a merger will be prohibited and announces (beginning of June) that negotiations with other companies in the food-sector are in progress.
The company also publishes a new stock valuation from which it appears that the intrinsic value according to the annual report is in reality 3 times as high. The president of C.S.M. board remarks:"We have been a static company for many years, but now we are organisationally ready for all kinds of new activities, alone or in cooperation with others".
This deterioration to the status of what in economic literature is known as a lazy oligopolist as a result of the combination of the Government sugar policy and cartel-agreements, had however progressed too far to prevent the company from becoming a play-ball of events.

Before C.S.M. published their plans in the beginning of July, Koninklijke Scholten Honig (K.S.H.) made a bid: partly in cash *f* 50,— and for the rest in convertible bonds *f* 900 à 6.5%. Later on the bid was raised.

The strategy of this large food producer was as follows: Starch sugars as produced by KSH and beet sugar as produced by CSM are complementary products. K.S.H. uses grain as raw material; this is getting more expensive on the world market. The desire to be less dependent on the prices of grain by taking over another sugar producer is therefore self evident. A similar tendency, said K.S.H., can be observed in England.

Another reason advanced for the merger by managing director Hoefnagels of K.S.H. is the similarity in the research activities of both companies. Sugar, as produced by C.S.M. has rather limited possibilities for industrial applications, in a combination with starch however, its possibilities are more varied. As KSH already posesses an extensive research department, a combination would be desirable.

If a merger will not be brought about (between K.S.H. and C.S.M.) the industrial sugar and molasses sales might be endangered. In that case K.S.H. considers taking over a foreign company as there are no other possibilities in Holland.

Backward vertical integration, the raw material supply, is an important factor in K.S.H.'s strategy.

In the beginning of July C.S.M. publishes its own plans, projecting a merger between Gist Brocades, Meneba and C.S.M.

Again, the complementary character of C.S.M. and a grain processor (Meneba) is pointed out, for sugar and starch are both essential materials in the food-sector.
G.B. and C.S.M. are contiguous in the fields of raw materials as well as ready products such as alcohol. The sugar industry is the supplier of raw material to G.B. not only in The Netherlands but also to Gist Brocades establishments abroad.

Both C.S.M. and G.B. are part of the alcohol syndicate, which monopolises the Dutch market for decades. The new company is seen to operate in the future "as an independent biochemical process-industry, whose aim is the nourishment and care for man, animal and plant". Its orientation will be international and it will be based on research and directed from The Netherlands.

Official complaints were made on behalf of the trade unions and K.S.H. about the infringement of the merger code of Sociaal Economische Raad (SER). The merger regulations of good behaviour have been broken and the SER commission agrees. The partners then abandon the idea of a merger; if they would hold to it they would have to start again and then proceed according to the SER merger regulations.

In the meantime KSH raised its bid and the S.U. decided to do the same, or rather the latter company announced a new bid without any conditions attached. In November 1973 this plan is withdrawn.

In January 1974 it became known that K.S.H. and S.U. each posessed one third of C.S.M.'s shares. All partners to the merger game have become lame ducks for the time being.

6. Concluding remarks

The sugar industry's present structure has been in existence for a considerable time, in fact as from 1920. Since then no new companies have

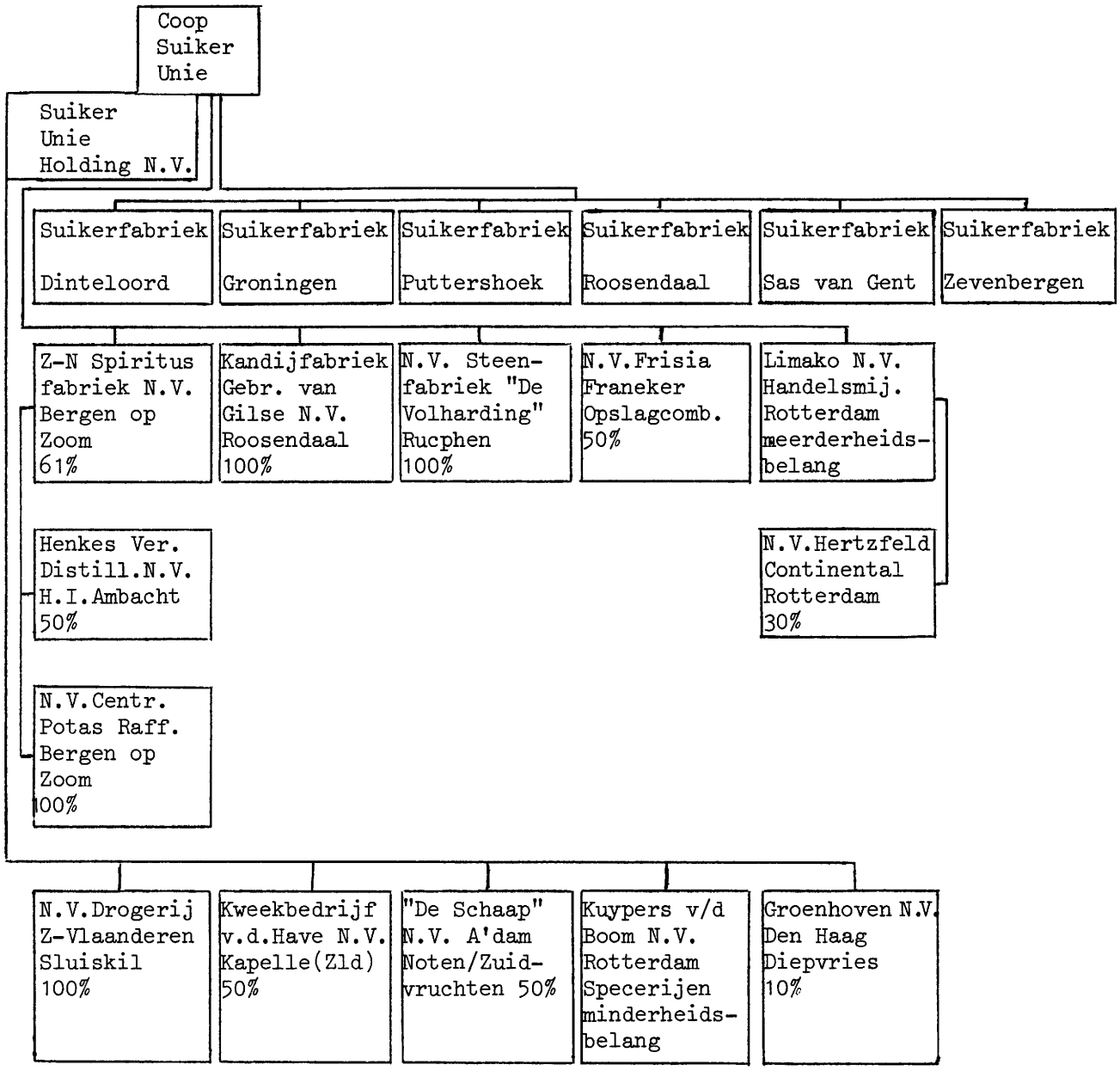
been formed. On the contrary, the ones in existence have closed down a number of factories.

