# A STUDY OF THE EVOLUTION OF CONCENTRATION IN THE BEVERAGES INDUSTRY FOR THE UNITED KINGDOM 

PART ONE:
Industry structure and concentration, 1969-1974

In 1970 the Commission initiated a research programme on the evolution of concentration and competition in several sectors and markets of manufacturing industries in the different Member States (textile, paper, pharmaceutical and photographic products, cycles and motorcycles, agricultural machinery, office machinery, textile machinery, civil engineering equipment, hoisting and handling equipment, electronic and audio equipment, radio and television receivers, domestic electric $\AA$ appliances, food and drink manufacturing industries).

The aims, criteria and principal results of this research are set out in the document "Methodology of concentration analysis applied to the study of industries and markets", (ref. 8756 - English version), September 1976.

The following report is the first volume (Part 1: Industry structure and concentration, 1969-1974) of a study of concentration in the beverages industry for the United Kingdom. It deals with trends in the beverages industry, structural changes and various indices for assessing concentration for the industry as a whole. It considers also statistical significance between, first of all, profitability and size of enterprise and secondly, the proportionate growth of large and small firms.

Similar volumes concerning the beverages industry are also published for other Member States (France, Netherlands, Germany, Italy, Belgium and Denmark).

# A STUDY OF THE EVOLUTION OF CONCENTRATION IN THE BEVERAGES INDUSTRY FOR THE UNITED KINGDOM 

PART ONE:
Industry structure and concentration, 1969-1974

A Report prepared for the Directorate-General for Competition of the
COMMISSION OF THE EUROPEAN COMMUNITIES by DEVELOPMENT ANALYSTS LTD.

## PREFACE

The present volume is part of a series of sectoral studies on the evolution of concentration in the member states of the European Community.

These reports were compiled by the different national Institutes and experts, engaged by the Commission to effect the study programme in question.

Regarding the specific and general interest of these reports and the responsibility taken by the Commission with regard to the European Parliament, they are published wholly in the original version.

The Commission refrains from commenting, only stating that the responsibility for the data and opinions appearing in the reports, rests solely with the Institute or the expert who is the author.

Other reports on the sectoral programme will be published by the Commission as soon as they are received.

The Commission will also publish a series of documents and tables of syntheses, allowing for international comparisons on the evolution of concentration in the different member states of the Community.

This report, commissioned by the Directorate-General for Competition of the Commission of the European Communities has been carried out by Development Analysts Ltd., under the direction of R.W. Evely, B.Sc. (Econ.), in consultation with Professor P.E. Hart, B.Sc. (Econ.), of the University of Reading, and Professor S.J. Prais, M.Com., Ph.D., Sc.D (Cantab) of the City University, London and the National Institute of Economic and Social Research.

This report was prepared by A.J. MacNeary, B.A., of Development Analysts Ltd.

## CONTENTS

1 : INTRODUCTION ..... 7
2: $\quad$ TRENDS IN THE UK BEVERAGES INDUSTRY ..... 9
2.3 Production and Consumption ..... 9
2.7 The Revenue Yield on Alcoholic Drinks ..... 11
2.8 Consumers' Expenditure ..... 11
2.11 Advertising and Market Research ..... 13
2.13 Acquisitions and Mergers ..... 14
Tables 2.1 to 2.15 ..... 15
3: STRUCTURE OF THE UK BEVERAGES INDUSTRY ..... 27
3.3 Beverages Industry ..... 28
3.4 Brewing and Malting ..... 28
3.6 Spirit Distilling and Compounding ..... 29
3.7 British Wines, Cider and Perry ..... 30
3.8 Relative Positions ..... 31
3.9 Enterprise Size Analysis ..... 31
3.13 Establishment Size Analysis ..... 33
3.18 Size of Manufacturing (local) Units ..... 36
3.20 Sales and Concentration ..... 37
3.29 Sales by Foreign-Owned Enterprises ..... 42
Tables 3.1 to 3.24 ..... 43
4: COMPANY PROFILES ..... 67
4.2 Allied Breweries Ltd. ..... 68
4.6 Scottish and Newcastle Breweries Ltd. ..... 72
4.8 Bass Charrington Ltd. ..... 74
4.11 Arthur Guinness Son and Co. Ltd. ..... 77
4.15 Courage Ltd. ..... 80
4.17 The Distillers Co. Ltd. ..... 82
4.21 Grand Metropolitan Ltd. ..... 86
4.33 Whitbread \& Co. Ltd. ..... 92
5: MEASURES OF CONCENTRATION ..... 97
5.1 Composition of the Sample ..... 97
5.3 Change in Composition of the Sample ..... 97
5.4 The Variables and their Values used as Input for the Sample ..... 98
5.6 Qualifications Concerning the Input Data ..... 100
5.8 The Direction and Change in Concentration ..... 101
5.19 Conclusion ..... 106
Tables 5.1 to 5.12 ..... 107
6: THE THREE MATRICES OF OLIGOPOLISTIC INTERDEPENDENCE ..... 119
6.2 Matrix No. 1: Oligopolistic Inequality ..... 119
6.7 Matrix No. 2: Comparative Performance ..... 121
6.9 Ratio R1 ..... 122
6.10 Ratio R2 ..... 123
6.11 Ranking of Scores on R1 and R2 ..... 124
6.12 Absolute Size and Rankings on R1 and R2 ..... 124
6.14 Profitability and Size of Enterprise ..... 125
6.17 Matrix No. 3: Comparative Growth Rates ..... 126
6.19 "Growth Rate" on Turnover ..... 127
6.20 "Growth Rate" on Net Profit ..... 128
6.21 Rank of Combined Scores on "Growth Rates" of Turnover and Net Profit ..... 128
6.22 Comparison of Enterprise Rankings on Matrix 2 and Matrix 3 ..... 129
6.23 Divergent "growth rates" ..... 129
6.24 The Proportionate Growth of Large and Small Firms ..... 129
6.31 Index of Competition ..... 132
6.33 Conclusion ..... 133
Tables 6.1 to 6.19 ..... 135
7: CONCLUSION ..... 149
APPENDICES
Appendix 1: The Measures of Concentration - symbols and formulae ..... 155
Appendix 2: A Note on The Identity of $n_{m}^{*}$ and Value of $L_{s}$ (including graphs of $C R$ and $L$ in 1969 and 1974) ..... 159
Appendix 3: The Computer Generated Measures of Concentration ..... 171
Appendix 4: The Three Matrices of Oligopolistic Interdependence ..... 233
Appendix 5: Matrices of Oligopolistic Inequality, 1969-74 ..... 239
8: ADDENDUM ..... 247
8.2 The Measures of Performance ..... 247
8.3 Results ..... 248
Addendum Tables 1 and 2. ..... 250

## 1: INTRODUCTION

1.1: This report forms the first part of a two-stage study of concentration in the UK beverages industry, the definition of which has been taken to encompass four sub-industries; namely, brewing, wines, spirits and soft drinks. The separate concerns of the two parts of the study may be stated as:

PART 1: a study of concentration for the beverages industry, as defined above, and changes in that measure between 1969 and 1974.

PART 2: a study of the distribution of the products of the beverages industry from the manufacturer to the consumer.

Arrangement of this Report
1.2: In section 2 of this report broad trends within the beverages industry are examined, in particular levels of production and consumption, consumers' expenditure, the volume of advertising and the number and value of companies acquired in merger and takeover transactions. Section 3 considers the structure of the industry as derived from the publications of the UK Census of Production as well as measures of concentration provided by this same source. Profiles of the leading firms in the industry are presented in section 4.

## 1.3: Discussion of the measures of concentration contained

 within section 5 of this report is based upon the research methodology laid down by the Commission of the European Communities. This methodology enables various measures of concentration to be derived (the formulae and symbols for which are set out in Appendix 1) in relation to data for selected variables extracted from the annual reports and accounts of individual companies.It has not been possible to include data on every firm engaged in the beverages industry and therefore the analysis has been conducted in a sampling framework comprised of the largest firms. From the company data the Commission's computer has generated numerous measures of concentration for the beverages industry between 1969 and 1974 and these are tabulated in Appendix $3 . \quad$ However, section 5 confines itself to determining whether or not any statistical significance can be attached to changes in the traditional concentration ratio (CR) and the average measure of the Linda index ( $L_{s}^{*}$ ) over the six years to 1974.
1.4: Section 6 gives consideration to that aspect of the Community methodology that relates to the three matrices of oligopolistic interdependence. More particularly, however, this section extends the quantitative analysis to consider the statistical significance of any association between, first of all, profitability and size of enterprise and secondly, the proportionate growth of large and small firms.
1.5: The report is summarised and concluded at Section 7 and is followed by the Appendices. Subsequent to the main report being handed to representatives of the EEC for printing and publication, some additional analysis was undertaken and this is presented here as an Addendum forming Section 8.

## 2: TRENDS IN THE UK BEVERAGES INDUSTRY

2.1: It is the purpose of this section to present details of trends within the beverages industry, and in particular how these relate to production and consumption, imports and exports, consumers' expenditure, advertising and market research and merger activity.
2.2: $\quad$ Alcoholic beverages in the UK fulfil an important revenue raising role and because of the system of licensing and control there are copious statistics available on the sectors of the trade which are the concern of this report. Thus, the data on consumption and imports and exports of alcoholic drink that appear here have been extracted from the Reports of the Commissioners of Her Majesty's Customs and Excise. * Consumption of the respective alcohols has been measured in relation to quantities upon which duty has been levied. However, whilst stocks of duty-paid alcohols remain unknown there is obviously a time-lag between when duty has been paid and eventual consumption. Indeed, this difference may vary from time to time and as the Customs and Excise ${ }^{+}$point out the magnitude of such fluctuations is greatest when a change in the rate of duty is expected, particularly for spirits and imported wines.

## Production and Consumption

2.3: With the foregoing in mind, therefore, the UK consumption of beer is shown in Table 2.1 to have increased from 32.21 m . bulk barrels in 1968/69 to 39.11 m . bulk barrels in 1974/75, or by 21.4 per cent. During this same period exports, presented in Table 2.2, have consistently represented only about 2 per cent. of domestic production,

[^0]whilst imports have been equivalent to around 5 per cent. of total domestic consumption; that is to say, home production of beer has provided 95 per cent. of consumption.
2.4: Although a domestic English wine industry does exist, its output is small in terms of the volume of wine imported into the United Kingdom. The volume of these imports retained for consumption has increased from 34.11 m . gallons in $1968 / 69$ to 62.61 m . gallons in 1974/75, or by just under 84 per cent. However, as Table 2.3 shows, the consumption in the latter year was some 5.28 m . gallons, or 7.8 per cent. down on the previous year of 1973/74. Table 2.4 compares changes in the sources of U.K. wine imports between 1970/71 and 1974/75 and shows the most significant increase as being attributable to Italian wines, having increased in volume from 4.02 m . gallons to 13.85 m . gallons, or by just under three and a half times. Whilst Spain accounted for 31.2 per cent. of wine imports in 1970/71, this share declined to 23.8 per cent. in 1974/75, when the greater proportion originated from France ( 24.5 per cent.) and with Italy accounting for 22.1 per cent. Consumption of British Wines (mainly cider and perry) have increased from 11.44 m . gallons in $1968 / 69$ to 16.76 m . gallons in 1974/75, or by $46 \frac{1}{2}$ per cent. (Table 2.5).

## 2.5: $\quad$ Statistics on the United Kingdom's consumption of

 spirits are presented in Table 2.6 which show this volume to have grown by just under 85 per cent. since 1968/69 to stand at 32.42 m . proof gallons in 1974/75. The proportion of domestic spirits' consumption accounted for by imports rose in successive years from 1968/69 to peak at 26.6 per cent. in 1972/73 and declined thereafter to represent 23.0 per cent. of total consumption in 1974/75. For purposes of comparison, the volume of imported spirits consumed almost doubled between 1968/69 and 1974/75 whilst consumption of domestically produced spirits rose by 81.3 per cent.2.6: $\quad$ Production of soft drinks as between concentrated and unconcentrated drinks is shown in Table 2.7 where the former volume increased by 65 per cent. between 1969 and 1975 and the latter grew by 58 per cent. over the same period. Total production over the six years increased by just over 59 per cent. Consumption in terms of pints per head of population is considered by the Ministry of Agriculture, Fisheries and Food to have risen from 90.8 pints in 1970 to an estimated 117.5 pints for 1974 - a growth of 29 per cent.

## The Revenue Yield on Alcoholic Drinks

2.7: $\quad$ The revenue raised from alcoholic beverages subject to customs and excise duty is shown in Table 2.8 to have declined as a proportion of total receipts from all revenue sources between 1969/70 and 1974/75. Although on the basis of the 1974/75 estimate the trend of earlier years is expected to be reversed it will still leave alcoholic drinks' share of total receipts just over 3 per cent. less than in the peak year of 1970/71 when they accounted for 19.8 per cent. of all revenue duties. Each of the four alcoholic liquors identified in Table 2.8 increased its revenue yield in successive years. Between 1969/70 and 1972/73 the highest yields were derived from beer but thereafter this status was attributable to spirits. However, by 1975/76 it is expected that the two alcohols will be yielding virtually the same revenue, at around $£ 640 \mathrm{~m}$.

## Consumers' Expenditure

2.8: Table 2.9 summarises for the 1969 to 1975 period consumers' expenditure in total and on food (excluding catering expenditure) and alcoholic drink in terms of both current and constant (1969) prices. It is evident that since 1969 alcoholic drink prices have risen less than food prices. Furthermore, in the face of price rises the volume of expenditure
on food declined between 1974 and 1975 whilst for alcoholic drink the upward trend in the volume of expenditure was maintained. That consumers' expenditure on food as a proportion of total consumers' expenditure declined between 1969 and 1975, whilst the proportion spent on alcoholic drink increased is demonstrated in Table 2.10. In terms of constant prices food accounted for 20.5 per cent. of all expenditure in 1969, falling to 18.3 per cent. in 1975. Alcoholic drink, on the other hand, increased its share of total consumers' expenditure from 6.9 per cent. to 8.8 per cent. over the same period. Notwithstanding price rises, therefore, demand for alcoholic drinks has remained buoyant throughout the period although a slowing down in expenditure is evident between 1974 and 1975.
2.9: $\quad$ National Income and Expenditure data is recorded for each of the sectors which comprise alcoholic drinks; namely, beer, spirits, wines, cider and perry, and is presented here in Table 2.11. Alcoholic drink prices as a whole rose by just under 67 per cent. during the seven years ended 1975. The price of wines, cider and perry rose over the same period by nearly 68 per cent., spirits' prices by 44 per cent., and beer prices by almost 82 per cent. The greatest price rises experienced by each of the sub-groups of the drinks trade occurred between 1974 and 1975 and have all been of a similar order of magnitude; that is, nearly 25 per cent. These price rises have, however, had a differential impact upon the volume of expenditure achieved by each sub-group; for spirits, volume declined by nearly 2 per cent. between 1974 and 1975 and for wines, cider and perry the fall was almost 6 per cent. Over the same period the volume of expenditure on beers, on the other hand, increased by just under 4 per cent. Price rises between these two years have been related to both increases in manufacturers costs as well as increases in customs and excise duties passed on directly to the consumer. From the data it would appear that since 1974 wine and spirit drinkers may possibly have 'traded-down' to buying beer.
2.10: Average weekly expenditure per head on alcoholic drinks between 1969 and 1975 is set out in terms of constant 1969 prices in Table 2.12. Over the period up to 1974 expenditure per head on all alcoholic drinks increased from $£ 0.72$ to $£ 1.01$, or by just over 42 per cent. One year later this factor had not changed so that there appears to have been no real growth overall between 1974 and 1975. However, the data does substantiate a shift away from the consumption of the higher priced wines and spirits towards relatively cheaper beer; that is, spending per head on beers increased between 1974 and 1975 whilst on wines and spirits it decreased. In the second part of Table 2.12 is set out the data on average weekly expenditure per head on soft drinks, which more than doubled in relation to current prices between 1969 and 1975.

## Advertising and Market Research

2.11: Payments made for advertising and market research are analysed for each census industry in the Census of Production for 1968 with comparable data for 1963 and are summarised here for the appropriate sub-sectors of the beverages industry in Table 2.13. Although no separate analysis is provided as between Soft Drinks, on the one hand and British Wines, Cider and Perry on the other, all sub-sectors increased their advertising and market research expenditures between 1963 and 1968. The greatest increase was attributable to the Spirit Distilling and Compounding sub-sector where such costs increased by 72 per cent. over the five years. By comparison, this cost increase for the Brewing and Malting industry was only around 5 per cent.
2.12: A more up-to-date source on the level of advertising undertaken by the sub-sectors of the beverages industry is that provided by the I.P.C. Marketing Manual of the UK (the data being based upon the MEAL Monthly Digest). Aggregate advertising expenditures are presented
for 1969 to 1975 in Table 2.14 and relate to advertisers spending in excess of $£ 100,000$ per annum. On this basis, advertising in total increased from $£ 17.3 \mathrm{~m}$. in 1969 to $£ 38.8 \mathrm{~m}$. by 1975 . Since 1973 the greater volume of advertising expenditure has been incurred by the wines and spirits industries although they, together with beer, accounted for smaller proportions of total spending by 1975; that is, around 40 per cent, and 38 per cent. respectively. The greatest relative increase in these expenditures is attributable to soft drinks, its share of the total increasing from just under 14 per cent. in 1971 to just over 17 per cent. by 1975 .

Acquisitions and Mergers
2.13: Details of merger and take-over activity - showing the number of acquiring and acquired companies together with the market valuations of such transactions - are presented in Table 2.15. The peak year for this activity is 1972 and involved acquisitions valued at $£ 111.2 \mathrm{~m}$., equivalent to 9.3 per cent. of all acquisitions in UK manufacturing industry. Although the number of mergers and acquisitions slowed down after 1972 there occurred a revival in 1975 in terms of value with three transactions involving $£ 2.4 \mathrm{~m}$. More precise details of the companies engaged in such acquisitive policies during the study period are considered in later sections of this report.

TABLE 2.1
Beer - Domestic Consumption

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Beer <br> Brewed <br> in UK <br> (1) | mear bulk barrels <br> of which <br> Duty-Paid <br> (2) | less: Drawback <br> (i.e. Exports and <br> Ships Stores) <br> (3) | Imports for <br> Consumption <br> $(4)$ | Domestic <br> Consumption <br> $(5)$ |
| $1968-69$ | 30.78 | 31.48 | .696 | 1.43 |  |
| $69-70$ | 32.00 | 32.78 | .787 | 1.46 | 32.21 |
| $70-71$ | 33.30 | 33.97 | .675 | 1.62 | 33.45 |
| $71-72$ | 34.12 | 34.89 | .772 | 1.94 | 34.92 |
| $72-73$ | 34.74 | 35.47 | .738 | 1.89 | 36.06 |
| $73-74$ | 37.06 | 37.87 | .815 | 2.18 | 36.62 |
| $74-75$ | 37.45 | 38.32 | .872 | 1.66 | 39.11 |

SOURCE: H.M. Customs and Excise. 66th Report. 1975. HMSO.

TABLE 2.2
Beer - Exports, Imports and Consumption per head

|  | Exports and Ships Stores <br> as \% of Home Produced <br> Duty-paid beer | Imports for Consumption <br> as \% of Total Domestic <br> Consumption | Consumption per head * <br> (pints) |  |
| ---: | :---: | :---: | :---: | :---: |
| $1968-69$ | 2.2 | 4.4 |  |  |
| $69-70$ | 2.4 | 4.4 | 70 | 178.6 |
| $70-71$ | 1.9 | 4.6 | 71 | 185.2 |
| $71-72$ | 2.2 | 5.4 | 72 | 189.3 |
| $72-73$ | 2.1 | 5.2 | 73 | 197.0 |
| $73-74$ | 2.2 | 5.6 | 74 | 201.1 |
| $74-75$ | 2.3 | 4.2 | 75 | 206.5 (prov.) |

SOURCE: Derived from Table 2.1 above.

* Trade and Industry HMSO, based upon Ministry of Agriculture,

Fisheries \& Food, Food Supplies Moving into Consumption.

TABLE 2.3
Wine - Imports retained for Consumption and Consumption per head

|  | Imports for <br> Consumption <br> (m.gallons) | Consumption per head * <br> (pints) |  |
| ---: | :---: | :---: | :---: |
| $1968-69$ | 34.11 | 1969 | $\ldots$ |
| $69-70$ | 32.54 | 1970 | 6.6 |
| $70-71$ | 37.42 | 1971 | 7.4 |
| $71-72$ | 43.82 | 1972 | 8.9 |
| $72-73$ | 52.18 | 1973 | 11.2 |
| $73-74$ | 67.89 | 1974 | 11.8 |
| $74-75$ | 62.61 | 1975 | 11.3 prov. |

SOURCE: H.M. Customs and Excise. 66th Report, 1975. HMSO.

* Trade and Industry, based upon Ministry of Agriculture, Fisheries and Food. Food Supplies Moving into Consumption.


## TABLE 2.4

Sources of U.K. Wine imports - 1970/71 and 1974/75

|  |  | m. gallons |
| :--- | ---: | ---: |
|  | $1970 / 71$ | $1974 / 75$ |
| France | 9.53 | 15.36 |
| Germany | 1.83 | 3.67 |
| Portugal | 2.41 | 2.77 |
| Spain | 1.67 | 14.89 |
| Italy | 4.02 | 13.85 |
| Australia | .49 | .23 |
| South Africa | 1.80 | 2.15 |
| Cyprus | 3.94 | 5.67 |
| Others | 1.73 | 4.02 |
|  | 37.42 | 62.61 |

SOURCE: derived from H.M. Customs \& Excise 66th Report. 1975. HMSO.

TABLE 2.5
British Wine - Consumption
(mead, cider and perry)

|  | m. gallons |
| ---: | :---: |
| Year | Consumption |
| $1968-69$ | 11.44 |
| $69-70$ | 10.10 |
| $70-71$ | 11.00 |
| $71-72$ | 11.62 |
| $72-73$ | 12.64 |
| $73-74$ | 15.63 |
| $74-75$ | 16.76 |

SOURCE: H.M. Customs and Excise, 66th Report, 1975. HMSO.

TABLE 2.6

Spirits - (i) Consumption
m. proof galls.

| Year | Consumption of <br> Domestically <br> Produced Spirits | Imports Retained <br> for Consumption | Total <br> Consumption |
| ---: | :---: | :---: | :---: |
| $1968-69$ | 13.76 | 3.78 | 17.54 |
| $69-70$ | 14.05 | 3.95 | 18.00 |
| $70-71$ | 15.36 | 4.71 | 20.07 |
| $71-72$ | 16.67 | 5.38 | 22.05 |
| $72-73$ | 18.00 | 6.54 | 24.54 |
| $73-74$ | 24.02 | 8.00 | 32.02 |
| $74-75$ | 24.95 | 7.47 | 32.42 |

SOURCE: H.M. Customs and Excise. 66th Report. 1975. HMSO.
(ii) Consumption per head

|  | proof pints |
| ---: | :--- |
| 1969 | $\ldots$ |
| 70 | 2.8 |
| 71 | 3.0 |
| 72 | 3.4 |
| 73 | 4.3 |
| 74 | 4.7 |
| 75 | 4.8 provisional |

SOURCE: Trade and Industry. HMSO, based upon Ministry of Agriculture, Fisheries and Food. Food Supplies Moving into Consumption.

## TABLE 2.7

Soft Drinks - Production and Consumption per head, 1969-75

| m . gallons |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Year | Concentrated | Unconcentrated | Total | Consumption * <br> per head <br> (pints) |
| 1969 | 66 | 262 | 328 |  |
| 70 | 72 | 268 | 340 | $\ldots$ |
| 71 | 70 | 272 | 342 | 90.8 |
| 72 | 71 | 400 | 362 | 89.8 |
| 73 | 107 | 375 | 507 | 92.5 |
| 74 | 95 | 414 | 470 | 106.2 |
| 75 | 109 |  | 523 | 117.5 (prov.) |

SOURCE: Annual Abstract of Statistics, HMSO,
*Trade and Industry. HMSO, based upon Ministry of Agriculture, Fisheries and Food. Food Supplies Moving into Consumption.

TABLE 2.8
Net Receipts of Customs and Excise Duties


SOURCE: Customs and Excise. 66th Report 1975. HMSO.

* estimate

TABLE 2.9
Consumers' Expenditure in Total and on Food and Alcoholic Drink, 1969-75


SOURCE: National Income and Expenditure, 1965-75. HMSO.

* Household Expenditure.

TABLE 2.10
Consumers' Expenditure on Food and Alcoholic drink as proportions
of Total Consumers' Expenditure, 1969-75

| (i) based upon Current Prices |  |  |
| :---: | :---: | :---: |
|  | Food | Alcoholic <br> Drink |
|  | 20.5 | 6.9 |
| 70 | 20.1 | 7.3 |
| 71 | 19.8 | 7.4 |
| 72 | 18.7 | 7.3 |
| 73 | 18.7 | 7.6 |
| 74 | 19.0 | 7.6 |
| 75 | 19.1 | 7.7 |

(ii) based upon Constant 1969 Prices

|  | Food | Alcoholic <br> Drink |
| ---: | :---: | :---: |
| 1969 | 20.5 | 6.9 |
| 70 | 20.3 | 7.3 |
| 71 | 19.8 | 7.6 |
| 72 | 18.6 | 7.7 |
| 73 | 17.9 | 8.4 |
| 74 | 18.2 | 8.7 |
| 75 | 18.3 | 8.8 |

SOURCE: derived from Table 2.9.

TABLE 2.11
Consumers' Expenditure on Alcoholic Drink, 1969-75

|  | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

£m at Current Prices

| Beers | 1,201 | 1,355 | 1,526 | 1,662 | 1,807 | 2,071 | 2,679 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Spirits | 520 | 611 | 670 | 777 | 1,004 | 1,140 | 1,392 |
| Wines, cider \& perry | 308 | 333 | 397 | 471 | 604 | 715 | 831 |
|  | 2,029 | 2,299 | 2,593 | 2,910 | 3,415 | 3,926 | 4,902 |


| £m at Constant 1969 Prices |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  |  |  |  |  |  |  |  |
|  | 1,201 | 1,241 | 1,301 | 1,342 | 1,420 | 1,422 | 1,475 |
| Beers | 520 | 608 | 647 | 736 | 912 | 987 | 966 |
| Spirits | 308 | 321 | 373 | 424 | 507 | 526 | 496 |
| Wines, cider \& perry | 2,029 | 2,170 | 2,321 | 2,502 | 2,839 | 2,935 | 2,937 |
|  |  |  |  |  |  |  |  |


|  |  |  | Value Index at Current Prices, $1969=100$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Beers | 100 | 112.8 | 127.1 | 138.4 | 150.4 | 172.5 | 223.1 |
| Spirits | 100 | 117.5 | 128.8 | 149.4 | 193.1 | 219.2 | 267.7 |
| Wines, cider \& perry | 100 | 108.1 | 128.9 | 152.9 | 196.1 | 232.1 | 269.8 |
|  | 100 | 113.3 | 127.8 | 143.4 | 168.3 | 193.5 | 241.6 |
|  |  |  | Volume Index at Constant Prices, $1969=100$ |  |  |  |  |
| Beers | 100 | 103.3 | 108.3 | 111.7 | 118.2 | 118.4 | 122.8 |
| Spirits | 100 | 116.9 | 124.4 | 141.5 | 175.4 | 189.8 | 185.8 |
| Wines, cider \& perry | 100 | 104.2 | 121.1 | 137.7 | 164.6 | 170.8 | 161.0 |
|  | 100 | 106.9 | 114.4 | 123.3 | 139.9 | 144.6 | 144.8 |
|  |  |  |  | Implied Price Index, $1969=100$ |  |  |  |
| Beers | 100 | 109.2 | 117.4 | 123.9 | 127.2 | 145.7 | 181.7 |
| Spirits | 100 | 100.5 | 103.5 | 105.6 | 110.1 | 115.5 | 144.1 |
| Wines, cider \& perry | 100 | 103.7 | 106.4 | 111.0 | 119.1 | 135.9 | 167.6 |
|  | 100 | 105.9 | 111.7 | 116.3 | 120.3 | 133.8 | 166.8 |

SOURCE: National Income and Expenditure 1965-75. HMSO.

TABLE 2.12
(i) Average Weekly Expenditure per Head on Alcoholic Drinks, 1969-75

|  | £ per head at Constant |  |  |  |  |  |  | 1969 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Prices |  |  |  |  |  |  |  |
|  | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 |  |
|  |  |  |  |  |  |  |  |  |
|  | 0.42 | 0.43 | 0.44 | 0.46 | 0.48 | 0.48 | 0.51 |  |
| Beer | 0.18 | 0.22 | 0.23 | 0.26 | 0.32 | 0.34 | 0.33 |  |
| Spirits | 0.11 | 0.12 | 0.14 | 0.15 | 0.18 | 0.19 | 0.17 |  |
| Wines, cider and perry | 0.71 | 0.77 | 0.81 | 0.87 | 0.98 | 1.01 | 1.01 |  |
| Total alcoholic Drinks | $\underline{0.7 n}$ |  |  |  |  |  |  |  |

(ii) Average Weekly Expenditure per Head on Soft Drinks, 1969-75

|  | £ per head at Current Prices |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 |  |
| Soft Drinks | 0.05 | 0.05 | 0.06 | 0.05 | 0.06 | 0.08 | 0.11 |  |

SOURCE: (i) derived from Business Monitor, PQ 231. 4th Quarter 1976.
(ii) derived from Family Expenditure Survey, HMSO.

TABLE 2.13
Payments by sub-sectors of the Beverages Industry for Advertising and Market Research, 1963 and 1968


SOURCE: Census of Production, 1968. Industry Tables.
TABLE 2.14
Advertising Expenditure on Beverages 1969-75
Principal Advertisers spending $£ 100,000+$ p.a.

|  |  | £000s |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Year | Beer | Wines \& Spirits | Soft Drinks |  <br> Perry | Total |
| 1969 | 6,244 | $7,701 \varnothing$ | $2,226 *$ | $1,107 *$ | 17,278 |
| 1970 | 7,726 | 7,682 | 2,246 | 1,172 | 18,826 |
| 1971 | 9,246 | 8,676 | 3,110 | 1,240 | 22,272 |
| 1972 | 10,556 | 10,158 | 3,980 | 1,232 | 25,926 |
| 1973 | 11,643 | 11,958 | 4,946 | 1,497 | 30,044 |
| 1974 | 11,897 | 14,126 | 3,852 | 1,441 | 31,316 |
| 1975 | 14,804 | 15,372 | 6,712 | 1,930 | 38,818 |

SOURCE: I.P.C. Marketing Manual of the United Kingdom.

* those spending $£ 75,000$ + $\varnothing$ those spending $£ 150,000+$

TABLE 2.15
U.K. Drink Industries - Expenditure on Acquisitions and Mergers
of Independent Companies

| Year | No. <br> Acquiring | No. <br> Acquired | Value <br> £m. | Value as \% <br> of all UK <br> Manu- <br> facturing <br> Acquisitions |
| :--- | :---: | :---: | :---: | :---: |
| 1969 | $\ldots$ | $\ldots$ | $\ldots$ |  |
| 1970 | 5 | 7 | 44.3 | 7.6 |
| 1971 | 6 | 6 | 21.0 | 7.6 |
| 1972 | 8 | 8 | 111.2 | 9.3 |
| 1973 | 5 | 3 | 1.1 | 0.2 |
| 1974 | 3 | 3 | 1.3 | 0.8 |
| 1975 | 3 |  | 2.4 | 1.8 |

SOURCE: Business Monitor M7. Acquisitions and Mergers of Companies.

## 3: STRUCTURE OF THE U.K. BEVERAGES INDUSTRY

3.1: $\quad$ The definition of the U.K. beverages industry adopted for this study was given at an earlier paragraph in the Introduction. Official U.K. statistics which most nearly conform to this working definition are available in the reports of the Census of Production, which represent the most convenient basis upon which to examine aspects of performance and industry structure. No separately comparable data is available for the wine trade as this is essentially based upon imports although some of the firms included in the following census analyses are no doubt engaged in the importation, bottling and distribution of wines.
3.2: $\quad$ The Census of Production identifies four census industries which together comprise the U.K. drinks or beverages industry; namely
(a) Brewing and Malting
(b) Soft Drinks
(c) Spirit Distilling and Compounding and (d) British Wines, Cider and Perry

The most recent data available from this source relates to selected years between 1963 and 1972. Provisional data is available for 1973 but experience has shown that these figures tend to be revised to a significant degree and for this reason the provisional results have been omitted. The danger of aggregating the data on individual census industries was outlined in some detail in an earlier study of the food processing industry* and the principle established in relation to that industry applies equally here in the case of the beverages industry; namely that summation of individual census industry data based on an analysis of enterprises can lead to a double-counting of enterprises classified to the whole trade. Furthermore, when the structure of the industry is examined in closer detail, say employment size distributions, then other discrepancies become evident. For these reasons, therefore, it is only possible to present aggregated Census of Production data for the four subsectors of the beverages industry at the level at which they appear in Table 3.1.