The fact that no new companies or factories were formed must be explained from the existing cartel agreements and the effects of the Dutch government's policy. For the existing companies it was a period free of risks and full of profits, distributed by cooperative S.U. but accumulated by CSM.

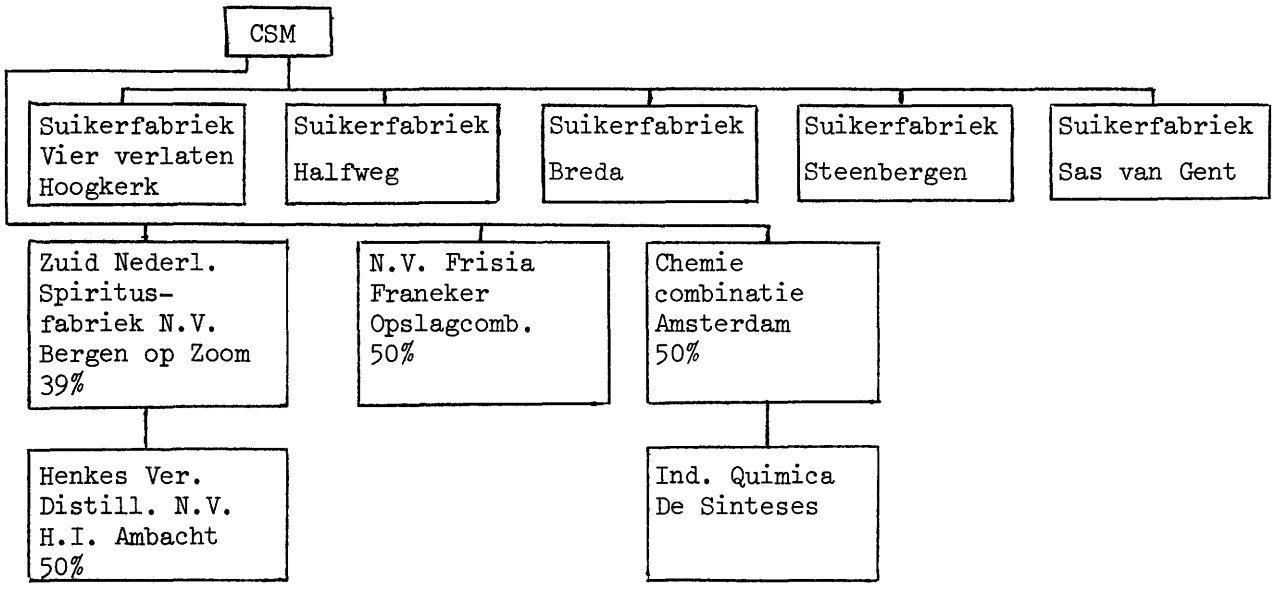
After the formation of the E.E.C. the industry tried to continue on the old lines in a wider market. The Commission's decision, against which the industry made in vain an appeal, broke the cartel agreement. Confronted with the necessity of being compelled to compete, the firms decided to merge as a way out, but could not agree on terms. Thereafter fattened, but lazy C.S.M. was an envied prey to at least four major food producers. The struggle for the possession of C.S.M. can thus be explained from the sugar industry's duopolistic structure and its monopolistic behaviour. The present position is a stalemate. The struggle is likely to be revived in the future.

Already, at the S.U. annual meeting of December 1973, the reopening of negotiations between S.U. and C.S.M. was announced. A total integration of the Dutch sugar industry continues to be S.U.'s foremost concern.

Suiker Unie's Holdings



CSM's Holdings



Part 7: Concentration in the flour and bakery industries

Concentration in the Flour and Bakery Industries

1. Introduction: The flour milling industry

The flour industry has been caught between national and international policy measures during the past fifteen years. The E.E.C. common agricultural policy meant a rise in raw materials prices, since the frontier levy system was introduced in 1962. Low world market prices for wheat were raised at the frontier to the much higher C.A.P. level - which was reached in June 1967 -, while domestic wheat prices adapted themselves naturally to the higher level. The Dutch Government has since the war controlled the miller's margin in order to minimalize the bread price increases. The industry had to negotiate bread price rises with the Ministry of Economic Affairs every time an increase was considered necessary and the pivotal point of these negotiations has been the miller's margin. During the last few years, moreover, the world market of wheat has been strained with consequent price increases. Also, wages and social charges have continuously risen, following the trend set by the general economy. Firms operating under such a system have, in principle, three ways in which to increase their overall profits.

(1) They can try to effect an expansion in total sales, based upon a growing population and/or an increased per capita consumption, or they can try to export more to foreign markets. However, 75-80% of sales of the flour milling-industry have traditionally been sold to the bread bakeries. Per capita consumption of bread is declining: during the sixties, the average rate of decrease was 2% per annum, which was more than the rise in population, so that flour sales to the bakeries on balance declined. The remaining 20-25% of output was sold to other flour processing sectors, such as biscuit making and cake fabrication, which were moderately expansive. So, at best the market for flour products can be considered to be stagnating, a feature not likely to be changed.

(2) Firms can try to cut their costs in order to improve their profit margin. But the structure of costs is such that not much can be done in this respect. The industry is primarily a materials intensive one, with raw materials, energy and packaging costs taking up about 85-90% of production values, inclusive of operating profits. The margin on which to rationalize is only 10%, evenly divided between wages, salaries and social charges on the one hand and other costs(mainly amortisations) and profits on the other hand. As the firms (at least the large ones) are mechanized very far already no solution could be found in this direction. E.g. Meneba, the largest Dutch flour producer, owns modern facilities, among which the largest European installation in Rotterdam.

Overcapacities have been systematically eliminated during the past decades, so that the rate of capacity utilisation of the Dutch firms has been higher than elsewhere in Europe, where serious overcapacity has been the rule.

(3) The only method for a firm to improve its position within the industry, has thus been merger (outside the flour industry, vertical integration and diversification have also been practised). Expansion in the flour milling industry, being impossible via the internal route, had to be via the external way. Firms, mainly the smaller ones, but also some of the larger ones have been taken over, either because the share of the market could be raised, or because take-over and subsequent closure of mills was a method to improve merging firms' rate of capacity utilisation. In a receding market, surplus capacities develop with the larger firms at time intervals: these gaps are being filled by taking over a smaller flour miller, retaining his market share, but closing his production facilities. It is probably no coincidence that various mergers and take-overs took place in particular years, viz. the end of the fifties, 1965 and 1970.