[^1]3.3: It is clear from Table 3.1 that the number of establishments classified to the four sub-sectors of the beverages industry fell by almost one-half between 1963 and 1972, or from 1,509 to 806 establishments. The size of the work force moved along a similar downward trend and in terms of the numbers employed, fell by just over 10,000 in the ten year period. Gross and net output rose during the period, both more than doubling at current prices to stand at $£ 2,330.4$ millions and $£ 747.3$ millions, respectively, in 1972. Gross output was, however, less in 1972 than it had been in 1971. The rise in net output and the fall in the level of industry employment combined to raise the value of net output per head from $£ 2,465$ per head in 1963 to $£ 5,732$ per head in 1972. Whilst net capital expenditure rose from $£ 41.903$ millions in 1963 to $£ 92.914$ millions in 1971 (at current prices), there was only a marginal increase to £93.405 millions by 1972 .

Brewing and Malting

## 3.4: $\quad$ The Census definition of the Brewing and Malting industry

 has remained unchanged between 1963 and 1972 and is stated as follows:> 'The brewing of beer and malting barley. Bottling and canning by brewers is included, but establishments engaged wholly or mainly in bottling or canning drinks purchased from other firms (or in bottling or canning on commission) are excluded.' *

Between 1963 and 1972 both the number of enterprises and establishments classified to the industry declined, the latter by just under 60 per cent. This and data on other selected indicators are presented in Table 3.2, from which it can also be seen that employment in the industry fell, from around 87,000 in 1963 to just over 70,000 by 1972. Although having experienced growth in each of the selected years between 1963 and 1971, the value of gross output (at current prices)

[^2]fell in 1972, as did the current price valuation of net capital expenditure, so that the decline in real terms has been much greater. The value of net output per head, again expressed in current prices, grew 2.3 times during the period to stand at $£ 5,833$ per head in 1972 .
3.5: The Census definition of the Soft Drinks industry changed between the 1963 and 1968 Censuses of Production. Nevertheless, the data for these two years remain reasonably comparable and the definition applying in 1968 and for subsequent years is as follows:

> 'Manufacturing aerated waters, fruit squashes and cordials, fruit and vegetable juices, ginger beer and other soft drinks. Soft drinks in powder or crystallized form are included. Bottling and canning by manufacturers of soft drinks are included, but establishments engaged wholly or mainly in bottling or canning drinks purchased from other firms (or in bottling or canning on commission) are excluded.'

The variables presented in Table 3.3 which relate to the U.K. Soft Drinks industry show that both the number of enterprises and establishments classified to the industry fell by 37 per cent. and 45 per cent. respectively between 1963 and 1972. Whilst the level of employment fluctuated it was only marginally less in 1972 than it has been in 1963. The values of gross output, net output and net output per head each increased at approximately the same rate, that is by around two-and-half times measured by current prices. Net capital expenditure grew 2.62 times between 1963 and 1972, before allowing for price increases, the greater proportion of this increase ( 54 per cent.) being experienced during the 1971-72 period.

Spirit Distilling and Compounding

## 3.6: $\quad$ The Census industry definition for Spirit Distilling and

 Compounding has remained unchanged between 1963 and 1972 and relates to:[^3]'establishments engaged wholly or mainly in distilling, rectifying, compounding and blending spirits, but distilling industrial alcohol and methylating spirits is excluded. Bottling by distillers, blenders etc. is included, but establishments engaged wholly or mainly in bottling drinks purchased from other firms (or in bottling on commission) are excluded. '*

The most notable developments within this sub-sector of the industry have been contrary to the trend for the beverages industry as a whole, namely, the increase in the number of enterprises, implying 11 new entrants between 1963 and 1972, and the rise in employment, by 6,000 during the same period (Table 3.4). Whilst the number of establishments fell, it was the smallest decline ( 17 per cent.) for any of the 4 sub-sectors of the industry. The current price valuation for net capital expenditure increased by a factor of 2.65 over the 10 years although it doubled during one two year period between 1968 and 1970. Since the peak in 1970, net capital expenditure suffered a marginal decline so that the fall in real terms has probably been much greater. Notwithstanding the fall in gross output between 1971 and 1972 net output continued to rise although at a slower rate and over the 10 years grew two and three-quarter times. The growth in the latter coupled with the relatively slower growth in employment enabled net output per head (at current prices) to double between 1963 and 1972.

British Wines, Cider and Perry
3.7: $\quad$ The British Wines, Cider and Perry Census industry was redefined between 1963 and 1968 and although the data for these years remains more or less comparable the definition for 1968 and later years can be stated as:
> 'Manufacturing British wines, cider and perry and apple pectin. Bottling and canning by manufacturers of British wines etc. are included. Establishments engaged wholly or mainly in bottling or canning drinks purchased from other firms (or in bottling or canning on commission) are excluded. ${ }^{1}+$

[^4]Over the ten years between 1963 and 1972 the number of enterprises classified to the industry is shown in Table 3.5 to have fallen by 2, although as many as 45 and 49 were recorded for 1970 and 1971, respectively. A similar pattern of peaking is evident for establishments, which fell by 4 during the same ten years, as well as for employment which was greater by 471 persons in 1972 than 10 years earlier but 829 less in 1972 than in 1971. The variable which experienced the largest measure of growth was net capital expenditure, increasing 4.67 times on the basis of current prices. Gross output and net output both increased (in current prices) by a factor of 2.70 whilst the comparable rate for net output per head (again, at current prices) was 2.41.

## Relative Positions

3.8: Table 3.6 summarises the data from the four preceding tables to provide a tabulated assessment of the relative importance of each of the sub-sectors with respect to the whole of the beverages industry. In this table it can be seen that the Brewing and Malting industry has consistently accounted for the greater though declining proportions of four out of the six industry indicators; that is, employment, gross output, net output and net capital expenditure. With the exception of net output per head, each of the other three sub-sectors of the industry have enjoyed increasing shares of the indicators shown. The largest value of net output per head is attributable to the Spirit Distilling and Compounding sub-sector which stood at just under 52 per cent. more than the industry average in 1972. Although the absolute number of establishments classified to the Soft Drinks industry fell between 1963 and 1972 it still managed to account for around 50 per cent. of all establishments classified to the drinks industries.

Enterprise Size Analysis
3.9: Part A of Table 3.7 shows the change in the average size of Brewing and Malting enterprises as measured by employment for
selected years between 1963 and 1972. Notwithstanding the fall in brewing industry employment of just over 10,000 persons between 1968 and 1972 and the loss of 15 enterprises, average size fell from 532 persons in 1968 to only 517 persons in 1972. This is not perhaps the best measure of central tendency to use for describing the distributions set out in Part B of Table 3.7 - the median employment size of enterprises is preferable. However, lack of precise knowledge about the size of enterprises in the upper part of the 1968 employment size distribution does not enable a median to be calculated with great accuracy. Nevertheless, the median size of enterprise classified to Brewing and Malting in 1972 can be obtained by linear interpolation in the median class and can be stated as just under 6,200 persons. The industry structure in terms of employment, establishments and enterprises set out in Part B of Table 3.7 shows that virtually all of the 10,000 reduction in employment between 1968 and 1972 was experienced amongst enterprises employing in excess of 1,000 persons.
3.10: Table 3.8 which relates to the Soft Drinks industry is set out with a similar format to the previous table, and it can be seen in Part A that the simple average size of enterprises classified to this industry increased from 77 persons in 1968 to 90 persons in 1972. The median size of enterprises in 1968 can be determined by interpolation as being 843 persons. Given that the number of persons engaged in enterprises employing more than 1,000 persons increased by just under 4,500 between 1968 and 1972, it is likely that the median size of enterprises increased over this period.
3.11: Lack of information concerning the employment size of firms in the upper parts of the 1968 and 1972 size distributions for the Spirit Distilling and Compounding industry prevents precise determination of
of median size of enterprise. However, as Table 3.9 shows, an increase in industry employment of just under 3,000 persons together with a reduction of 2 in the number of enterprises enabled the mean size of enterprises to rise from 273 persons in 1968 to 320 persons in 1972. The median size of enterprises could also reasonably be expected to have risen over the same period. In Table 3.10 comparable data for the British Wines, Cider and Perry industry is set out and shows the mean size of enterprise to have increased from 171 persons in 1968 to 187 persons by 1972.
3.12: The four tables referred to in paragraphs 3.8 to 3.11 have demonstrated that the mean size of enterprises classified to Soft Drinks, Spirit Distilling and Compounding and British Wines, Cider and Perry have all increased, whilst for Brewing and Malting this measure has declined. Indeed, the Brewing and Malting industry is the one sub-sector of the UK beverages industry which has undergone extensive rationalisation during the study period as indicated not only by the fall in employment but also by the fall in the number of enterprises and establishments. The concentration of ownership is evident for the other three sub-sectors of the industry, but in these cases it has been accompanied by an expansion of employment. However, it is dangerous to attach too much importance to the changes in the number of establishments classified to these industries as the definition of an establishment changed between the 1968 and 1972 Census of Production. The effects of this changed definition are discussed in the following section.

## Establishment Size Analysis

3.13: The fundamental definition of an establishment for which data was collected at the time of the 1968 and 1970 Censuses remained that of "the smallest unit which could provide information normally required for an economic census, for example, employment, expenses, turnover, and
net capital formation."* This also holds for the 1971 and 1972 Censuses. However, differences do arise which make comparisons of establishment data for 1968 with 1970 and subsequent years, inappropriate, and concern relative location and proximity of manufacturing activity, on the one hand and the degree of business integration, on the other.
3.14: By the 1968 definition, activities conducted as a single business but carried out at a number of addresses (local units) could be covered by one Census return for an establishment provided that the separate addresses were in close proximity and engaged in the same census industry. In the case of closely integrated activities being conducted at addresses which were not in close proximity the individual addresses were considered as separate establishments in the count of establishments classified to a particular Census industry. This last ruling was altered for Censuses from 1970 onwards whereby businesses common to one census industry but with separate addresses not in close proximity to each other could be covered by one return for an establishment.
3.15: It appears, therefore, that the difference between the 1968 and 1970 count of establishments may be found amongst those addresses or local units that were not in close proximity; those that were in close proximity in both 1968 and 1970 are therefore likely to have been considered as single establishments at both dates. The Summary Tables of the 1970 Census $^{+}$state that the effect of this changed definition "is to reduce somewhat the number of larger establishments as compared with 1968." For the explanation of why this should be, as well as for a general discussion of the changed definition of an establishment, reference can be made to Prais (1976) $\varnothing$ who states that "it seems likely that where

[^5]a small establishment consists of a number of local units they will tend to be located in close proximity; it is larger establishments that will tend to control units not in close proximity." Thus, a comparison of the data on establishments for 1968 and 1970 will be affected by differences of classification most notably amongst the top end of the size distribution whilst at the lower end a 1968 establishment is likely to be similarly defined in 1970.
3.16: The employment size distributions of establishments classified to the Census industries forming the sub-sectors of this study may be compared for 1970 and 1972 in Tables 3.11 to 3.14. From these tables mean plant sizes can be determined and are presented alongside data on the average number of establishments per enterprise in Table 3.15. Additionally, the median employment size of establishments can be obtained through interpolation for the Brewing and Malting and Soft Drinks industries. Although the Brewing and Malting industry sustained a fall in total employment of just over 4,000 persons between 1970 and 1972, the proportion employed in establishments employing more than 1,000 persons increased from 56.3 per cent. to 58.7 per cent. This rise in concentration within the top end of the size distribution is reflected by small increases in average plant size as measured by both the mean and the median. The fall in the total of both establishments and employment in the industry are not the only indicators that the brewing industry has undergone considerable rationalisation, for the average number of establishments per enterprise fell from 1.83 in 1970 to 1.73 in 1972.
3.17: The average number of establishments per enterprise in the Soft Drinks trade fell between 1970 and 1972 to the extent that it was almost a one-to-one relationship; that is, from 1.17 to 1.13. As this industry experienced an expansion of total employment it is not surprising therefore that average plant size increased - the mean size increasing from 67 to 80 persons per plant, and the median plant size from 392 to 660 persons. The extent of the difference between the mean and median serves
to exemplify the degree of skewness in such size distributions and as Prais has noted * "a single summary figure will often not provide an adequate characterisation of the facts." With this cautionary note in mind, therefore, the mean plant size in Spirit Distilling and Compounding can be stated to have increased from 171 persons in 1970 to 177 in 1972, accompanied by a rise in the average number of plants per enterprise. Although the total number of establishments classified to the industry in 1972 was only 2 less than it had been in 1970, both the smaller (employing less than 24 persons) and larger (employing more than 200 persons) establishments enjoyed increases in their numbers. For the British Wines, Cider and Perry industry the number of employees fell between 1970 and 1972, not only in total, but across each establishment size grouping, as shown in Table 3.14. Nevertheless, the proportion of persons engaged in larger establishments, (employing more than 200 persons) rose from 76.5 per cent. to 78.5 per cent. The mean plant size increased, from 98 to 137 persons, as did the average number of establishments per enterprise, from a factor of 1.18 to 1.36 .

Size of Manufacturing (local) Units
3.18: Since the 1970 Census of Production, data on employment and capital expenditure has been separately available for local units, so that with respect to these two items of data the local unit is the smallest unit for which Census data is normally available. It should be noted that although this information is collected for both manufacturing and non-manufacturing (local) units, only that relating to the former is published where the unit is defined as "a factory or plant at a single site or address." + Furthermore, comprehensive data was not released for 1970 and 1971 but the employment size distributions are available for 1972 and 1973, from which the mean and median employment sizes of units, presented in Table 3.16, have been derived.

[^6]3.19: The ability to make meaningful comments about the data in Table 3.16 is frustrated by its restriction to only two years, as well as the lack of comparability with establishment size for earlier years. In addition, the most serious limitation is posed by the fact that the levels of employment upon which the two averages for 1972 are based differ from total industry employment in Brewing and Malting and Soft Drinks shown in Tables 3.2 and 3.3. In the case of Brewing and Malting the level of employment shown in Table 3.16 for 1972 at 72,813 exceeds that given in Table 3.2 by just over 2,500 persons, whilst for Soft Drinks this pattern is reversed, with 25,995 employees given in Table 3.16 as compared with 32,700 in Table 3.3. As far as the Soft Drinks industry is concerned it is understood that the difference can be accounted for by that part of the industry's employment that can be allocated to non-manufacturing (local) units. For the Brewing and Malting industry, the explanation of the difference is somewhat uncertain. With these differences in mind, therefore, it is worth noting that in Brewing and Malting the median size of establishment in 1972 was almost double that of the manufacturing (local) unit, whereas for Soft Drinks it was four and a quarter times greater.