2. Structure of the Industry

Today there are about 10 large and small firms left in the industry. By the middle of the sixties there were two large firms, 5 medium sized ones and 11 small mills. In 1965, one of the medium sized companies, Noury and Van der Lande at Deventer was bought out and closed; in 1970, another one, Korenschoof, Utrecht, was taken over by Wessanen, the second largest company in the trade and likewise dismantled. The cooperative consumer's flour milling company at Rotterdam was taken over in 1973 by Koninklijke Scholten Honig N.V. of Zaandam when the consumer cooperative organisation failed in that year.
Production has, however, been continued. Some smaller millers were also taken over in recent years (e.g. Van der Venne at Weert by Wessanen in 1973).
The leading companies are Meneba of Rotterdam, Wessanen of Wormerveer and Scholten-Honig at Zaandam. The development of concentration is clear from table 1, where market shares are estimated.

Table 1: Market shares in the flour-milling industry (%)

Name of firm	1958	1971	1973	Remarks
Meneba, Rotterdam	28	41	43	
Sleutels, Leiden	14	-	-	Taken over in 1965 by Meneba
Wessanen, Wormerveer	26	32	36	
Noury & V.d. Lande, Deventer	9	-	-	Closed 1965
K.S.H., Zaandam	9	11	11	Taken over from CO-OP in 1973
Korenschoof, Utrecht	5	-	-	Taken over by Wessanen in 1970
Small firms, among which:	9	16	10	
V.d. Venne, Weert				Taken over by Wessanen 1973
Walsenmolen, Sas van Gent				
Koopmans, Leeuwarden				
Tarvo Meel, Haarlem				Taken over by Meneba 1972
De Blaauwe Molen, Rotterdam				Taken over by Meneba in 1970

The causes of this concentration in the flour-milling industry have partly been indicated already. The high level of capacity operation of the Dutch flour millers (85-90% of estimated economic capacities, in comparison with 60-70% in some other EEC countries) is mainly due to the buying out of smaller competitors and the closing of their installations. In the early stages of the modern flour-milling industry - the period up to 1930 - technical factors also played a role, as many smaller firms could not muster sufficient finance to mechanize their mills. The most important technological advance dates back to 1825 when the Austrian engineer Hartguss invented the "mill chair". This replaced the mill-stones, which had to be sharpened frequently, implying losses of labour time. Only after 1870 the technique was applied on a larger scale and many new mills were started. One of the oldest Dutch flour mills, De Sleutels at Leyden (taken over in 1965), had in 1884 a daily milling capacity of 24 tons. In 1922 another firm was taken over and the capacity of the two mills owned by De Sleutels was 200 tons per day. This was raised to 350 tons in 1930. Six years later one of the mills was closed and production was concentrated in Leyden. In 1964, the capacity had gone up to 600 tons per day. Present-day installations are capable of milling similar or higher amounts. Another indication is provided by silo-capacities, which in the early seventies ranged from 70.000 tons storage capacity for the largest firm to some 30.000 tons for the next two largest. Also, the production process has been refined, with

a complicated system of ladders, screws, pipes etc. being operated for the control of humidity in silos, purification, conditioning and mixing apparatus for the preparation of the raw materials, the milling in several stages in order to get increasingly finer products and the control, storage, packaging, transport and distribution of the final output. Thus the production process is - apart from being primarily materials-intensive - a capital-intensive one.
The typical cost-price calculation for flour production (based on information from one of the larger millers) in the early seventies would be:

Sales per ton	Fls 500,—
Purchase price wheat plus freight	Fls 430,—
Gross miller's charge	Fls 70,— per ton

With production costs to an amount of some Fls 40,— per ton and distribution, packaging and auxiliarity materials costs of Fls 10,—, this would leave a net-miller's margin of some Fls 20,— per ton. Production costs could be split into:

Fls 14,— for wages and social charges
Fls 17,50 for capital and maintenance costs
Fls 8,50 for variable costs, such as energy, and various costs
Fls 40,—

Of course, the production costs, sales values and miller's margins fluctuate heavily, depending on purchase prices for wheat and the degree of capacity operation. The first factor can be influenced by a shrewd purchase policy, but is mainly a datum for the company. The second factor can however be influenced by the buying of market shares in flour milling, the forward integration into bread baking so that sales can be steadied and by raising the value of by-products, which means diversification. A review of the structure of the main firms brings out the extent to which these tendencies have been operative.

3. The main Companies

The three largest flour millers are Meneba of Rotterdam, Wessanen of Wormerveer and KSH of Zaandam.
(1) Meneba is an integrated flour miller and bread baking company. Of the 1 million tons of wheat per annum, milled by the Dutch companies throughout the sixties, Meneba had a share of some 40%; its share of home market sales decreased slightly towards the end of the sixties, but exports rose fast

since 1964/65, though the level is not yet large (some Fls 30 million in recent years). The main figures for the group as a whole are summarized in table 2.

	1968	1969	1970	1971	1972
Employees*)	4744	4648	4533	4586	4619
In million guilders:					
Sales (excl. of TVA)	316	330	373	411	439
Gross income **)	14.8	16.1	18.6	19.2	24.5
Depreciation***)	11.3	11.6	13.5	14.5	17.2
Net profits	3.5	4.5	5.1	4.7	7.3
Own means	88.4	97.3	103.0	113.6	119.8

*) Exclusive of part-time employees
**) on a crude basis this equals cash-flow.
***) replacement values

Source: Annual reports

The structure of the Meneba-group, which is a holding with some 46 operating companies is as follows:

Division	Number of companies	Employees
Flour milling	8	560
Bread	19	4000*)
Animal products	8	970
Third division**)	3	235
Ecology	3	100
Recreation	3	90

*) inclusive of 1000 part-timers, such as shop personnel, packaging etc.
**) chocolates, biscuits and insurance & brokerage
Source: Fin. Dagblad, Febr. 14, 1974.

Total sales in 1974 are estimated at Fls 900 million, probably inclusive of taxes. A large addition to the animal products division was effected in 1973 when one of the prominent Dutch cattle food and other animal food producers, Koudys was taken over. Previously Meneba had already 43.5% of the share capital of Koudys. It will be seen that the company is expanding by both vertical integration and diversification. Sales of the flour-milling division take place to the bread bakeries and to industrial manufacturers. Sales to the last group have risen strongly, during the past few years; sales

to the bakery sector are split between third parties and owned bread bakeries. The latter group accounts for about 45% of total flour sales to bakeries. Vertical integration is pursued for two main motives: (1) stability of flour sales and an acceptable capacity utilization, (2) direct contacts with final bread consumers, which gives the flour milling section clues to the tendencies in demand. It has to be noted that the varieties of flour produced increase fast in response to diverging consumer wishes and regional take-over of bakeries by Meneba has therefore been a phenomenon of recent years.

(2) Wessanen; Though second to Meneba in the flour and bread baking sectors of the food industry, Wessanen is about as large in total sales, because the company has a broader spread over other food industry products. It produces in six main sectors namely (1) cocoa-vegetable oils, (2) veal feedstuffs, vitamines and specialities, (3) other animal feedstuff, (4) flour and bread baking, (5) other wheat products, such as cornflakes, and (6) chocolatery, rice and various other articles. No division of sales or employees over these various sectors is published. The total number of operating companies in 1972 was 44, of which 13 companies were established abroad (of which 8 in EEC countries). Foreign activities comprise about 40% of the total. Consolidated figures for Wessanen have been:

Wessanen: 1968 - 1973: Overall indicators

	1968	1969	1970	1971	1972	1973
Employees	2150	2080	2115	2027	2306	2989
in million guilders:						
sales	509	539	585	649	729	1087
cash flow	16.5	16.6	17.0	18.5	23.5	28.9
depreciation*)	8.7	8.4	8.9	9.6	12.1	13.8
Net profits	7.8	8.2	8.1	8.9	11.4	15.1
Own Means	105.3	111.3	117.6	127.4	139.3	155.7
Investments	12.6	7.9	18.5	9.8	20.4	85.6

*) based on replacement values

Source: Annual reports

Sales for 1975 are estimated over Fls 1000 million, double the 1968 figure. In 1973 two major acquisitions were effected: the meat producer Nibecom/NVC with sales of approximately Fls 300 million in 1972 in which a 70% interest was acquired and the milk producing firm of Lyempf, of Leeuwarden (sales nearly Fls 90 million in 1972). The policy of the firm was explained at the end of 1973 by the company's president as follows: "too large a share of sector markets makes a firm vulnerable, but diversification is pursued within the context of coherence with activities in other sectors. Diversification will be carried out both via internal and via external expansion. The company aims at a rate of return (after taxation) of 10-12% on the means invested". This latter desideratum has not yet been achieved. The table below indicates that growth of sales has fluctuated around 10% and net profit (measured on the basis of replacement value)between 7 and 8% (on equity) and 1.4 - 1.7% (on sales).

Wessanen 1964 - 1972

	1964	1965	1966	1967	1968	1969	1970	1971	1972
sales (million)	332	379	409	458	509	539	585	649	729
% growth	17.0	13.7	8.3	11.8	11.2	6.2	8.4	11.2	12.2
Net profits (million)	5.0	5.7	6.3	6.7	7.8	8.2	8.1	8.9	11.4
As a % of sales	1.51	1.50	1.54	1.46	1.53	1.52	1.38	1.37	1.56
As a % of equity	7.1	7.5	7.8	7.7	7.4	7.4	6.9	7.0	8.2

The cocoa, calf breeding and flour milling sectors have contributed to profits. Sales are expected to grow faster in future years, not only because of the take-overs, but also because capacities are being enlarged:

- a one-third expansion of capacity in the cocoa-sector
- a new calf breeding milk factory and a mixed-food factory, both at Meppel
- expansion of pig breeding
- a doubling of chocolate sprinkle spread capacity at Tilburg.

Wessanen has a strong financial position, reflected by the favourable liquidity position and the ratio between equity and total debts (50% of equity).

(3) The third major flour-miller is Koninklijke Scholten-Honig N.V. (K.S.H.) at Zaandam. This group arose out of a merger between the two firms of Scholten, Foxhol and Honig of Zaandam in the middle of 1965. It was a horizontal merger as both national and international interests largely overlapped. Part of the

merged firm - Chemische Fabriek Servo - was sold in 1970 to Chemische Werke Hüls A.G. of W. Germany in order to concentrate activities upon the food industry. This group is established in other E.E.C. countries (France, W. Germany, U.K., Belgium, Italy) as well as Switzerland, the U.S., Sweden and S. Africa. Of the 5048 employees (1972), 1813 were employed abroad. The two main sectors are:

a) The farina or starch division, with derivatives and natural and synthetic polymers, glucose and dextrose, animal feedstuffs and, since 1973, flour milling. This division has farina plants in the Netherlands, Belgium and W. Germany. 50% of the division's sales are exported.

b) The branded articles division comprising soups, ready meals, spices, fruit juices and flour products like macaroni and vermicelli.

The main group figures for the past few years have been:

	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73
Employees				5036	5048	7028
In million guilders:						
Sales:	424.8	457.7	483.7	485.0	508.2	655.0
in Holland	146.6	150.3	153.4	151.3	160.0	255.3
abroad + exports	278.2	307.4	330.3	333.7	348.2	399.6
Gross profits	37.5	41.4	35.2	38.2	43.2	49.7
Depreciation	18.9	20.3	22.3	23.5	24.5	28.0
Cash flow	23.1	25.7	25.3	27.8	31.0	35.1
Net Profits	10.0	11.3	6.1	8.2	11.3	13.8
Investments	23.4	32.9	36.3	26.4	22.3	43.1

Source: Annual reports

The flour and bakery interests were taken over from the Dutch Cooperative Consumer Organization in 1973 and consisted of 2 flour milling installations and the silo located in the port of Rotterdam, some 20 bakeries and a number of depots. Results in the flour sector have been positive during the past few years, though fluctuations occurred. This is in accordance with the results achieved in the flour milling sectors of Wessanen and Meneba both of which reported "satisfactory profits". Losses are however made by all these firms in the bread bakery sectors and for each group they run into millions of guilders. Sales of the flour milling sector are estimated at some Fls 50 million, staying at this level throughout the years apart from fluctuations due to raw materials' prices.

4. The Bread Baking Industry

Between 1960 and 1970 per capita bread consumption in the Netherlands declined regularly from 83.69 kgs to 64.56 (1974: 62.40 kgs). Due to increasing population the total consumption fell less steep: from 707 million kilograms to 619 million kgs. Parallel with this decline, the number of independent bakeries has decreased sharply. In 1953 there were 13.100 bakeries, in 1958 about 12000 and in 1972 5200. As some 350 bakeries are being closed each year, today's total will be below 4.800.

There are about 120 large industrial bakeries, using a particular type of furnace (the "gaasmatoven") which makes continuous bread production possible. The industrial bakery section has regularly increased its share of total sales (expressed in bales of 50 kgs) during the sixties and early seventies, though the growth has recently been stopped.