## Sales and Concentration

3.20: The 1968 Census of Production provides an analysis of the sales made by larger establishments classified to a particular industry for that year together with comparable data for 1963. Since the second quarter of 1972 such data has been collected and published on a quarterly basis and annual data for 1974 may be compared with earlier years and is presented here for the Census industries that are the concern of this study in Tables 3.17 to 3.20. For each of these tables, a larger establishment is defined as an establishment employing 25 or more persons, and the sales of the larger establishment classified to Brewing and Malting in 1963 and 1968 represented just over 98 per cent. of the total sales of all establishments in both
years; for Soft Drinks the proportions were 86 per cent. and 89 per cent. respectively; for Spirit Distilling and Compounding 96 per cent. in both years; and for British Wines, Cider and Perry 94 per cent. and 96 per cent. respectively.
3.21: Each of the tables analysing industry sales divides the total into two distinct groups; first of all a sub-total relating to the sales value of principal products sold and secondly a sub-total of sales of other than principal products. Amongst the former category it is possible to distinguish the value of sales of principal products of the industry being studied made by establishments which are classified to other industries and from this the degree of exclusiveness can be derived. The degree of exclusiveness expresses the sales value of principal products made by establishments classified to a particular industry as a percentage of total sales of principal products wherever produced. Furthermore, the extent to which an industry's sales are comprised of its principal products may be determined from the ratio of this sales value to total sales made by establishments classified to that industry and termed the degree of specialisation. Both of these measures of exclusiveness and specialisation are set out in Table 3.21 for each sub-sector of the beverages industry for 1963, 1968 and 1974.
3.22: That the sales of the principal products of the Brewing and Malting and Spirit Distilling and Compounding industries have been highly exclusive in each year are given by the appropriate factors in Table 3.21. The Soft Drinks industry has enjoyed an increase in the degree of exclusiveness, rising from just under 90 per cent. in 1963 to stand at just over 95 per cent. in 1974. The reverse applied to the British Wines, Cider and Perry industry, the ratio falling from around 98 per cent. in 1963 to just over 93 per cent. in 1974.
3.23: Greater relative importance can be attached to sales of other than principal products the further that the degree of specialisation moves below and away from 100 per cent. Thus, it can be seen in Table 3.21 that the degree of specialisation for the Brewing and Malting industry fell from just under 72 per cent. in 1963 to 69 per cent. in 1974, the explanation for which may be seen in Table 3.17. The largest element of sales of other than principal products is merchanted goods; that is, goods bought-in, perhaps re-packaged (in the case of this industry, bottling), and then sold. As Table 3.17 shows, most of these merchanted goods in 1968 were the products of other beverages industry sub-sectors. It is possible therefore, that brewers are taking an increasing role in the distribution and sale of all beverages industry products. The degree of specialisation applied to the Spirit Distilling and Compounding industry showed a marked decline between 1968 and 1974, falling from around 97 per cent. to almost 94 per cent. The other two sub-sectors experienced increases in this factor, which was most marked for the Soft Drinks industry, rising from about 72 per cent. in 1963 to nearly 81 per cent. by 1974, indicating the increasing relative importance which may be attached to the sales of their principal products within their respective total sales mixes.
3.24: The Census of Production provides estimates of sales concentration ratios which are presented here for the various sub-sectors of the beverages industry for selected years between 1963 and 1972 in Table 3.22. Unfortunately, the data for the two earlier years is not comparable with that for the two later years. The reason for this arises from the fact that in 1963 and 1968 the sales concentration ratio was in effect a principal products concentration ratio whilst the ratios for 1970 and 1972 express the total sales (i.e. principal products plus merchanted goods etc) of the five largest enterprises as a percentage of total sales classified to that industry, that is, an industry concentration ratio.
3.25: From Table 3.22 it can be seen that the proportion of total sales of principal products attributable to the five largest enterprises in the beer market rose from 50.5 per cent. in 1963 to 64.4 per cent. in 1968. In addition, it can be stated that seven companies were required in 1963 to produce the same concentration ratio that applied in 1968. During this same period there appears to have been a marginal decline of one half a per cent. in the sales concentration of the five largest soft drinks enterprises, to stand at 54 per cent. in 1968. Amongst the top seven firms in the ethyl alcohol product market of the Spirit Distilling and Compounding industry sales concentration increased from 94.8 per cent. in 1963 to 96.6 per cent. in 1968. This is a significant increase in concentration, for nine firms were required in 1963 to produce the same concentration ratio that existed in 1968. The blended whisky market shows a fall in sales concentration, from 94.2 per cent. in 1963 to 91.0 per cent. in 1968, for the top five firms in both years. The total gin market can be seen to have been comprised by eight firms in 1968. For British Wines, Cider and Perry the five firm sales concentration ratio on principal products exhibits a decline between 1963 and 1968, falling from 97.2 per cent. to 91.6 per cent.
3.26: The data for 1970 and 1972 shows that sales concentration in the Brewing and Malting industry declined by two percentage points between these years to stand at 56 per cent. in 1972. For the Soft Drinks industry the sales concentration ratio is given as 51 per cent. in 1970 and 56 per cent. in 1972, but these ratios are related to five firms in 1970 and six in 1972 so that it is unclear as to whether there was any real change in concentration. A similar qualification attaches to the British Wines, Cider and Perry industry, where the five largest enterprises accounted for 82 per cent. of total sales in 1970 and the six largest made up 92 per cent. in 1972. For the Spirit Distilling and Compounding industry sales concentration data is not available for 1970, however, the five firm gross output concentration ratio can be stated to have fallen from 72 per cent. in 1970 to 69 per cent. in 1972.
3.27: To determine principal product concentration ratios for 1970 and 1972 data on the sales of principal products made by the five largest enterprises in these years is required. Unfortunately, this information is not readily available from published Census reports. However, in the absence of such information, an attempt can be made to determine the extent to which the industry ratios are likely to either overestimate or underestimate product market concentration. In general terms, this involves qualifying the industry concentration ratios by the degrees of specialisation and exclusiveness: the lower the degree of specialisation, the greater is the likelihood that the industry ratio understates product market concentration; at the same time, the lower the degree of exclusiveness the more probable it is that the industry ratio overstates concentration in the product market. The data which would enable us to calculate degrees of specialisation and exclusiveness is not available for 1970 and 1972 and even if it were definitive conclusions could not be reached, it would merely enable a judgement to be made as to the likely extent of under or over-statement in the industry concentration ratios in measuring principal products concentration.
3.28: Table 3.23 summarises some additional measures of concentration for the sub-sectors of the beverages industry for 1970 and 1972, with the number of enterprises to which the data relates in parenthesis against each year. The concentration of employment amongst the five largest Brewing and Malting enterprises remained unchanged at 56 per cent. in both 1970 and 1972, whilst for net output the ratio declined from 61 per cent. to 57 per cent. For the same number of enterprises classified to Spirit Distilling and Compounding, the employment concentration ratio declined by one per cent. to stand at 71 per cent. in 1972. Concentration of net output, on the other hand, increased from 66 per cent. to 73 per cent. For the British Wines, Cider and Perry industry concentration in employment and net output remained very high, but as
well as for Soft Drinks, the full significance of change in these measures between 1970 and 1972 cannot be assess because of the different number of firms to which the data relates.

## Sales by Foreign-owned Enterprises

3.29: Sales by foreign-owned enterprises in the subsectors of the beverages industry are shown in Table 3.24 to have been relatively unimportant. Some 8 per cent. of the Spirit Distilling and Compounding sub-sectors' sales were made by such enterprises in 1963 but this was reduced to 7 per cent. by 1968. However, in 19683 per cent. of Soft Drinks' sales were accounted for by foreign-owned enterprises compared with nothing five years earlier. The other two subsectors are shown in 1963 and 1968 not to have been subjected to foreignowned penetration of their sales.

TABLE 3.1
Structure of the UK Beverages Industry

|  | 1963 | 1968 | 1970 | 1971 | 1972 |
| :--- | :---: | ---: | ---: | ---: | ---: |
| No. of Enterprises | N.a. | N.a. | N.a. | N.a. | N.a. |
| No. of Establishments | 1,509 | 1,140 | 990 | 889 | 806 |
| No. Employed | 140,500 | 136,027 | 133,100 | 137,900 | 130,371 |
| Gross Output (£000) | $1,153,307$ | $1,733,387$ | $2,168,485$ | $2,371,344$ | $2,330,370$ |
| Net Output (£000) | 346,321 | 478,350 | 632,432 | 706,583 | 747,282 |
| Net Output per <br> head (£) | 2,465 | 3,516 | 4,752 | 5,124 | 5,732 |
| Net Capital <br> Expenditure (£000) | 41,903 | 61,022 | 72,643 | 92,914 | 93,405 |

SOURCE: aggregated from Census of Production data on Brewing and Malting, Soft Drinks, Spirit Distilling and Compounding, and British Wines, Cider and Perry.

TABLE 3.2
Brewing and Malting

|  | 1963 | 1968 | 1970 | 1971 | 1972 |
| :--- | ---: | ---: | ---: | ---: | ---: |
| No. of Enterprises | 207 | 151 | 143 | 143 | 136 |
| No. of Establishments | 578 | 383 | 262 | 268 | 235 |
| No. Employed | 86,800 | 80,443 | 74,500 | 78,000 | 70,300 |
| Gross Output (£000) | 724,340 | $1,065,741$ | $1,241,918$ | $1,363,346$ | $1,340,245$ |
| Net Output (£000) | 218,324 | 293,176 | 366,122 | 389,540 | 410,155 |
| Net Output per | 2,514 | 3,645 | 4,916 | 4,995 | 5,833 |
| head (£) |  |  |  |  |  |
| Net Capital <br> Expenditure (£000) | 32,215 | 43,741 | 49,469 | 70,635 | 66,783 |

SOURCE: Census of Production.

TABLE 3.3
Soft Drinks

|  | 1963 | 1968 | 1970 | 1971 | 1972 |
| :--- | ---: | ---: | ---: | ---: | :---: |
| No. of Enterprises | 574 | 407 | 395 | 374 | 361 |
| No. of <br> Establishments | 738 | 545 | 464 | 440 | 409 |
| No. Employed | 32,900 | 31,217 | 31,200 | 31,800 | 32,700 |
| Gross Output <br> (£000) | 105,856 | 145,181 | 193,027 | 248,264 | 270,494 |
| Net Output <br> (£000) | 46,805 | 64,141 | 84,814 | 99,112 | 114,469 |
| Net Output <br> per head (£) | 1,421 | 2,055 | 2,718 | 3,114 | 3,495 |
| Net Capital <br> Expenditure (£000) | 3,478 | 7,423 | 5,815 | 6,055 | 9,104 |

SOURCE: Census of Production.

TABLE 3.4
Spirit Distilling and Compounding

|  | 1963 | 1968 | 1970 | 1971 | 1972 |
| :--- | ---: | ---: | ---: | ---: | :---: |
| No. of Enterprises | 60 | 73 | 91 | 61 | 71 |
| No. of <br> Establishments | 155 | 177 | 130 | 127 | 128 |
| No. Employed | 16,600 | 19,928 | 22,200 | 22,600 | 22,700 |
| Gross Output <br> (£000) | 302,360 | 488,163 | 682,775 | 700,984 | 663,518 |
| Net Output <br> (£000) | 71,821 | 108,507 | 162,580 | 193,696 | 197,418 |
| Net Output <br> per head (£) | 4,338 | 5,445 | 7,317 | 8,559 | 8,705 |
| Net Capital <br> Expenditure (£000) | 5,683 | 8,473 | 16,201 | 14,259 | 15,055 |

SOURCE: Census of Production.

TABLE 3.5
British Wines, Cider and Perry

|  | 1963 | 1968 | 1970 | 1971 | 1972 |
| :--- | ---: | ---: | ---: | ---: | :---: |
| No. of Enterprises | 27 | 26 | 45 | 49 | 25 |
| No. of <br> Establishments | 38 | 35 | 53 | 54 | 34 |
| No. Employed | 4,200 | 4,439 | 5,200 | 5,500 | 4,671 |
| Gross Output <br> (£000) | 20,751 | 34,302 | 50,765 | 58,750 | 56,113 |
| Net Output <br> (£000) | 9,371 | 12,526 | 18,916 | 24,235 | 25,240 |
| Net Output <br> per head (£) | 2,243 | 2,822 | 3,615 | 4,416 | 5,404 |
| Net Capital <br> Expenditure (£000) | 527 | 1,385 | 1,158 | 1,965 | 2,463 |

SOURCE: Census of Production.

TABLE 3.6
Relative Importance of Sub-sectors of the Beverages Industry, 1963, 1968 and 1972

|  | Brewing \& Malting \% | Soft Drinks \% | Spirit <br>  <br> Compounding \% | British Wines, Cider and Perry \% | BEVERAGES INDUSTRY (Base for percentages) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Establishments |  |  |  |  | (No.) |
| 1963 | 38.3 | 48.9 | 10.3 | 2.5 | 1,509 |
| 1968 | 33.6 | 47.8 | 15.5 | 3.1 | 1,140 |
| 1972 | 29.2 | 50.7 | 15.9 | 4.2 | 806 |
| Employment |  |  |  |  | (Thous.) |
| $1963$ | 61.8 | 23.4 | 11.8 | 3.0 | 140.5 |
| 1968 | 59.1 | 22.9 | 14.6 | 3.4 | 136.0 |
| 1972 | 53.9 | 25.1 | 17.4 | 3.6 | 130.4 |
| Gross Output |  |  |  |  | (£000) |
| 1963 | 62.8 | 9.2 | 26.2 | 1.8 | 1, 153,307 |
| 1968 | 61.5 | 8.4 | 28.2 | 1.9 | 1,733,387 |
| 1972 | 57.5 | 11.6 | 28.5 | 2.4 | 2,330,370 |
| Net Output |  |  |  |  | (£000) |
| 1963 | 63.0 | 13.5 | 20.7 | 2.8 | 346,321 |
| 1968 | 61.3 | 13.4 | 22.7 | 2.6 | 478,350 |
| 1972 | 54.9 | 15.3 | 26.4 | 3.4 | 747,282 |
| Net Output | (£) | (£) | (£) | (£) | (£) |
| per Head |  |  |  |  |  |
| 1963 | 2,514 | 1,421 | 4,338 | 2,243 | 2,465 |
| 1968 | 3,645 | 2,055 | 5,455 | 2,822 | 3,516 |
| 1972 | 5,833 | 3,495 | 8,705 | 5,404 | 5,732 |
| Net Capital <br> Expenditure |  |  |  |  | (£m) |
| Expenditure 1963 | 76.8 | 8.4 | 13.6 | 1.2 | 41.9 |
| 1968 | 71.6 | 12.1 | 13.9 | 2.4 | 61.0 |
| 1972 | 71.5 | 9.7 | 16.1 | 2.7 | 93.4 |

SOURCE: Derived from Census of Production data.

TABLE 3.7
Brewing and Malting
PART A: Average Size of Enterprises 1963-72

| Year | Average Size of Enterprise <br> (No. Employed) |
| :---: | :---: |
| 1963 | 419 |
| 1968 | 532 |
| 1970 | 521 |
| 1971 | 545 |
| 1972 | 517 |

PART B: Size Distribution of Enterprises, 1968 and 1972

| Enterprise Size | No. Enterprises | No. Establishments | No. <br> Employed <br> ( 000 's) |
| :---: | :---: | :---: | :---: |
| 1-99 | 87 | 104 | 2.9 |
| 100-199 | 19 | 47 | 2.6 |
| 200-499 | 25 | 50 | 7.4 |
| 500-999 | 7 | 28 | 4.2 |
| 1000-4999 | 5 | 24 | 8.2 |
| 5000 and over | 6 | 124 | 55.0 |
| (Unsatisfactory Returns) | $\frac{2}{151}$ | $\frac{6}{383}$ | $\frac{0.2}{80.4}$ |
| 1-99 | 80 | 142 | 3.1 |
| 100-199 | 18 | 19 | 2.7 |
| 200-499 | 21 | 22 | 6.4 |
| 500-999 | 6 | 9 | 4.4 |
| 1000-7499 | 8 | 23 | 26.9 |
| 7500 and over | 3 | 20 | 26.9 |
|  | $\underline{136}$ | $\underline{235}$ | $\underline{70.3}$ |

SOURCE: Census of Production, 1963-72.

TABLE 3.8
Soft Drinks
PART A: Average Size of Enterprise, 1963-72

| Year | Average Size of Enterprise <br> (No. Employed) |
| :---: | :---: |
| 1963 | 57 |
| 1968 | 77 |
| 1970 | 79 |
| 1971 | 85 |
| 1972 | 90 |

PART B: Size Distribution of Enterprises, 1968 and 1972

| Enterprise Size | No. Enterprises | No. <br> Establishments | No. <br> Employed <br> (000's) |
| :---: | :---: | :---: | :---: |
| 1-199 | 378 | 405 | 9.9 |
| 200-499 | 6 | 9 | 1.9 |
| 500-999 | 7 | 32 | 5.1 |
| 1000 and over | 4 | 87 | 13.7 |
| Unsatisfactory Returns | $\frac{12}{407}$ | $\frac{12}{545}$ | $\frac{0.6}{31.2}$ |
| 1-199 | 341 | 353 | 8.8 |
| 200-499 | 10 | 25 | 2.9 |
| 500-999 | 4 | 4 | 2.9 |
| 1000 and over | 6 | 27 | 18.1 |
|  | $\overline{361}$ | 409 | $\overline{32.7}$ |

SOURCE: Census of Production.

TABLE 3.9
Spirit Distilling and Compounding
PART A: Average Size of Enterprise, 1963-72

| Year | Average Size of Enterprise <br> (No. Employed) |
| :--- | :---: |
| 1963 | 277 |
| 1968 | 273 |
| 1970 | 244 |
| 1971 | 370 |
| 1972 | 320 |

PART B: Size Distribution of Enterprises, 1968 and 1972

| Enterprise Size | No. Enterprises | No. <br> Establishments | No. <br> Employed <br> ( 000 l s) |
| :---: | :---: | :---: | :---: |
| 1-99 | 50 | 60 | 1.5 |
| 100-199 | 6 | 12 | 0.9 |
| 200 and over | 13 | 99 | 17.5 |
| Unsatisfactory Returns | $\begin{array}{r}4 \\ \hline\end{array}$ | $\underline{6}$ | $\frac{0.1}{19.1}$ |
| 1-99 | 49 | 74 | 1.1 |
| 100-199 | 6 | 9 | 0.9 |
| 200-499 | 6 | 9 | 1.8 |
| 500 and over | 10 | 36 | 18.9 |
|  | 71 | $\overline{128}$ | $\underline{22.7}$ |

SOURCE: Census of Production.

TABLE 3.10
British Wines, Cider and Perry
PART A: Average Size of Enterprise, 1963-72

| Year | Average Size of Enterprise <br> (No. Employed) |
| :--- | :---: |
| 1963 | 155 |
| 1968 | 171 |
| 1970 | 115 |
| 1971 | 112 |
| 1972 | 187 |

PART B: Size Distribution of Enterprises, 1968 and 1972

| Enterprise Size | No. Enterprises | No. Establishments | No. <br> Employed <br> (000's) |  |
| :---: | :---: | :---: | :---: | :---: |
| 1-99 | 17 | 18 | 0.2 | 1968 |
| 100 and over | 7 | 15 | 4.1 |  |
| Unsatisfactory Returns | $\frac{2}{26}$ | $\frac{2}{35}$ | $\frac{-}{4.4}$ |  |
| 1-99 | 19 | 23 | 0.4 | 1972 |
| 100 and over | 6 | 11 | 4.3 |  |
|  | 25 | $\overline{34}$ | 4.7 |  |

SOURCE: Census of Production.

TABLE 3.11
Brewing and Malting - Size Distribution of Establishments, 1970 and 1972

| Number Employed by Establishments | Number of Establishments | Number Employed |  |
| :---: | :---: | :---: | :---: |
| 1-24 | 112 | 1,615 | 1970 |
| 25-49 | 19 | 741 |  |
| 50-99 | 29 | 2,003 |  |
| 100-299 | 51 | 9,537 |  |
| 300-399 | 11 | 3,851 |  |
| 400-499 | 4 | 1,776 |  |
| 500-999 | 18 | 12,998 |  |
| 1000-1999 | 10 | 11,779 |  |
| 2000 and over | 8 | 30,180 |  |
|  | $\underline{\underline{262}}$ | 74,480 |  |
| 1-24 | 111 | 1,212 | 1972 |
| 25-49 | 12 | 457 |  |
| 50-99 | 25 | 1,709 |  |
| 100-299 | 39 | 7,075 |  |
| 300-399 | 11 | 3,853 |  |
| 400-499 | 7 | 3,164 |  |
| 500-999 | 14 | 11,586 |  |
| 1000-1999 | 9 | 14,524 |  |
| 2000 and over | 7 | 26,737 |  |
|  | $\underline{235}$ | 70,317 |  |

SOURCE: Census of Production 1970 and 1972.

TABLE 3.12
Soft Drinks - Size Distribution of Establishments, 1970 and 1972

| Number Employed by Establishments | Number of Establishments | Number Employed |  |
| :---: | :---: | :---: | :---: |
| 1-24 | 274 | 3,046 | 1970 |
| 25-49 | 95 | 3,436 |  |
| 50-199 | 95 | 7,250 |  |
| 200-499 | 9 | 2,942 |  |
| 500-999 | 4 | 2,750 |  |
| 1000 and over | 5 | 11,799 |  |
|  | $\overline{482}$ | 31,223 |  |
| 1-24 | 240 | 2,386 | 1972 |
| 25-49 | 68 | 2,538 |  |
| 50-99 | 47 | 3,575 |  |
| 100-299 | 21 | 3,961 |  |
| 300-749 | 8 | 4,886 |  |
| 750 and over | 7 | 15,303 |  |
|  | 361 | 32,749 |  |

SOURCE: Census of Production 1970 and 1972.

TABLE 3.13
Spirit Distilling and Compounding - Size Distribution of
Establishment, 1970 and 1972

| Number Employed <br> by Establishments | Number of <br> Establishments | Number <br> Employed |  |
| :---: | :---: | :---: | :---: |
| $1-24$ | 55 | 925 | 1970 |
| $25-49$ | 22 | 790 |  |
| $50-99$ | 17 | 1,101 |  |
| $100-199$ | 11 | 1,738 |  |
| 200 and over | $\underline{130}$ | $\underline{25,667}$ |  |
|  | $\underline{22,221}$ |  |  |
| $1-24$ | 65 | 750 | 1972 |
| $25-49$ | 13 | 478 |  |
| $50-99$ | 9 | 555 |  |
| $100-199$ | 10 | $\underline{19,452}$ |  |
| 200 and over | $\underline{128}$ | $\underline{22,678}$ |  |
|  |  |  |  |

TABLE 3.14
British Wines, Cider and Perry - Size Distribution of Establishments, 1970-72

| Number Employed <br> by Establishments | Number of <br> Establishments | Number <br> Employed |
| :---: | :---: | :---: |
| $1-24$ | 32 | 277 |
| $25-99$ | 10 | 445 |
| $100-199$ | 4 | 503 |
| 200 and over | $\underline{7}$ | $\boxed{4,008}$ |
|  | $\underline{53}$ | $\boxed{5,233}$ |
| $1-24$ | 20 | 219 |
| $25-99$ | 6 | 407 |
| $100-199$ | 3 | 378 |
| 200 and over | $\underline{5}$ | $\underline{3,667}$ |
|  | $\underline{43}$ |  |
|  |  |  |

SOURCE: Census of Production 1970 and 1972

TABLE 3.15
Average Plant Sizes and Average Number of Establishments per Enterprise, 1970-72

| Census Industry | Average Plant Size (persons employed) |  | Average No. Establishment per Enterprise |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1970 | 1972 | 1970 | 1972 |
| Brewing and Malting |  |  |  |  |
| Mean Median | $\begin{array}{r} 284 \\ 1,400 \end{array}$ | $\begin{array}{r} 299 \\ 1,420 \end{array}$ | 1.83 | 1.73 |
| Soft Drinks |  |  |  |  |
| Mean Median | $\begin{array}{r} 67 \\ 392 \end{array}$ | 80 660 | 1.17 | 1.13 |
| Spirit Distilling and Compounding |  |  |  |  |
| Mean <br> Median | 171 | 177 | 1.43 | 1.80 |
| British Wines, Cider and Perry |  |  |  |  |
| Mean Median | 98 | 137 $\ldots$ | 1.18 | 1.36 |

SOURCE: derived from Census of Production, 1970-72.

TABLE 3.16
Mean and Median Employment Size of Manufacturing
(Local) Units, 1972-73

|  | No. of | Employment |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Cocal | in Local | Mean | Median |  |
| Census Industry | Units | Units | Size | Size |

Brewing and Malting

| 1972 | 374 | $* 72,813$ | 194.6 | 753 |
| :--- | :--- | ---: | ---: | ---: |
| 1973 | 400 | 71,008 | 177.5 | 685 |

Soft Drinks

| 1972 | 445 | $* * 25,995$ | 58.4 | 155 |
| ---: | ---: | ---: | ---: | ---: |
| 1973 | 487 | 26,320 | 54.0 | 158 |

${ }^{+}$Spirit Distilling and
Compounding

| 1972 | $\ldots$ | $\ldots$ | $\ldots$ | 450 |
| :--- | :--- | :--- | :--- | :--- |
| 1973 | $\ldots$ | $\ldots$ | $\ldots$ | 480 |

${ }^{+}$British Wines, Cider and Perry
1972 ... ... ... 690
1973 ... ... ... 650

SOURCE: Census of Production, Business Monitor PA1003.

* this level of employment is greater than that shown for this industry in Table 3.2.
** this level of employment is less than that shown for this industry in Table 3.3.
+ the data for these two industries are aggregated in PA 1003 - the median sizes of units shown above were kindly supplied in a private communication from Business Statistics Office, Newport, Gwent, Wales.

TABLE 3.17
Brewing and Malting - Analysis of Sales of larger establishments
classified to the industry ( $£ 000$ )

|  | 1963 | 1968 | 1974 |
| :---: | :---: | :---: | :---: |
| Principal Products |  |  |  |
| Beer | 484,041 | 665,784 | 944,136 |
| Malt and all other Work Done | 29,891 | 34,926 | 133,903 |
|  | 513,932 | 700,710 | 1,078,039 |
| Less: Sales in Other Industries | 1,669 | 1,277 | 12,709 |
| Sales of Principal Products made by larger establishments classified to this industry | 512,263 | 699,433 | $\underline{1,065,330}$ |
| Other than Principal Products |  |  |  |
| Manufactures |  |  |  |
| Yeast | 438 | 580 |  |
| Soft Drinks | 1,179 | 2,082 | 11,524 |
| Other products | 931 | 1,364 |  |
| Services rendered | 1,225 | 3,676 | 2,088 |
|  | 3,773 | 7,702 | 13,612 |
| Merchanted goods |  |  |  |
| Beer | 69,295 | 129,042 | $\ldots$ |
| Whisky | 5,361 | 7,192 | $\cdots$ |
| Gin | 2,957 | 4,035 | $\ldots$ |
| Other Spirits | 8,133 | 8,656 | ... |
| Imported Wines | 5,225 | 7,469 | . $\cdot$ |
| Alcoholic Cider and Perry | 1,623 | 2,750 | . . |
| Soft Drinks (except fruit juices) | 742 | 1,270 | . . |
| Other liquors (inc. vinegar) | 349 | 1,131 | $\ldots$ |
| Other goods (inc. Canteen takings) | 104,065 | 177,899 |  |
|  | 197,750 | 339,444 | 463,826 |
| Total Sales | 713,786 | 1,046,579 | 1,542,768 |

[^7]TABLE 3.18
Soft Drinks - Analysis of Sales by larger establishments classified to the industry (£000)

|  | 1963 | 1968 | 1974 |
| :---: | :---: | :---: | :---: |
| Principal Products |  |  |  |
| Soft Drinks - concentrated and unconcentrated | 66,886 | 102,289 | 268,620 |
| Fruit Drink base | 2,327 | 2,491 |  |
| Fruit Juices - concentrated and unconcentrated Vegetable Juices (inc. Tomato | 2,545 | 4,383 | 15,845 |
| Juice) | 936 | 1,387 | 4,015 |
| Other Products and Work Done | 291 | 225 | 915 |
|  | 72,985 | 110,776 | 289,942 |
| Less: Sales in Other Industries | 7,384 | 9,841 | 13,998 |
| Sales of Principal Products made by larger establishments classified to this industry | 65,602 | 100,936 | 275,944 |
| Other than Principal Products |  |  |  |
| Sale of Goods | 1,921 | 5,399 | 17,951 |
| Services rendered | 879 | 299 | 368 |
|  | 2,800 | 5,698 | 18,319 |
| Merchanted Goods |  |  |  |
| Beer | 1,281 | 1,659 | $\cdots$ |
| Imported Wines | 3,041 | 2,284 | . . . |
| Spirits | 712 | 221 | ... |
| British Wines | 1,164 | 2,334 | $\ldots$ |
| Alcoholic Cider and Perry | 505 | 688 | ... |
| Soft Drinks (except fruit juices) | 5,368 | 5,125 | . $\cdot$ |
| Ofher purchased liquors (inc. vinegar) | 164 | 1,293 |  |
| Other goods and canteen takings |  | $\frac{8,249}{21.853}$ |  |
|  | $23,029$ | $21,853$ | $\underline{\underline{46,564}}$ |
| Total Sales | 91,431 | 128,487 | 340,827 |

SOURCE: Census of Production 1968
Business Monitor PQ232. 4th Quarter 1975.

TABLE 3. 19
Spirit Distilling and Compounding - Analysis of Sales by larger establishments classified to the industry (£OOO)

|  | 1963 | 1968 | 1974 |
| :---: | :---: | :---: | :---: |
| Principal Products (duty free/ duty paid) |  |  |  |
|  |  |  |  |
| Blended Whisky | 141,844 | 226, 154 | 519,694 |
| Ethyl Alcohol (Plain Spirit) | 70,579 | 132,287 | 138,324 |
| Gin | 6,475 | 64,162 | 107,953 |
| Other Spirits | 56,475 | 9,608 | 10,573 |
| Rum and Vodka |  |  | 40,540 |
| All Other Work Done | 1,578 | 3,688 | 25,244 |
|  | 270,476 | 435,899 | 842,328 |
| Less: Sales in Other Industries | 725 | 373 | 334 |
| Sales of Principal Products made by larger establishments classified to this industry | 269,751 | 435,526 | 841,994 |
| Other than Principal Products (duty free/duty paid) |  |  |  |
| Sales of goods and work done |  | 4,594 | 24,657 |
| Services rendered | 4,232 | 1,450 | 4,845 |
|  | 4,232 | 6,044 | 29,502 |
| Merchanted Goods (duty free/ <br> duty paid) |  |  |  |
| Whisky | 665 | 1,660 | ... |
| Gin | 470 | 869 | ... |
| Other Spirits | 747 | 1,029 | ... |
| British Wines |  | 20 | $\ldots$ |
| Imported Wines |  | 1,634 | $\cdots$ |
| Other purchased and non | 1,487 |  | . |
| purchased liquors |  | 1,087 | ... |
| Canteen takings | 67 | 172 |  |
|  | 3,436 | 6,471 | $\underline{\text { 25,652 }}$ |
| Total Sales | 277,419 | 448,041 | 897,148 |

SOURCE: Census of Production 1968
Business Monitor PQ239. 1. 4th Quarter 1975.

TABLE 3.20
British Wines, Cider and Perry - Analysis of Sales by larger
establishments classified to the industry (£000)


SOURCE: Census of Production 1968
Business Monitor PQ239.2 4th Quarter 1975

* excludes apple pectin

TABLE 3.21
Degrees of Specialisation and Exclusiveness ${ }^{+}$


+ Degree of Specialisation - is the value of the Census Trade's principal products produced by establishments classified to that Trade, expressed as a percentage of the Trade's gross output.
+ Degree of Exclusiveness - is the value of the Census Trade's principal products produced by establishments classified to that Trade, expressed as a percentage of the total output of those principal products wherever produced.

[^8]Sales Concentration Ratios, 1963-1972

| Census Industry | 1963 | 1968 | 1970 | 1972 |
| :---: | :---: | :---: | :---: | :---: |
| Brewing and Malting |  |  | 58 | 56 |
| (- of which Beer only) | 50.5 | 64.4 | ... | . |
| Soft Drinks | 54.5 | 54.0 | 51 | $56^{\text {S }}$ |
| Spirit Distilling and Compounding (- of which Ethyl Alcohol, | $\ldots$ | $\ldots$ | ...** | 69 |
| potable spirit) | 94.8* | 96.6* | . |  |
| (- of which Blended Whisky) | 94.2 | 91.0 |  |  |
| (- of which Gin) | ... | +100.0 |  |  |
| British Wines, Cider and Perry | 97.2 | 91.6 | 82 | 92 S |

SOURCE: Census of Production. Summary Tables. 1968-72.
The sales concentration ratios given in this table relate to the share of the top five firms unless indicated as follows:

$$
\begin{array}{lll}
S & - & \text { top } 6 \text { firms } \\
* & - & \text { top } 7 \text { firms } \\
+ & - & \text { top } 8 \text { firms }
\end{array}
$$

** The 5-firm concentration ratio for Gross Output in 1970 was 72 per cent., c.f. 69 per cent. in 1972.

## TABLE 3.23

Selected measures of Concentration, 1970 and 1972

| Census Industry | No. of Establishments | \% <br> Employment | \% <br> Net <br> Output |
| :---: | :---: | :---: | :---: |
| Brewing and Malting |  |  |  |
| 1970 (5) | 36 | 56 | 61 |
| 1972 (5) | 31 | 56 | 57 |
| Soft Drinks |  |  |  |
| 1970 (5) | 44 | 50 | 54 |
| 1972 (6) | 27 | 55 | 60 |
| Spirit Distilling and Compounding |  |  |  |
| 1970 (5) | 30 | 72 | 66 |
| 1972 (5) | 29 | 71 | 73 |
| British Wines, cider and Perry |  |  |  |
| 1970 (5) | 13 | 83 | 90 |
| 1972 (6) | 11 | 92 | 94 |

SOURCE: Census of Production. Summary Tables. 1970 and 1972.

## TABLE 3.24

Relative Importance of Sales by Foreign-Owned Enterprises in the Sub-sectors of the UK Beverages Industry, 1963 and 1968

|  | per cent. |  |
| :--- | :---: | :---: |
| Census Industry | 1963 | 1968 |
| Brewing and Malting <br> (- of which, Beer only) <br> Soft Drinks | Nil | Nil |
| Spirit Distilling and Compounding <br> $(-$ of which, Blended Whisky) <br> $(-$ of which, gin) | Nil | 3 |
| British Wines, Cider and Perry | 8 | 7 |

SOURCE: Census of Production 1968, Enterprise Tables.

## 4: COMPANY PROFILES

4.1: $\quad$ This section contains profiles of the major firms in the UK beverages industry; namely

The Distillers Co. Ltd.
Bass Charrington Ltd.
Allied Breweries Ltd.
Whitbread \& Co. Ltd.
Grand Metropolitan Ltd. (incl. Watneys, I.D.V., and Truman)
Courage Ltd.
Scottish and Newcastle Breweries Ltd.
Arthur Guinness Son \& Co. Ltd.

As well as a general description of activities, these profiles are intended to show
(i) company development in relation to mergers and acquisitions
and
(ii) regional/geographical analysis of sphere of operations together with details of number and site of production and distribution facilities (where available).