Table 4 — Shares in bread market sales (% of total sales)

	1958	1964	1969	1971	1974*
Small firms	78	65	60	54	55
Industrial firms	22	35	40	46	45

---

* estimate

Within the industrial bakery section, the three firms described previously are vertically integrated from flour production to bread baking and distribution. The companies in this integrated sector had the following shares in total bread sales:

Table 5

	1958	1964	1971	1974
Meneba, Rotterdam	4	6	19	21
Sleutels, Leiden	2	4	-	taken over by Meneba in 1965
CO-OP, Rotterdam	7	8.5	9	7
Wessanen, Wormerveer	-	1	2	3

In addition to these companies, a strong position on the bread market is also held by the united bakeries, SABA (which means Samenwerkende Bakkersbedrijven), a combination of about one hundred privately owned bread factories, selling their product according to agreed standards under the joint trade mark of Bums. The structural composition of the bread market and its main sellers is therefore as follows:

Table 6

Group	Trade mark	Total bread sales*	Market share (%)	No. of bread factories
Meneba	King Corn	320	21	14
SABA	Bums	270	18	81
K.S.H.	Juweel	105	7	15
Wessanen		45	3	4

* in million guilders

The total Dutch bread market is estimated at Fls 1300 to 1400 million per year and is receding slowly. The number of people employed in the bakeries has fluctuated around 13000 since the 1950's, which means, in view of the sharp decline in the number of bakeries, that the average size has greatly increased. There remain however large differences between the size classes of baking plants, both in the bread baking sector as a whole and within particular firms. A 1971 survey[1] gave the division according to types of plants:

Table 7

Type of firm	Scale in flour bales per week	Number of plants	Average size in bales per week	Share in bread output
one-man company	< 14	1494	11	7%
other small-scale	14-100	3824	28	45%
medium scale	100-300	100	120	5%
small factories	300-2000	108	650	28%
large factories	> 2000	16	2200	15%
		5542	43	100

It is customary in the trade to put the lower limit of medium sized plants at 100 bales per week. The upper limit is given by the presence of an automatic furnace and adjoining machinery. Firms like Meneba have mainly large factories. Its largest plant is located at Rijswijk, near the Hague, where 275.000-300.000 loaves of bread are produced per week. On the other hand the average SABA factory achieves an output of 28.000 loaves and the former CO-OP plants fell mainly in the small factory class. There are economies of scale in industrial bread production. Figure 1 below gives an indication based on research carried out in 1971 for the one-shift production system; figure 2 repeats the performance for the two-shift production system in industrial plants.

1) Rapport over de structuur van het bakkersbedrijf en de ontwikkeling van de broodvoorziening, Productschap granen, zaden en peulvruchten.

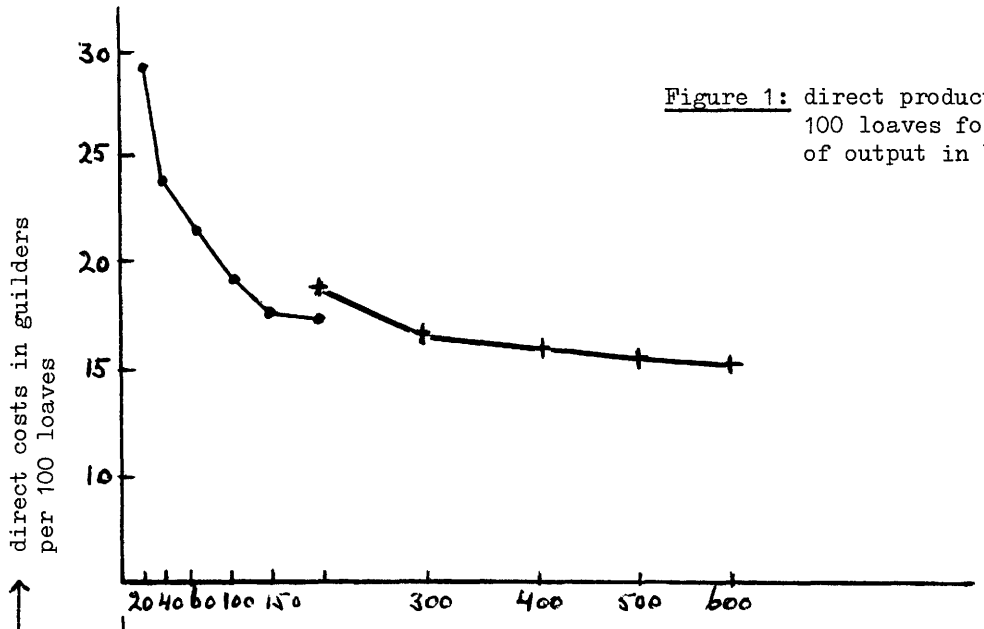


Figure 1: direct production costs per 100 loaves for varying scales of output in bread bakeries

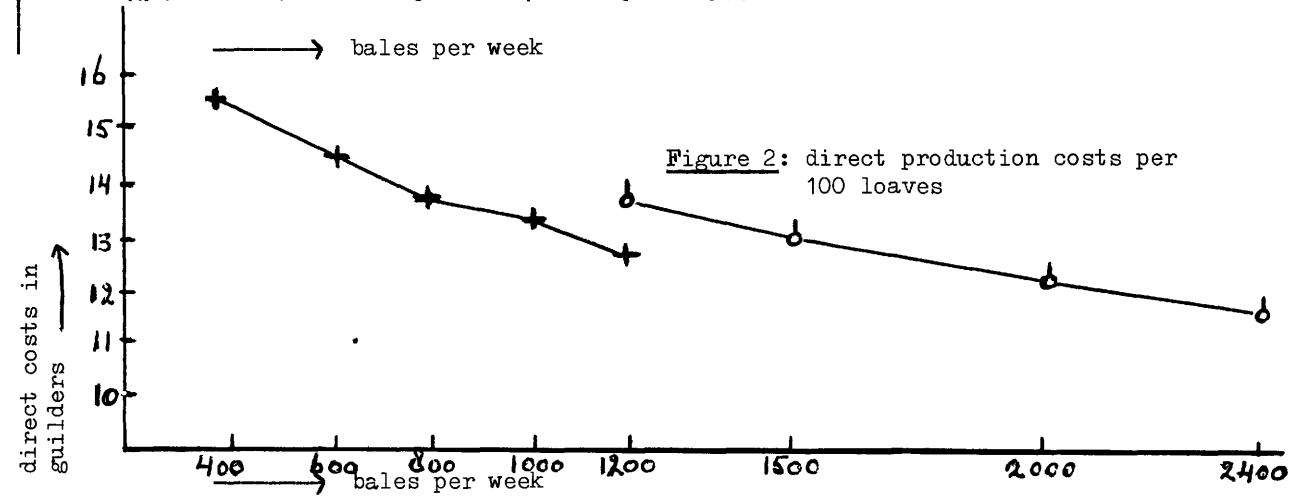


Figure 2: direct production costs per 100 loaves

Note: .-.-. indicates production with non-automatic machinery

+-+-+ indicates production with one automatic furnace plus auxiliary machinery

ô-ô-ô indicates production with two automatic furnaces plus auxiliary machinery

As will be seen from the figures, direct production costs decline fast in the non-automatic, one shift production system between outputs of 20 and 150 bales per week, namely from Fls 29.81 per 100 loaves to Fls 17.87 per 100 loaves. With automated, one-shift production systems the recession in costs is less pronounced, viz. from Fls 18.72 to Fls 15.27 as output increases from 200 bales per week to 600 bales per week. Adding a second automatic furnace in the one-shift production system makes no sense: the large firms use the double shift