A variety of sources have been used which have not necessarily been credited separately; these are

Trade and Financial Press
Individual Company Report and Accounts
Individual Company Public Relations Material
Beer: A Report on the Supply of Beer. The Monopolies Commission. HMSO 1969.

Mergers and Concentration in British Industry. Hart, Utton and Walshe. Cambridge University Press 1973.

Recent Trends in Monopoly in Great Britain. G. Walshe. Cambridge University Press 1974.

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 384.4 \mathrm{~m}$. |
| 1972 | $£ 484.5 \mathrm{~m}$. |
| 1974 | $£ 594.1 \mathrm{~m}$. |

4.2: In 1959 Ind Coope Ltd. acquired Taylor, Walker and Co. Ltd., and in 1960 J.R. Phillips, Cluff and Pickering and Beverleys Successors as well as a part share of Grants of St. James's and other companies were also taken over. Also in 1959, Tetley Walker Ltd. acquired Wm. Whitaker and in 1960, the Melbourne Brewery. Then, in 1961 Ind Coope Ltd., Tetley Walker and Ansells Ltd. joined together changing their name to Allied Breweries Ltd. in 1963. In that same year Allied took over Friary Meux, Thomas Ramsden and Son Lłd. . in 1964, Bristol Vintners and Blatch's Theale Brewery in 1965, Showerings Vine Products and Whiteways Ltd. in 1968, and W.H. George \& Son Ltd., David Sandeman \& Sons Ltd. and British Wine Co. (London) Ltd. in 1970. After an abortive take-over bid for Boddingtons Breweries Ltd. in 1970 Allied relinquished its 36.3 per cent. holding of the issued ordinary share capital of that company in the following year, and also sold its 14.3 per cent. stake in The Hull Brewery Ltd. The Aylesbury Brewery Co. Ltd. was acquired in 1970.

## 4.3: Although having brewing interests in East Africa, the

 Caribbean and Australia, Allied's most significant overseas activity has been in the Netherlands through a series of acquisitions. In 1968 Allied acquired two Dutch breweries, Verenigde Nederlandse Brouwerijen Oranjeboom N.V. of Rotterdam and later that same year N.V. Bierbrouwerij giving them access to some 4,000 outlets and providing a basis for further expansion within continental Europe. Not long afterwards Allied acquired Houweling-Warnink N.V., also of Holland. In the development of a lager of international reputation Allied joined with Labatt of Canada, Pripp-Bryggerierna of Swedenand Unibra of Belgium to form Skol International in 1964 to produce and market Skol lager. After the UK's entry to the EEC Allied acquired all but 10 per cent. of Skol International's shares, these being held by Unibra of Belgium and Schwechat of Austria. Today, Skol is on sale in 70 countries and brewed under franchise and licensing arrangements in 14. Allied's acquisition of Showerings, Vine Products and Whiteways Ltd. made them the largest wholesaler and retailer of wines and spirits in the UK (a position formerly attributable to Bass Charrington Ltd.) and with the international and Dutch ventures created what various sources have described as Europe's largest drinks business.
4.4: Allied currently hold 21.6 per cent. of the ordinary shares of Trust House Forte Ltd., the legacy of an unsuccessful take-over bid made in 1972. However, rumours abound that such a merger of interests could still take place sometime in the future. During 1968 Allied and Unilever Ltd. were actively engaged in discussions concerning a merger between them but this was referred to the Monopolies Commission who reported in June 1969 that if such a merger were achieved it would not necessarily be contrary to the public interest. * However, no such merger has yet come to fruition. More recently, Allied's name has been linked with another take-over; namely, acquisition of Teacher (Distillers) Ltd., one of the few remaining relatively large independent Scotch whisky distillers.
4.5: $\quad$ Allied's principal activities may be summarised as brewing beers; manufacture of perry, ciders, British wines, soft drinks, and fruit ¡uices; production of ports and sherries; wholesaling and retailing of beers, perry, ciders, wines, spirits, soft drinks, fruit juices and tobacco;

[^9]catering and hotel keeping. As Britain's second largest producer of beer Allied has 6 beer and 2 lager breweries, around 40 hotels and more than 8,000 on and off-licenced premises. In 1973 it acquired the Wine Ways group of beer, wines and spirits retail outlets around 150 shops - from L.R.C. International Ltd., adding them to its then 850 shops trading as Victoria Wine, Tylers and Wine Market. This acquisition is reputed to have made Allied the biggest single off-licence chain in the UK.

Subsidiaries (wholly owned unless otherwise indicated)
Beer and hotels division
Allied Breweries (UK) Ltd.
Allied Breweries (Production) Ltd.
Ansells Ltd.
Ind Coope Ltd. Ind Coope (Scotland) Ltd. Joshua Tetley \& Son Ltd. The Aylesbury Brewery Co. Ltd.

Wines, spirits and soft drinks division
Showerings, Vine Products and Whiteways Ltd.
Britvic Ltd.
Coates Gaymers Ltd.
The Curtis Distillery Co. Ltd. GlenRossie Distillers Ltd. Grants of St. James's Ltd. Harveys of Bristol Ltd.
John Harvey \& Sons Ltd.
John Harvey \& Sons (Espana) Ltd.
Minster (Soft Drinks) Ltd.
Showerings Ltd.
Stewart \& Son of Dundee Ltd.
Victoria Wine Co. Ltd.
Vine Products Ltd.
Whiteways of Whimple Ltd.
William Gaymer \& Son Ltd. The Wine Market Ltd.
Wine Ways (Supermarkets) Ltd. Woolley, Duval \& Beaufoys Ltd. A. Delor \& Cie S.A. (France)

* Cantrell \& Cochrane Group Ltd. (Ireland 50.41 per cent.) Cockburn Smittes \& Cia Limitada (Portugal)

[^10]
## International Division

Allied International Breweries Ltd. Allied Breweries Australian Investments Pty Ltd. (Australia)

Looza S.A.
Allied Investments Ltd.
Skol International Investments Ltd. Skol International Ltd. Ind Coope African Investments Ltd. Skol Brouwerijen NV Erven Warnink BV
(Belgium)
(Bermuda)
(Bermuda 90 per cent.)
(Bermuda 90 per cent.)
(Kenya)
(Netherlands)
(Netherlands)

Associated companies known to be in the beverages industry

* Irish Ale Breweries Ltd.
(Irish Republic 33.3 per cent.)
* The balance of the shares in this company are held by Arthur Guinness Son \& Co. Ltd.

SCOTTISH AND NEWCASTLE BREWERIES LTD.

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 134.3 \mathrm{~m}$. |
| 1972 | $£ 170.6 \mathrm{~m}$. |
| 1974 | $£ 199.7 \mathrm{~m}$. |

## 4.6: $\quad$ The principal activities of Scottish and Newcastle Breweries

Ltd. concern brewing and distilling, ownership and management of hotels, restaurants and public houses, importing, exporting and trading of wines and spirits, the manufacture of frozen foods, and recently property development in the South of France. In the beverages industry they own and operate three breweries and two distilleries, over 60 hotels, 1, 100 managed public houses and 400 leased to tenants. Although trading activities are nationwide the company is based in Scotland and over half of their trade is concentrated in Scotland and the north of England. Overseas markets for beer and whisky extend from North America and Europe to the Middle East and Australasia, and were worth $£ 4.7 \mathrm{~m}$. in 1975.
4.7: $\quad$ Scottish and Newcastle Breweries Ltd. came into being in 1960 with a merger between Scottish Brewers Ltd. and The Newcastle Breweries Ltd. Both firms have very long histories; the former resulted from the amalgamation in 1931 of the breweries of Wm. Younger (formed 1749) and Wm. McEwan (formed 1856), along with several other smaller Scottish breweries, while The Newcastle Breweries Ltd. began life in 1890 when John Barras \& Co. of Gateshead, having already acquired the Tyne Brewery, took over several other small local breweries to form the company. Since the formation of Scottish \& Newcastle Breweries, the company has expanded and diversified, and details of the major developments are listed below:

1961 Mackinlay-McPherson Ltd. was formed by a merger between John E. McPherson \& Sons (formed 1857), Charles Mackinlay \& Co. (formed 1815) and The Newcastle Breweries Wine and Spirit Dept. Until the formation of Waverley Vintners they controlled the wine and spirit interest of the Group.

1965 Thistle Hotels Ltd. was formed to manage the Group's hotels.
1972 Christopher \& Co. Ltd., wine merchants, were bought.
1973 Canongate Wines Ltd. was formed as Agency Company for Waverley Vintners.

1974 Waverley Vintners Ltd. was formed to take over all the Groups wine and spirit interests, including the operation of two Scotch distilleries, exporting and home marketing.

1974 Del Monte Kitchens Ltd. was formed in conjunction with Del Monte Foods Ltd. to supply top quality frozen foods to the UK catering market.

1974 Simi Winery, a USA concern, was bought, but made a loss of $£ 370,000$ in its first year and was sold in 1976.

Subsidiaries
Brewers' Foods Supply Co. Ltd.
Forum Lounge Bars Ltd.
Glenallachie Distillery Co. Ltd. Isle of Jura Distillery Co. Ltd. (72.7 per cent.) Seaforth Catering Ltd. (65.0 per cent.)
Waverley Vintners Ltd.
Canongate Wines Ltd.
Christopher \& Co. Ltd.
Golf Course Hotels Ltd. (51.0 per cent.)
Welcome Inns Ltd.
Scottish \& Newcastle Importers Co. (USA)
Scottish \& Newcastle Vintners Ltd. (USA)
(5 French subsidiary companies also).
Associated companies known to be in the beverages industry
$\begin{array}{ll}\text { *Harp Lager Ltd. } & \text { (32.7 per cent.) } \\ \text { Harp (Ship Stores) Ltd. } & \text { (20.0 per cent.) }\end{array}$

* This is a consortium company for the brewing of lager, other members and their shareholdings are currently:

Arthur Guinness Son and Co. Ltd.
Courage Ltd.
Greene, King and Sons Ltd.
32.67 per cent.

Wolverhampton and Dudley
Breweries Ltd.
32.67 per cent.
<2.0 per cent.
$<2.0$ per cent.

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 343.1 \mathrm{~m}$. |
| 1972 | $£ 440.5 \mathrm{~m}$. |
| 1974 | $£ 572.1 \mathrm{~m}$. |

4.8: Bass Charrington Lrd. was formed through the merger of Bass, Mitchells and Butler and Charrington United Breweries in 1967. Each of these participating companies had themselves evolved from merger and take-over activity: Bass, Mitchells and Butlers was the result of a merger between Bass, Ratcliffe and Gretton Ltd. and Mitchells and Butlers Ltd. in 1961, the latter having acquired Atkinsons Brewery in 1959 and W. Butler \& Co. Ltd. in 1960. In 1965, Bass, Mitchell and Butler acquired Hunt, Edmunds and Co. and Bent's Brewery in 1967. Charrington United Breweries (C.U.B.) was formed through the merger of Charrington and United Breweries in 1963, the latter having been formed through the merger of 3 breweries in 1959, and going on to acquire some 16 companies and their subsidiaries (most of them engaged in beer production) during the next 4 years. C.U.B. acquired J.R. Tennant in 1963, Woodheads Brewery, Old Bushmills Distillery and Lyle and Kinahan in 1964, Dunmow Brewery and Offilers Brewery in 1965 and Massey's Burnley Brewery in 1966. Bass Charrington Ltd. acquired William Hancock \& Co. Ltd. in 1968 and the balance of the outstanding shares it did not own in John Joule and Sons Ltd. in 1970.
4.9: $\quad$ Bass Charrington's principal activities are formally described in their 1975 Annual Report as being "brewing, bottling and malting; the production and factoring of wines and spirits; the production of soft drinks; the supply of all these products to the tied and free trade at home and overseas; and the management of hotels and other licensed properties." General consensus attributes Bass Charrington to be the largest producer of beer in the United Kingdom and is assisted in the
distribution of this and other beverages industry products through its ownership or leasing of around 10,500 licensed properties in the UK and overseas. Exports in 1975 were worth $£ 4.6 \mathrm{~m}$. with the most successful markets for the brewing of the companies products under licence being New Zealand, Guyana and the Irish Republic, with sales of Bass beer representing the market leader for imported beers in Belgium. As well as operating a chain of Crest Motels in the UK and in continental Europe the company has ventures at the retail level in the drinks industry in Sweden, Switzerland and Germany. In 1975 Bass sold its US wine subsidiary, Bass Charrington Vintners (USA) to the Norton Simon organisation. Bass will, however, endeavour to continue to supply the US market with wines through its Bordeaux-based subsidiary, Alexis Lichine et Cie. Bass introduced Tuborg lager to its public houses in the UK towards the end of 1975 after concluding and agreement with United Breweries of Denmark for a franchise to produce this international brand of lager in the UK. The company's soft drinks production is undertaken by its wholly owned subsidiary Canada Dry (UK) Ltd.
4.10: With Bass Charrington Brewers Ltd. as the holding company the principal operating subsidiaries are as follows:

Bass Ltd.

Bass Productions Ltd.

Bass Marketing Ltd.

Regional marketing companies

Beer production and marketing operations in UK.

Managing company for UK beer production

Managing company for all UK regional marketing operations

[^11]Bass Worthington Ltd.
Charrington \& Co. Ltd.
Hewitt Bros. Ltd.
Mitchells and Butlers Ltd.
Tennant Caledonian Breweries Ltd. Welsh Brewers Ltd.

Other subsidiaries and their activities

| Bass Charrington Services Ltd. | Group administration and services |
| :--- | :--- |
| Bass Charrington Vintners Ltd. | Wines and Spirits Holding Company |
| Hedges and Butler Ltd. | Wine and Spirit Shippers and |
| Hedges and Butler (International) Ltd.) | Wholesalers |
| Bass International Ltd. | Overseas Ventures |
| Canada Dry (UK) Ltd. | Soft drink manufacturers and |
|  | Wholesalers |
| Crest Hotels Ltd. | Hotel operations |

Overseas

| Bass Europe N.V. (Holland) | Holding company for European <br> operations, including Crest Hotel <br> operating companies |
| :--- | :--- |
| Bass Continental Finance N.V.(Holland) | European finance operations |
| Bass N.V. (Belgium) | Beer production/marketing |
| Lamot division | operations in Belgium |
| Bass Import Bottlers division | Beer bottlers and wholesalers <br> Crest Hotels division |
| Hotel operations, Belgium |  |
| Socis Lichine et Cie S.A. (France) Viticole de Chateau Lascombes | Wine shippers |
| Siticulture in Margaux |  |
| S.A. (France) |  |

Associated companies
Castleton Brewery Ltd. 36.5 per cent.
Higsons Brewery Ltd. 12.5 per cent.
Maclay \& Co. Ltd. (Scotland) 28.6 per cent.

* Taunton Cider Co. Ltd. 19.3 per cent.

Tollemarche and Cobbold Breweries Ltd. 10.0 per cent.

[^12]ARTHUR GUINNESS SON \& CO. LTD.

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 182.2 \mathrm{~m}$. |
| 1972 | $£ 237.6 \mathrm{~m}$. |
| 1974 | $£ 271.8 \mathrm{~m}$. |

4.11: $\quad$ The principal activities of Guinness, as recorded in their 1974 Annual Report and Accounts can be summarised as brewing, confectionery, general trading, plastics and property. Yet, that the company is foremost a brewer is exemplified by the following analysis of 1974 turnover:

|  | $£ \mathrm{~m}$ |
| :--- | ---: |
| Brewing | 214.3 |
| Confectionery | 6.8 |
| General Trading | 35.0 |
| Plastics | 15.7 |
| Property | $\underline{-}$ |
|  | $\underline{271.8}$ |

4.12: Guinness is perhaps unique in the UK beer trade for a number of reasons; most importantly perhaps in that its past and continuing success is founded upon one product - Guinness Stout; that it controls virtually no outlets and undertakes none of the bottling of its own product. Guinness Stout was first brewed in Dublin, Republic of Ireland in 1759 and a public company was formed in 1886. In 1936 Guinness opened a brewery at Park Royal in West London and whilst this remains operational today Guinness is imported into the UK from Dublin. In addition to the two breweries in Dublin and London there are six others in the World owned and operated by Guinness: the Ikeja Brewery, Nigeria was opened in 1963; the Benin Brewery also in Nigeria was established in 1974 initially for the production of lager; the Sungei Way Brewery, Malaysia was opened in 1966; Guinness Cameroun S.A. was established in 1970 for the brewing of stout and lager; Guinness Ghana - 1972; and Guinness Jamaica - 1974.