system. Here we see that costs reach their lowest level at an output of 2400 bales per week (Fls 11.81 per 100 loaves) with the aid of two automatic furnaces. If one furnace is used in the double shift system costs reach their lowest level at 1200 bales per week (Fls 12.74 per 100 loaves).
The general decline in production costs with increasing scale puts a premium on capacity expansion, so that direct production costs would seem to favour large firms. But general overhead costs and distribution costs should also be taken into account. General overhead costs vary from Fls 3,— per one hundred loaves with small firms to Fls 6,— with the larger firms. In comparison with direct production costs and distribution costs, the overhead costs are not so important, but they seem to favour smaller companies. As to distribution costs, the smaller companies have a clear advantage, which varies according to the type of distribution. The larger the scale of output, the more costs for distribution have to be made and this hampers the larger firms. The survey made in 1971, cited earlier, puts the difference, with weekly sales of Fls. 3500,—, at 8%, mainly because of transport costs towards and higher wages in the retail chain stores. Distribution costs vary according to whether sales take place in shops, or in house to house selling, and whether sales occur in cities, villages or in the country. Table 8 gives the comparison for city-sales in shops and house to house selling for two types of firms, both having weekly sales of Fls 3500,—.

Table 8 Cost prices for bread in city sales (in cents)

	Shop selling		House to house selling	
	Small firms	Large firms	Small firms	Large firms
Raw materials	36.0	35.5	36.0	35.5
Production costs	24.5	13.5	24.5	13.5
Overhead	3.0	5.5	3.0	5.5
Distribution costs	19.5	29.5	25.0	32.5
Wastage	3.0	3.0	3.0	3.0
Taxes	3.5	3.5	3.5	3.5
Total	89.5	90.5	95.0	93.5

Thus, whereas large firms score on direct production costs, small firms score on distribution costs (shops annex to the bakery) and the ultimate result (the total cost price) a few years ago was about equal but supposedly advantageous to large-scale baking in the longer run, as wages, social charges and employee scarcity in production were thought to rise. It was on the basis of this theory

that the largest firms tried to increase their grip on the bread market via mergers and take-overs. By closing down the medium and small scale bakeries and rationalising output they hoped to cut their costs and increase capacity utilisation.
Up to 1971/72 this idea worked, though the restructuring process inflicted heavy losses on them. But in recent years, house to house selling has declined fastly in importance, as table 9 shows. In three to four years it is considered to be a thing of the past.

Distribution channels of bread sales (percentages)

	1969	1972	1974
House to house selling	64	46	36
Supermarkets	8	25	30
Other shops	28	29	24

In this form of distribution the industrial firms were strongly represented: e.g. in 1970 CO-OP sold 60% of its bread via the door to door salesman. Wage inflation and scarcity of labour have hit primarily the door to door sales; increasing motorisation of housewives, together with the constantly rising bread price has been another factor. Lastly, the standardized meagre quality of bread (in the eyes of consumers) from industrial bakeries has added to the problems. Thus, today, a large overcapacity (estimated at 30-50%) hangs over the industrial sector and sales to supermarket organizations, mostly at cut-prices below cost, had to be effected to keep the bread lines moving. Another escape would be bread exports, which are growing but are still too small to change the results. Meneba sells about Fls 30 million, or 8-10% of total bread sales abroad. Small bakeries (the "warm bakers" with sales of an average 5000 loaves per week) have the best position in this fiercely ranging competitive battle. Demand for the luxury types of quality bread is rising fast, distribution costs are low, the motor car enables people to shop amongst a large variety of bread types freshly served in an attractively decorated small shop and is not spoiled by chemicals, cooling, reheating, etc. At the end of 1973, the large firms retaliated by announcing a new type of bread, imitating the "warm bakeries", with lower fat contents and no longer cross-baked (i.e. a way of compact bread baking providing the loaves with cross-ridges): information was lavishly provided on the changes taking place. This imitation "as the sincerest form of flattery" was a sheer necessity, but whether it will achieve its end - to beat the competition from the tiny shops on the corner - without violating the principles of industrial baking remains to be seen. Opinion among the large firms is

divided: there are optimists and pessimists. They are united, however, in urging the Ministry of Economic Affairs to raise the compelled minimum consumer price, which would also bind the "warm bakers". In vain, these last ones argue that they have no need for higher prices: their profits are satisfactory they say, with expanding sales. But if the consumer is not going to pay the "restructuring and rationalisation costs" of the mergers in the industrial sector, who else could save employment and cover the losses, running into millions of the food giants now dominating the bakery industry?

Part 8: Concentration in the cocoa processing industry

Concentration in the Cocoa, Chocolate and Confectionary Industry

1. Introduction

The leading position of this Dutch industry in the world is based on (1) the processing capacity of cocoa beans and (2) its role as a world exporter of various products. As to the first, the Netherlands ranks fourth as an importer of cocoa beans for processing, after the U.S. (18%), W. Germany (9%), the Soviet Union (more than 8%). Nearly 8% of world consumption of cocoa beans were imported by The Netherlands in 1972. Imported beans are being sorted, broken, roasted and milled. The cocoa-mass acquired afterwards is being used in two main processes:

a) for the production of cocoa butter and cocoa powder.

By means of pressing, the cocoa butter is separated from the mass and the remaining substance is broken and milled into powder. This cocoa powder is used for mixing with various products, such as milk, ice and cremes or directly sold for consumption.

b) the cocoa-mass can also be used for making chocolate and confectionary.

It is then being mixed with sugar, cocoa butter, milk powder and sweets. After mixing, this mass is being rolled, refined with a view to consumer tastes and finally is given its ultimate form. The milling of cocoa beans is therefore undertaken for the purpose of producing three main articles, viz. cocoa-butter, cocoa-powder and chocolatery. Table 1 gives this division and the growth of output since 1950, as well as the number of firms.

Table 1 The development of the Dutch cocoa-beans processing industry: 1950 - 1971

	1950	1955	1960	1965	1970	1971
Number of firms	46	44	42	35	27	27
Output of cocoa-butter (1)(2)	12.6	19.2	34.2	42.7	48.5	55.8
Output of cocoa powder (1)(2)	18.2	22.4	34.6	37.1	46.9	47.9
Output of chocolate (1)(3) and related articles	47.8	29.9	49.5	62.7	53.3	46.4
Same, incl. output of candy bars					115.4	117.0

(1) In million kilograms

(2) Amounts not further processed in the cocoa processing industry into chocolate articles and coverings during the year. Total output of cocoa butter and powder is not known

(3) In the sense of the Dutch Commodities Law, i.e. not counting imitation chocolate and articles.

Source: Composed from various C.B.S. production statistics.

The second measure which indicates the importance of the Dutch cocoa and chocolate industry is the export position. For the three main products, the Netherlands is by far the largest world exporter. Sales abroad in 1972 were 195.000 tons of cocoa and chocolate products at a value of Fls 574 million.

2. Production and Sales

The development of output of the three main "end-products" of the cocoa-processing industry has been given in table 1. It has to be remarked that true output of cocoa-butter and -powder is larger than it appears from the table, because the vertically integrated firms which produce chocolate-articles also preponderantly make butter and powder for further processing. No data relating to these activities are made available as this structure of the industry is a traditional one. There is reason to treat the three main products as being in separate sector markets. Tendencies in each of these markets may be perceived from tables 2, 3 and 4.
Excluding again the internal deliveries between the vertically integrated firms, it follows from table 2 that cocoa butter output is practically wholly exported. With 37% of world exports in 1972, The Netherlands are the leading exporter, while the number two is Ghana (15%). The main customers are W. Germany (about one-quarter of total exports), Belgium, Switzerland and Great Britain. Though competition from a number of less developed countries increases since the sixties, there is a regular growth of exports.

Table 2 Development of cocoa butter sales 1950-1971

(in million kgs)

	1950	1955	1960	1965	1970	1971
Total sales	16.1	22.1	36.2	49.5	54.7	60.3
Internal sales	4.1	3.1	3.4	6.9	5.6	5.7
Net sales (1)	12.4	19.0	32.8	42.6	49.1	54.6
Foreign sales	12.4	19.0	32.8	42.6	49.1	54.6

(1) A very small amount is sold on the domestic market to firms other than cocoa-processing ones, such as ointment, schmink and lipstick producers.

Table 3 gives sales of cocoa-powder. Domestic sales are small and decreasing, but foreign sales increase slowly. The Dutch industry accounts for about half the world's exports, followed by W. Germany (12%). The main customer are the U.S. with 40-50% of total foreign sales. About one-third is traditionally sold in other EEC countries, of which W. Germany is by far the largest destination.

Table 3 Development of cocoa-powder sales, 1950-1971
(in million kgs)

	1950	1955	1960	1965	1970	1971
Total net sales (1)	17.2	21.9	31.6	39.6	46.4	44.9
Domestic sales	5.5	3.0	4.2	5.3	3.4	1.3
Foreign sales	11.7	18.9	27.4	34.3	43.0	43.6

(1) After elimination of internal deliveries.

Finally, table 4 gives the division of sales of chocolate, chocolate articles and candy bars. There is a clear emphasis on domestic sales, as far as the traditional articles are concerned. However, with the rise of sales of candy bars since the early sixties the picture has changed considerably.
Initially this product was not considered part of the chocolate industry and sales were not comprised in the statistics. In later years candy bars, which turned out to be a growth product, were included. They have appeared to be a substitute for the massive chocolate bars. 90% of output of all chocolate products (including candy bars) are being sold abroad since 1966. W. Germany is the main customer (60%), followed by France and Belgium. In reverse, EEC imports have gone up from 1% of domestic consumption in 1962, to more than 20% in 1972. The main importing countries are Belgium, W. Germany and Italy.

Table 4 Development of chocolate sales 1950-1972 (1)
(in million kgs)

	1950	1955	1960	1965	1970	1971	1972
Total sales (2)	46.2	29.4	49.1	63.3	53.5(3)	46.7(3)	-
Domestic sales	29.3	24.0	38.8	49.7	39.5(3)	36.5(3)	-
Foreign sales	16.9	5.4	10.3	13.6	13.0	10.2	-
Total sales (incl. of candy bars)					115.2	118.9	129.4
Domestic sales					52.2	50.7	51.9
Foreign sales					63.0	68.2	77.5

(1) The main articles are bars, sweets, tablets, coverings, granules and flakes

(2) After elimination of internal sales

(3) Estimates.

Table 5 gives a summary of the percentages of the values exported for various groups of the Dutch cocoa-processing industry. It shows the relative importance of cocoa-butter and the increasing weight of the export of candy bars.

Table 5 Values of exports of the Dutch cocoa-processing industry, 1950-1971 (percentages)

	1950	1955	1960	1965	1970	1971
cocoa-butter	40.7	54.9	39.8	52.5	48.8	42.4
cocoa-powder	20.1	29.4	33.3	13.8	15.9	17.2
chocolate and -articles	37.6	12.5	24.7	32.2(2)	33.4(2)	38.3(2)
other products (1)	1.6	3.2	2.2	1.5	1.9	2.1
	100	100	100	100	100	100

(1) including cocoa-waste products

(2) including candy bars

3. Structural Tendencies

The long term trend in the industry is clearly towards a smaller number of companies. In 1973, only 20 separate firms were left. Up to 1966 the number of firms and the number of plants was about equal, but no information has been supplied since then on this aspect. The reduction in the number of companies is mainly due to mergers. Most of these mergers were effected by large national companies, taking over the profitable smaller ones, or by diversified multinational companies taking over the leading firms in the cocoa-processing industry. Table 6 reviews the leading companies, their market shares and their presence in sub-markets, on the basis of the tonnages of cocoa-beans processed.

Table 6 The main cocoa-processing companies, in 1973

Name	Location	Market share	Sub-market	Belonging to:
1. De Zaan	Koog-Zaandijk	45	butter & powder	Grace Cy.
2. Wessanen	Wormerveer	15	butter, powder & chocolate articles	independent
3. Bensdorp	Bussum	10	butter, powder & choc.	Unilever
4. Gerkens	Wormer	5-7	butter & powder	Capital Foods
5. Korff	Amsterdam	5	butter, powder & choc.	independent
6. Kwatta	Breda	5	butter, powder & choc.	partly Cont. Foods
7. Verkade	Zaandam	5	butter, powder & choc.	independent

It will be seen that of the 7 main firms, accounting for over 90 percent of market sales, only two firms (Korff and Verkade) are independent from the multinationals. Wessanen is an internationally spread and diversified food

producer, occupying a prominent position also in flour milling, cattle foods, meat processing. The list of mergers since 1962 can best be seen in conjunction with the position of the companies in sub-markets, in order to determine the strategical moves of the companies. Already before 1962 the U.S. conglomerate firm of W.R. Grace Cy. has taken over De Zaan, the dominant producer in the sub-market of butter & powder. Grace, which owns a chocolate firm in the U.S. thus effected a vertical backward integration. Another backward integration was carried out by Capital Foods in 1969 when it took over the firm of Gerkins. Thus the two large Dutch producers, devoting themselves exclusively to butter and powder production have gone over into American hands.

The other five suppliers operate on the three main sub-markets, though they have different market positions. The Bensdorp takeover of Blooker in 1962 strengthened appreciably its position on the U.S. market. In the massive chocolate bar market in The Netherlands, Bensdorp likewise has made progress since: its market share with the Bros-bar is 10%. In 1973 this profitable company was taken over by Unilever. Wessanen, on the other hand, is withdrawing from the chocolate consumer market and now applies itself to intermediate products. Also, it is diversifying into other food sectors. Another firm, Kwatta, has made losses since 1966, and is diversifying too, but will, according to insiders in the trade, soon loose its independence. Already, Continental Foods from Belgium has acquired a 33% participation, while, in reverse, Kwatta owns 7½% of C.F.'s stock.