The Guinness company also supervises the brewing of its products in other breweries throughout the World and the main product, stout, is sold in 140 countries, many supplied directly by the Dublin brewery. Outside the UK and Irish Republic, the largest market for Guinness has been Belgium, and in 1975 agreements were reached for major German breweries to distribute the product.
4.13: In 1960 Guinness launched a lager in Ireland called Harp and its success led to the establishment of breweries in England under the control of a consortium company, Harp Lager Ltd. When this company was established in 1963 the partners in addition to Guinness were Courage, Barclay and Simonds (now Courage Ltd.), Bass, Mitchell and Butlers (now part of Bass Charrington Ltd.), and Scottish and Newcastle Breweries Ltd. In 1970 Bass withdrew from the consortium and the shareholdings readjusted to give Guinness 50 per cent., Courage 25 per cent., and Scottish and Newcastle 25 per cent. Currently, Guinness holds 32.67 per cent. of the consortium company. *
4.14: The following list of subsidiary companies has been confined to brewing activities:

Holding company incorporated and operating the Republic of Ireland, Arthur Guinness Son and Co. (Dublin) Ltd.

Guinness Group Sales (Ireland) Ltd.
** Irish Ale Breweries Ltd.
Murtagh Properties Ltd.
*** Cantrell and Cochrane Group Ltd. (49.6 per cent.)
Thomas Street Holdings Ltd.
Savage Smyth \& Co. Ltd.
(66.7 per cent.)
(26.0 per cent.)

[^13]Holding company incorporated in England and operating in Great Britain Arthur Guinness Son \& Co. (Park Royal) Ltd.

Guinness Europa B. V. Holland John Bateson \& Co. Ltd.
Dunn \& Moore (Sales) Ltd., Scotland (50.0 per cent.) Guinness Hop Farms Ltd. E.S. Bevan (Maltings) Ltd.

* Taunton Cider Co. Ltd. (28.66 per cent.)

Guinness Overseas Ltd. is the holding company for companies owned and incorporated in the following countries; Nigeria, Malaysia, Cameroun, Ghana, Jamaica, Australia, Canada, Trinidad, Kenya, USA, Liberia, Hong Kong, Thailand, Venezuela, Indonesia, Japan, Seychelles, Sierra Leone

Incorporated and operating in Northern Ireland
Arthur Guinness Son and Co. (Belfast) Ltd.
Irish Bonding Co. Ltd.
Croft Inns Ltd.
(60.0 per cent.)

Consortium companies

| Harp Lager Ltd. | (32.67 per cent.) |
| :--- | :--- |
| * Taunton Cider Co. Ltd. |  |
| $\quad$ (included above) |  |

[^14]Courage Ltd.
28.7 per cent.

Bass Charrington Ltd.
Greene, King \& Sons Ltd.
19.3 per cent.
? per cent.

COURAGE LTD.
(The Brewery Division of Imperial Group Ltd.)

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 136.2 \mathrm{~m}$. |
| 1972 | $£ 174.5 \mathrm{~m}$. |
| 1974 | $£ 222.7 \mathrm{~m}$. |

4.15: The Courage brewery business began in 1787 but the brewing group as known today dates from around 1955 when Barclay Perkins Ltd. joined with Courage to form Courage and Barclay Ltd. In 1960, Courage and Barclay merged with H. and G. Simonds Ltd. and the trading name was changed to Courage, Barclay and Simonds Ltd. In 1961, Georges and Co. Ltd. (Bristol Brewery) was acquired, followed by Clinch and Co., and Harman's Uxbridge Brewery in 1962, Charles Beasley in 1963, Sheffield and District Public House Trust Co. in 1965. This series of acquisitions culminated in a merger with John Smith's Tadcaster Brewery Co. Ltd. in 1970, from which date the company became known as Courage Ltd. In 1971 the Plymouth Breweries Ltd. was acquired together with East Anglian beer, wines and spirits merchant, Herbert Stebbings and Sons Ltd. Back in 1957 the wine merchanting business of Charles Kinloch \& Co. Ltd. was bought and with the acquisition of Simonds Ltd. in 1960, the chain of Arthur Cooper wine merchants were added to the group. In 1973 the Wine Trades Consortium Ltd. was acquired and absorbed within Courage's existing wine, spirit and export trading subsidiary, Saccone and Speed Ltd. Courage Ltd. was acquired by Imperial Group Ltd. in 1972 since which time it has become known as The Courage Group or Brewing Division of Imperial. In 1974, The Courage Group accounted for around 12 per cent. of Imperial Group's external sales.
4.16: The holding company for Imperial's Brewery Division is Courage Ltd., with Courage Brewing Ltd. responsible for co-ordination of the regional brewery companies. The operating companies are as follows:

Courage (Eastern) Ltd.
Courage (Central) Ltd.
Courage (Western) Ltd.
John Smith's Tadcaster Brewery Ltd.
Saccone and Speed Ltd.
Saccone and Speed Services Ltd.
Saccone and Speed UK Sales Ltd.
Arthur Cooper (Wine Merchant) Ltd.
Saccone and Speed International Ltd.

Saccone and Speed Ltd. Gibraltar
Anchor Hotels and Taverns Ltd. H. \& G: Simonds Ltd.
brewers - London
" - Reading
" - Bristol
" - Tadcaster
control of wine and spirit exports and allied operations - London shippers of wines and spirits - London wine and spirit wholesaling - Aylesbury off-licence shops - London export and duty free trade in beers, wines, and spirits and supervision of overseas interests - London
beer, wine and spirit merchants and soft drink manufacturers - Gibraltar hotel operators - London
ownership of industrial properties - London

## Associated companies

Cantrell and Cochrane (G.B.) Ltd.

* Harp Lager Ltd.
** Taunton Cider Co. Ltd.
Courage Brewers Ltd., Australia
Simonds-Farsons-Cisk Ltd., Malta

| Soft drink manufacturers | $(27.5$ per cent.) |
| :--- | :--- |
| lager brewing | (32.7 per cent.) |
| cider-making | (28.7 per cent.) |
| brewers | (41.9 per cent.) |
| brewers | (26.3 per cent.) |

In addition, the year end 31st December 1974 accounts of The
Glenlivet Distillers Ltd. show Courage Ltd. to hold 27.04 per cent. of
Glenlivet's issued ordinary share capital.

* This is a consortium company for the brewing of Harp Lager, the other shareholdings are:
Arthur Guinness Son \& Co. Ltd. 32.7 per cent.
Scottish and Newcastle Breweries Ltd. 32.7 per cent.
Greene, King and Sons Ltd.
Wolverhampton and Dudley Breweries Ltd. <2.0 per cent.
** This is a consortium company for the manufacture and sale of cider, the other shareholdings are:
Arthur Guinness Son \& Co. Ltd. 28.7 per cent.
Bass Charrington Ltd. 19.3 per cent.
Greene, King and Sons Ltd. ? per cent.

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 413.9 \mathrm{~m} \bullet$ |
| 1972 | $£ 450.0 \mathrm{~m}$. |
| 1974 | $£ 617.1 \mathrm{~m}$. |

4.17: The principal activities of The Distillers Co. Ltd. are the production and sale of Scotch whisky, gin, vodka, the manufacture and sale of bakers' yeast and food products and the production and sale of carbon dioxide. Turnover in the accounting year ended March 1974 amounted to $£ 617.1 \mathrm{~m}$. of which sales of whisky, gin, vodka and other potable spirits were $£ 528.6 \mathrm{~m}$. and exports from the UK, $£ 164.3 \mathrm{~m}$.
4.18: Distillers Co. Ltd. is the dominant firm in the UK spirits trade and the chronology of its development through piecemeal acquisition is tabulated below.

18776 Scottish grain whisky distilleries amalgamated to form The Distillers Co. Ltd. (D.C.L.)

1884 D.C.L. entered gin trade through acquisition of Caledonian Whisky Distillers - a London based gin rectifier.

1914 Scottish Malt Distillers Ltd. formed
1915 Coleburn-Glenlivet Distillery jointly acquired by D.C.L. and John Walker \& Co. Ltd.

1915 Buchanan and Dewar merged to form Buchanan-Dewar Ltd.
1916 Dewar, D.C.L., Laurie (a subsidiary of Buchanan) and Walker jointly acquired a company owning four distilleries.

1914-18 D.C.L. acquired J.G. Stewart of Edinburgh and two Glasgow blending houses - John Begg and John Hopkins

1919 D.C.L. acquired John Haig \& Co. Ltd. Scottish Malt Distillers acquired Glenlossie Distillery.

1922 D.C.L. acquired J \& J Vickers (a subsidiary of Bristol Whisky Distillery).
Scottish Malt Distillery acquired North Port Distillery.

1925 Buchanan-Dewar, Walker and D.C.L. amalgamated and continued to trade as D.C.L. D.C.L. acquired Scottish Malt Distillers Ltd.

1927
D.C.L. acquired White Horse Distilleries Ltd.

1933 Scottish Malt Distillers acquired Linkwoods Distillery.
1937 D.C.L. acquired Wm. Sanderson \& Sons Ltd. D.C.L. acquired Booth's Distilleries Ltd. (- the latter having acquired John Watney, a London distiller in 1923 and some 12 distillers (producing/bottling gin or whisky) between the two World Wars).

1944
1963 D.C.L. acquired A \& A Crawford Ltd.
D.C.L. acquired a majority interest in Thos. Hine \& Co. of France - later to become a wholly owned subsidiary changing its name to Hine Cognac S.A.
4.19: Distillers first overseas branch was established in Melbourne, Australia in 1897 and led to the development of the Corio Distillery and formation of United Distillers Pry Ltd. in that country in 1930. In 1961, D.C.L. acquired Australian wine and brandy producer Tolley, Scott and Tolley Ltd. Australia remained D.C.L.'s main export market for Scotch whisky until the end of the Prohibition era in the U.S.A. In 1935 D.C.L. built a gin distillery and bottling plant in the States, followed by a second plant in 1966 and a third in 1971 and today the U.S.A. is D.C.L.'s primary export market for Scotch whisky. The company markets its products world-wide with such sales being made, in the main, to sole distributors appointed for particular territories.
4.20: The following list of Distillers' principal subsidiaries, whose shares are held either directly or indirectly by the company, is confined to the beverages industry.

Scotch Whisky - distillation, blending and marketing
Ainslie \& Heilbron (Distillers) Ltd.
Baird-Taylor Ltd.
John Begg Ltd.
Benmore Distilleries Ltd.
John Bisset \& Co. Ltd. 99.9 per cent.
James Buchanan \& Co. Ltd.
Bulloch Lade \& Co. Ltd.
A. \& A. Crawford Ltd.

Daniel Crawford \& Son Ltd.
Dailuaine-Talisker Distilleries Ltd. 99.9 per cent.
Peter Dawson Ltd.
John Dewar \& Sons Ltd.
Distillers Agency Ltd.
D.C.L. Cooperage Co. Ltd.

Distillers Company (Bottling Services) Ltd.
Donald Fisher Ltd.
John Gillon \& Co. Ltd.
John Haig \& Co. Ltd.
J. \& W. Hardie Ltd. 99.9 per cent.

John \& Robt. Harvey \& Co. Ltd.
John Hopkins \& Co. Ltd.
Low, Robertson \& Co. Ltd. 99.9 per cent.
W.P. Lowrie \& Co. Ltd.
D. \& J. McCallum Ltd.

Macdonald Greenlees Ltd.
John McEwan \& Co. Ltd. 99.9 per cent.
Macleay Duff (Distillers) Ltd.
Mitchell Bros. Ltd.
John Robertson \& Son Ltd. 99.9 per cent.
Wm. Sanderson \& Son Ltd. 99.9 per cent.

Scottish Grain Distillers Ltd.
Scottish Malt Distillers Ltd.
Slater, Rodger \& Co. Ltd.
J. \& G. Stewart Ltd.

Torphold Ltd.
John Walker \& Sons Ltd.
James Watson \& Co.
White Horse Distillers Ltd.

Gin-distillation, rectification and marketing
Boord \& Son Ltd.
Booth's Distilleries Ltd. 99.9 per cent.
Charles Tanqueray \& Co. Ltd.
Tanqueray Gordon \& Co. Ltd.
John Watney \& Co. Ltd.
99.9 per cent.

Other products - production and marketing
John Crabbie \& Co. Ltd. (Ginger wine)
Distillers Company (Malt Products) Ltd.
Pimm's Ltd.
J. \& J. Vickers \& Co. Ltd. (Vodka)

Overseas companies - production and marketing

Country of
incorporation
France
Australia
Canada
U.S.A.

New Zealand U.S.A.

South Africa 88.0 per cent.
England
Canada
Spain
Jamaica
New Zealand
Australia
Australia $\quad 94.5$ per cent.

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 229.9$ |
| 1972 | $£ 605.6$ |
| 1974 | $£ 940.2$ |

4.21: Until April 1973 this Company was known as Grand Metropolitan Hotels Ltd. and until its acquisition in 1971 of the brewers Truman, Hanbury and Buxton Ltd. was primarily engaged in the operation of hotels, catering and entertainment facilities. In 1972, Grand Metropolitan acquired another brewer, Watney Mann L.td. who themselves had acquired International Distillers and Vintners Ltd. earlier that same year. In late 1973 Grand Metropolitan rationalised its brewing and pub/restaurant operations with the formation of Watney Mann and Truman (Holdings) Ltd.

Truman, Hanbury and Buxton Ltd.
4.22: This company was formed in 1889 and acquired the businesses of Michell and Aldous Ltd. in 1920 and Swansea United Breweries Ltd. in 1926. After being taken-over by Grand Metropolitan in 1971 (the result of a take-over battle with Watney Mann) its name was changed to that of Trumans Ltd., and its trade is essentially confined to the London area.

International Distillers and Vintners Ltd. (I.D.V.)
4.23: This division of Grand Metropolitan produces separate accounts and the 1975 Annual Report describes the principal activities as being "the production of wines, the distillation of spirits, the merchandising, wholesaling and retailing of wines and spirits in the UK, the exporting of wines and spirits and the production and distribution of wines and spirits in overseas countries by subsidiary
companies or licenced producers and distributors." Turnover in 1970 was reported as $£ 106.3 \mathrm{~m}$, in 1972 as $£ 175.3 \mathrm{~m}$ and in 1974 as $£ 177.2 \mathrm{~m}$.
4.24: I.D.V. Ltd. was formed in the early 1960s through a merger between W \& A Gilbey Ltd. (estb. 1857) and United Wine Traders Ltd. (estb. 1952). In 1966 a bid for I.D.V. by Showerings (now part of Allied Breweries) was resisted at the expense of Watney Mann acquiring $37 \frac{1}{2}$ per cent. of I.D.V.'s equity capital. In 1972, Watney acquired all of I.D.V.'s shares but were themselves taken over by Grand Metropolitan later that same year.
4.25: $\quad$ As well as the production of Scotch whisky at its 4 distilleries on Speyside, Scotland, I.D.V. also produces gin and vodka in the UK. Its overseas subsidiary companies operate in Australia, New Zealand, Canada, Kenya, Irish Republic, France, Germany, Italy, Mauritius, Portugal, Spain and South Africa. The company not only distributes its products in these countries but imports wines and spirits from them for distribution within the UK. In 1975, the value of goods exported amounted to $£ 30 \mathrm{~m}$.
4.26: Wholly owned I.D.V. subsidiaries operating in the UK are as follows:

```
* Croft and Co. Ltd.
    Peter Dominic Ltd.
* Gilbeys Ltd.
*W \& A Gilbey Ltd.
* Gilbey Vintners Ltd.
    Justerini and Brooks Ltd.
* Morgan Furze \& Co. Ltd.
    Scotch Inventories Ltd.
* Westminster Wine Ltd.
```

[^15]Watney Mann Ltd.
4.27: Watney \& Co. Ltd. was formed in 1885 and joined with Combe \& Co. Ltd. and Reids Brewery Co. Ltd. in 1898 to form one brewing enterprise to be known as Watney Combe Reid \& Co. Ltd. From this base the company grew through a series of acquisitions and mergers to provide for the national distribution of its beers, wines and spirits and the chronology of this development process is set out below.
4.28: Watney Combe Reid \& Co. Ltd. acquired in

1920 Welch Ale Brewery, Chelsea, London.
1923 Cobham United Breweries Ltd. 33 public houses.
1924 Isleworth Brewery, West London.
1929 Huggins \& Co. Ltd.
1942 Wm. Cooper \& Co. Ltd. Southampton.
1947 Crowleys. Alton, Hampshire.
1951 Hammerton \& Co. 200 off-licences.
1953 Tamplin \& Sons, Brighton, Sussex. 400 public houses.
1953 together with Beecham Group Ltd. acquired the franchise for distribution of Coca-Cola in much of G.B.

1955 Henty and Constable's Chichester Brewery Ltd. W.Sussex \& E. Hampshire.
1956 Coca-Cola franchise divided and Coca-Cola Southern Bottlers Ltd. formed as wholly-owned subsidiary of Watneys to trade in southern England.

1958 Merged with Mann, Crossman and Paulin Ltd. and name changed to Watney Mann Ltd.

Watney Mann Ltd. acquired in
1960 Phipps Northampton Brewery Co. Ltd. 1171 public houses within 60 mile radius of Northampton, later to become Watney Mann (Midlands) Ltd.