All the large firms in the trade, with the exception of Korff and Verkade were involved in the ongoing merger activity of the past ten years. Some characteristics of this merger wave were:

- the large firms have bought smaller and profitable companies in their own sub-markets. The goal has been to acquire reputed marks such as Van Houten, Blooker and Ringers. A clear example is Van Houten, which has been liquidated as an operating firm, but whose trade name and patents occupy a prominent position in the W. German Monheim-group.
- another tendency is the diversification towards other sub-markets, again with the goal to acquire prominent marks.
- moreover large firms are being bought by the multinational (and mainly U.S.) firms. From the list of mergers this tendency comes forward most forcibly.

4. Distribution and Marketing

The receding sub-market of chocolate and -articles can be divided into three product markets. First, there is the chocolate granules and flakes market, with only three suppliers, viz. Venz (belonging to Van Nelle of Rotterdam), Delicia (Wessanen) and De Ruyter. There is however a growing supply of imitation

chocolate litter, of which there are two sellers, Croklaan (Unilever) and Boon.

Second, the more expense chocolate articles' product market is stagnating. The main suppliers of quality products are Verkade, Droste, Kwatta and Union, which have strong competition from two Belgian firms: Côte d'Or and Meurisse and the Italian company of Ferrero (with sweets sold under the mark name of Mon Chéri).

Third, the most important product market is composed of chocolate bars and tablets. Nearly all firms sell in this market. This product-market is interesting because of the rise of the candy bar and because of the position of the large scale trading sector.

The candy bar is not considered as belonging to the chocolate sector in the technical or traditional sense. However, economically, the candy bar is clearly a substitute product for other chocolate bars (and maybe for other sweets as well). Since 1961, the U.S. firm of Mars has produced these bars in its own factory in The Netherlands; by means of a.o. large-scale advertising campaigns the firm has succeeded in capturing the domestic as well as the E.E.C. market (most of the sales given in table 4 are effected in other E.E.C. countries). The present-day market share of Mars (measured in terms of output) is estimated between 60 to 70%. The Mars' market share may well be higher. Before 1962, Nuts produced the candy bars under licence from Mars, U.K., a subsidiary of Mars U.S.A. After the licence elapsed, because of Mars' own production in the Netherlands some coordination remained. No fierce price competition was waged between these firms, as was indeed the case when Van Houten achieved a 10% market share with a bar of its own during the second half of the sixties.

The Dutch firm of Nuts is second with a share of some 20%. In the formal sense this constitutes a duopoly, but, in fact, there is more reason to think in terms of a monopolistic market structure, because there are indications for the existence of mutual "listening posts".

Mars has succeeded in capturing the candy bar market because of its consistent banking on the fact that the chocolate bar is an impulsively bought product. Intensive, general distribution (there are about 60,000 points of sale!) coupled with a thoroughly made up presentation and penetrating advertising have done the trick. The reactions of established chocolate bar producers have been "too little and too late".

The second feature of the chocolate bars and tablets market is the dominating position of the retail chains. Jamin, A. Heyn and De Gruyter (a subsidiary of the Dutch conglomerate SHV) are vertically integrated, giving them a strong

position in marketing as well as purchasing. The retail combinations with central purchasing, such as Spar and Végé have concluded long term contracts with chocolate factories (in the Spar and Végé case with Korff) for the purchase of fixed and massive, guaranteed quantities of these products at low prices. From table 7, a comparison of prices quoted by producers and retailers of chocolate characters of substantially the same quality, it follows that the firms selling under their own or acquired marks have prices which are 35 to 110% above those of the integrated producers or retail chains. Moreover, such differences existed already since 1965, the year when such a survey was made for the first time. Since then, the branded characters' prices have risen 40%, the other ones on average some 12%.

It is also note worthy that the chocolate characters for diabetes, containing no sugar, cost about twice as much as the normal ones. No explanation could be given by industry spokesmen justifying such a difference in price, so that there is a presumption that the inelastic demand is being exploited.

Also, the largest price increases between 1971 and 1973 were achieved by the firms with famous mark names. They clearly derive market power and profits from such marks, which underlines the attractiveness of the acquisition of well-classed companies.

Moreover, the countervailing power of the purchase combinations and retail chains, where mass merchandising counts, seems to be rather strong and to give worthwhile results.

Acknowledgements:

This report is based on the annual reports of the Dutch cocoa and cocoa products association and discussions with the association's economist Drs. Th. van der Waarden; on a study of the branch made by the National Investment Bank; on CBS production statistics and on a contributory survey by Drs. F. van Winden.

List of Mergers and Take-overs 1962-1973

1962:	Bensdorp takes control of Blooker (Bussum)
1962:	Wessanen acquires Nicolet (Krommenie)
1963:	Wessanen acquires Delicia (Tilburg)
1963:	Grace Cy. (American conglomerate) acquires Van Houten (soon afterwards the U.S. firm Peter Paul acquired 49% of the shares)
1964:	De Zaan acquires Raak (snacks and drinks; Utrecht)
1966:	General Biscuits (Belgium) acquires Victoria
1969:	Cavenham Foods (England) acquires Ringers
1969:	Capital Foods Industries (America) takes a majority share in Gerkens Cocoa Industry
1969:	Kwatta acquires Van Dungen and Rademaker (subsidiary company of Van Dungen). Also, Driessen gets under the control of Kwatta.
1970:	Kwatta acquires Wijnand Beke (marchepane and fruitcakes; The Hague)
1970:	Droste acquires Ringers from Cavenham Foods
1971:	Droste acquires Rademaker's Kon. Cocoa and Chocolate Factories
1971:	Van Houten gets into the hands of the W. German Monheim group. Especially involved are the trade mark and patents.
1972:	Kwatta and Continental Foods (Belgium) cooperate by means of share participation. The centre of gravity lies with Continental Foods.
1972:	Wessanen acquires Bakery Winkel and De Graaf's Bakeries
1973:	Wessanen takes control of the Lijempf (ice and milk products; Leeuwarden), De Nibecom (slaughteries; Rotterdam), de Nieuwe Vlees Compagnie (meattrade; Rotterdam) and the flour-mill "Weert"
1973:	Unilever acquires Bensdorp (Bussum)
1973:	Van Nelle acquires Venz (especially bread litter; Vaassen).

Table 7 Average price of chocolate characters per 100 grams in Dutch cents

Producer:	1971	1972	1973
Baronie	134	140	149
Droste	161	157	164
Van Houten	142	146	139
Union	150	149	167
Verkade	150	150	164
Producer and retail chain:			
Albert Heijn	98	98	98
De Gruyter	84	84	79
Jamin	94	94	100
Co-op	88	88	113
Retail chain or purchasing combination			
Edah	100	73	-
Hema	88	87	97
Simon de Wit	86	86	94
Spar	84	89	95
Vroom en Dreesman	89	95	103