1960 Ushers Wiltshire Brewery Ltd. 900 public houses and brewery at Trowbridge serving W. England, later to become Watney Mann (West) Ltd.

1960 Wilson and Walker Breweries Ltd. 1124 public houses in Manchester area, later to become Watney Mann (North) Ltd.

1961 Watney Lyon Hotels formed.
1961 Morgans of Norwich and Coca-Cola Eastern Bottles Ltd. was formed.

1965 the two remaining brewers in E. Anglia, Steward and Patterson and Bullard \& Sons.

1966 Dryborough \& Co. Ltd., Edinburgh and McGown and Cameron.

1967 Beverley Bros.
1970 Carlsberg Brewery Ltd. (UK) formed jointly with Carlsberg Breweries of Denmark for development of lager brewery at Northampton. Owned 49 per cent. by Watney and 51 per cent. by Carlsberg.

1972 Sam. Webster Ltd. Halifax.
1972 International Distillers and Vintners Ltd.
1972 Watney Mann Ltd. acquired by Grand Metropolitan Hotels Ltd.

1975 Grand Metropolitan sold 49 per cent. stake in Carlsberg Brewery Ltd. (UK) to United Breweries Ltd. of Denmark.
4.29: As well as brewing beer, and distributing beer, wines and spirits Watney Mann Ltd. was also engaged in the operation of hotels and catering, the latter trading through public houses under names such as St. Georges Taverns, and Schooner Inns. In late 1973 the brewing interests of Watney Mann and the merged catering interests of Watneys and Grand Metropolitan were rationalised through the formation of Watney Mann and Truman (Holdings) Ltd. This holding company has
two subsidiaries, Watney Mann and Truman Brewers Ltd. responsible for the brewing, wholesaling, distribution and marketing of beer, and Chef and Brewer Ltd. responsible for Watneys and Trumans public houses, and Schooner and Berni Inns.
4.30: More recently, however, further rationalisation in this structure has taken place reversing the centralised control of the 1960s and early 1970s whereby nine regional companies operate under the banner of Watney Mann and Truman Brewers Ltd. These nine regions are based on a brewery and/or bottling/distribution depot and are as follows:

```
Dryborough & Co. Ltd. - Central Scotland
Sam. Webster Ltd. - Halifax
Wilsons - Manchester
Watney Mann (Midlands) - Northampton
Watney Mann (West) - Trowbridge, serving West of England
                                    and Wales
Watney Mann (South) - Brighton
Watney Mann (London) - Mortlake brewery, London
Truman Ltd. - Brick Lane Brewery, London
The Norwich Brewery Ltd. - East Anglia
(formerly, Watney Mann
(East Anglia) )
```

4.31: The 1975 Report and Accounts of Grand Metropolitan Ltd. indicate the principal subsidiary companies operating in Great Britain to be:

The Bateman Catering Organisation Ltd. Berni Inns Ltd. Chef and Brewer Ltd. Coca-Cola Southern Bottles Ltd. Dryborough and Company Ltd. Express Dairy Co. Ltd. Grand Metropolitan Hotels Ltd. Holsten Distributors Ltd. International Distillers and Vintners Ltd.

> Mecca Ltd.
> Midland Catering Ltd.
> Samuel Webster \& Sons Ltd.
> Watney International Ltd.
> Watney Mann and Truman Brewers Ltd.
4.32: $\quad$ An analysis of Grand Metropolitan's 1974 external sales is as follows, with the Brewing and Distribution, and Wines and

| Hotels, entertainment, catering <br> and public houses | $\frac{£ m}{319.9}$ |
| :--- | :---: |
| Milk and Food | 204.5 |
| Brewing and Distribution | 122.9 |
| Wines and Spirits | 148.3 |
| Betting and gaming | $\underline{944.6}$ |

Spirits divisions roughly equating to Watney Mann and Truman Brewers and International Distillers and Vintners, respectively.

WHITBREAD \& CO. LTD.

|  | TURNOVER |
| :--- | :--- |
| 1970 | $£ 210.2 \mathrm{~m}$. |
| 1972 | $£ 246.4 \mathrm{~m}$. |
| 1974 | $£ 339.8 \mathrm{~m}$. |

4.33: Whitbread's was established in the brewing industry by Samuel Whitbread in 1742 though it was not until 1889 that a limited company was formed. Depending upon which source one reads today, Whitbreads are credited with being the third or fourth largest brewer in the UK owning over 9,000 public houses, and operating around 350 off-licences trading under the name of Threshers. Whitbread's have been assisted in attaining this position through a policy of acquisition and merger extending over many years. In 1928 the three Kentish breweries of Jude Hanbury \& Co., Frederick Leney \& Sons and Mackeson \& Co. were taken over, and after the Second World War Amey's Brewery and Duke's of Cambridge were acquired. However, Whitbread claim to have "developed the policy of association rather than amalgamation or take-over"*whereby smaller independent brewers could approach Whitbread's for an "association" rather than any suggestion of take-over being at the instigation of Whitbread. The first company to enter the "association" was Andrew Buchan (now Rhymney Breweries) in 1950, and by 1961 some 17 companies controlled over 10,000 public houses between them. It is uncertain for how long such a policy of association lasted, for in 1961, an associated company, Tennant Brothers requested to be fully amalgamated with Whitbreads, who went on to acquire the total issued shares. In similar fashion, Norman and Pring of Exeter and Flowers were amalgamated the following year.
4.34: Some of Whitbread's recent acquisitions are listed below:

[^16]Rhymney Breweries

R. Whitaker and Sons Bentley's Yorkshire Breweries Cobb \& Co. (Brewers) Ltd. Tomson \& Wotton John Young \& Co. Ltd. Strong's of Romsey Ltd. (brewers) R. White \& Sons Ltd. (soft drink manufacturers). Brickwoods Ltd. (brewers) Long John International Ltd. (distillers)

4.35: $\quad$ Although it already has an interest in the spirits industry through an associated company (Grants), Whitbread's acquisition of Long John International in the 3rd Quarter of 1975 for $£ 18.7 \mathrm{~m}$. * represents a significant direct stake in that trade. The implications that this may hold for concentration in the domestic market should be qualified by stating that the acquired company earned 68 per cent. of its profits overseas, with 1974 turnover of around $£ 25 \mathrm{~m}$. Whitbread is also active in the distribution of wines and spirits through its subsidiary Stowells - formed by F.S. Stowell in 1878 and acquired by Whitbread between the Wars - which claimed a turnover of around $£ 60 \mathrm{~m}$. in 1973. In addition, a 79.3 per cent. stake in the equity capital of Langenbach G.m.b.H., German wine producers and merchants, was acquired in 1974 and the company now markets German wine in the UK under the Langenbach brand name. The potential presented by the development of lager sales in the UK has also not been missed, for in 1961 Whitbread entered into an association with Heineken's of Holland for the mutual development of their respective export trades. Other overseas interests of the Company in the brewing and bottling of its beers under licence as well as import and distribution

[^17]arrangements extend from Europe (Belgium and Italy) to New Zealand, Nigeria, the Caribbean and the USA.
4.36: A list of Whitbread's principal subsidiaries is set out below which reflects the Company's regional, national and international interests:

## Subsidiaries

Whitbread East Pennines Ltd.
Whitbread Flowers Ltd.
Whitbread Fremlins Ltd.
Whitbread London Ltd.
Whitbread Scotland Ltd.
Whitbread Wales Ltd.
Whitbread Wessex Ltd. (amalgamation of Brickwoods and Strongs).
Whitbread West Pennines Ltd.
Thomas Wethered \& Sons Ltd.
Whitbread International Ltd.
Stowells of Chelsea Ltd.
Thresher \& Co. Ltd.
Langenbach G.m.b.H. (79.3\%. Registered in W.German Fed.Rep.)
R. White \& Sons Ltd.

Long John International Ltd.
Archibald Campbell Hope \& King Ltd.
Associated companies

| Whitbread Investment Co. Ltd. | (50 per cent.) |
| :--- | :--- |
| Whitbread Trafalgar Properties Ltd. | $(50$ per cent.) |
| Ashton Court Country Club Ltd. | (33 per cent.) |
| Ballindalloch Food Products Ltd. |  |
| Cowe \& Simpson Ltd. | $(25$ per cent.) |
| J.R. Phillips \& Co. Ltd. | $(45$ per cent.) |
| Whitley Inns Ltd. | $(50$ per cent.) |
| Compania Espanola de Licores S.A. | $(26$ per cent.) |
| New Zealand Distillery Co.Ltd. | (17 per cent.) New Zealand |
| Sogebra S.a.r.I. | $(14$ per cent.) Luxembourg |

4.37: In addition to the associated companies listed above, the Company either holds directly or through the Whitbread Investment Co. Ltd. the following proportions of equity capital of other UK beverages companies:

| Border Breweries (Wrexham) Ltd. | (17.0 per cent.) |
| :--- | :--- |
| W.H. Brakspear \& Sons Ltd. | $(27.0$ per cent.) |
| William Grant \& Sons (Standfast) Ltd. | $(30.0$ per cent.) |
| J.A. Devenish \& Co. Ltd. | $(23.7$ per cent.) |
| Boddingtons Breweries Ltd. | $(26.4$ per cent.) |
| Morland \& Co. Ltd. | $(39.32$ per cent.) |
| Marston, Thompson and Evershed Ltd. | $(33.2$ per cent.) |
| Buckley's Brewery Ltd. | $(20.0$ per cent.) |

## 5: MEASURES OF CONCENTRATION

Composition of the Sample
5.1: $\quad$ The determination of Linda Indices ( $L$ ) and Concentration Ratios (CR) as applied to the U.K. beverages industry are required to be based upon a sample of the firms operating in that industry. This entails the analysis of financial accounting data on individual enterprises and the source from which such data has been extracted, is the system of standardised company accounts maintained by the Companies Division of the Department of Trade. The enterprises which fall within the definition of the beverages industry are classified by the Department of Trade under two headings; namely, "brewing/ malting and soft drinks" and "other drink industries", the latter being primarily engaged in the spirits trades. The criteria for inclusion in the Companies Division records is that a particular enterprise had in 1968 net assets of $£ 2 \mathrm{~m}$ or more and/or gross income of $£ 200,000$ and over, and with that definition in mind the number of enterprises that comprise the sample are presented in Table 5.1 which differentiates between brewers, spirit distillers and compounders and soft drinks' manufacturers.
5.2: The number of companies forming the sample in each year between 1969 and 1974 includes both enterprises and units of economic activity, the latter conforming to the EEC definition. ${ }^{+}$Part (i) of Table 5.1 shows that the sample declined from 72 firms in 1969 to 63 in 1974 with the disappearance of 6 brewers, 2 spirits' manufacturers and 1 soft drinks manufacturer.

## Change in Composition of the Sample

## 5.3: $\quad$ The fall in the sample size between 1969 and 1974 is

 entirely attributable to take-over activity amongst the sample firms rather than being due to any re-basing or reclassifying by the Department of Trade. The first acquisition occurred in 1970 when Hill Thompson \& Co. were[^18]acquired by Glen Grant Distilleries. The following year, Truman, Hanbury and Buxton were acquired by Grand Metropolitan Hotels Ltd. (as they were then named), Brickwoods Ltd. by Whitbread \& Co., and the Plymouth Breweries were taken over by Courage Ltd. Until their take-over of Trumans in 1971 Grand Metropolitan Hotels Ltd. had no direct interest in the U.K. beverages industry. However, by virtue of this acquisition and the ir take-over activity in subsequent years which placed them in a prominent role in the beverages industry, Grand Metropolitan are introduced to the sample as a new entrant in 1971. During 1972 Watney-Mann acquired Samuel Webster \& Sons Ltd. and International Distillers and Vintners Ltd. (I.D.V.), but Watney's were then themselves taken over by Grand Metropolitan Ltd. (as they are now known). The Hull Brewery Ltd. was acquired in 1972 by an enterprise outside the Beverages industry, Northern Foods Ltd. - an enterprise which was included in our study of the U.K. Food Processing industry. * Also during 1972, Tizer Ltd., a soft drinks' manufacturer was acquired by A.G. Barr another manufacturer of soft drinks and the Aylesbury Brewery Co. Ltd. was acquired by Allied Breweries Ltd. In this same year the Imperial Group Ltd., a diversified concern with extensive interests in the tobacco, food processing, distributive trades, and paper, board, packaging and plastics industries acquired Courage Ltd. and because of this take-over Courage technically qualify as a unit of economic activity in subsequent years, the appropriate variables remaining capable of being separately identified.

The Variables and their Values used as Input for the Sample
5.4: The EEC requires measures of concentration to be calculated in relation to particular variables for each company in the sample. For this study nine variables have been considered and are listed below together with definitions where clarification is necessary.

[^19]| (01) Turnover | Total sales, excluding inter-group sales. |
| :--- | :--- | :--- |
| (02) Employment |  |
| (03) Wages and Salaries |  |
| (04) Net Profit | Cash Flow, less depreciation provisions, i.e. <br> net profit before tax |
| (05) Cash Flow | The definition used here is that given to us by <br> the EEC. It is a gross cash flow comprising <br> gross trading profits (after charging directors <br> fees and emoluments, pensions to past <br> directors, superannuation payments, <br> compensation for loss of office, auditors' <br> fees etc.) and other income (from investments <br> and other sources) before allowing for <br> depreciation provisions, plus prior year <br> adjustments other than tax, less hire of plant. <br> Net expenditure on tangible fixed assets. |
| (06) Gross Investments | This EEC term is given as the sum of issued <br> ordinary and preference share capital plus <br> total reserved. |
| (07) Own Means | are fixed assets, after deduction of depreciation <br> plus total current assets, less total current <br> assets, less total current liabilities. |
| (11) Net Assets | is taken as the sum of Cash Flow (05) and <br> Wages and Salaries (03). |
| (12) Value Added |  |

5.5: $\quad$ The total values of each of these variables used as input in each year 1969-74 are shown in Table 5.2, together with the number of companies to which the data refer given in parenthesis. Any difference between the sample size and the figure shown in parenthesis indicates the number of companies in any one year for which data were not available for that particular variable. The incidence of this non-availability affects four variables; that is, employment, wages and salaries, gross investments, and value added. The reason is that the Companies Act does not require wholly owned subsidiaries to disclose employment and wages and salaries data in their annual reports and accounts. Thus, by definition if wages and salaries remain unknown then value added cannot be determined. In addition, there
are two companies included in the sample throughout the study period for which no data on any of the variables are available in 1974. Both of these are Scottish distillers whose accounts at the time data were extracted had not been made available to the Companies Division staff for analysis.

Qualifications concerning the input data
5.6: It must be stressed that the values for each of the variables extracted for individual companies are in many cases generated from activities which embrace more than just operations within the Beverages industry. Many brewers, in particular, are also engaged in the management of hotels, restaurants and allied entertainment facilities as well as in the retail distribution of their own and other industries alcoholic and nonalcoholic drinks. In addition, Arthur Guinness Son \& Co. Ltd. are, according to their annual report and accounts, engaged in confectionery, property, plastics and general trading; H.P. Bulmer Ltd. are major manufacturers of pectin; and The Distillers Company Ltd. is engaged in the manufacture and sale of bakers yeast and carbon dioxide. However, the most significant example of a company with diverse interests whose total results have been included in this study is Grand Metropolitan Ltd. Through takeover activities this company has achieved a substantial interest in the U.K. beverages industry, but it is also engaged in the production and distribution of milk and food products, betting and gaming, and the operation of hotels, entertainment, catering and public houses. It has not proved possible to extract from this Company's accounts the values of the required variables which relate solely to beverages although turnover derived from brewing and distribution and wines and spirits was at least $£ 271.2 \mathrm{~m}$ (or 28.8 per cent.) out of a total turnover of $£ 940.2 \mathrm{~m}$ in 1974. In relation to drinks turnover, therefore, Grand Metropolitan would rank sixth amongst the sample of beverages firms in 1974. However, it has been included in this sample on the basis of total turnover whereby it ranked fourth in 1971 and first in each subsequent year of the study period. It was considered preferable to do this rather than leave the company out of the sample altogether.
5.7: With the above qualifications in mind, therefore, the data set out in Table 5.2 show beverages turnover to have increased by $£ 2,245.0 \mathrm{~m}$ between 1969 and 1974, or by 94.4 per cent. Despite the decline in the sample size total employment increased by 107,500 during the same period whilst the number of persons employed on average per company rose from 4166 in 1969 to 6954 in 1974, an increase of just under 67 per cent. Of the financial measures, net profits showed the least dramatic growth at 61.8 per cent. over the 6 years, whilst value added grew 2.06 times and for gross investments the growth factor was 2.84. As a relative size measure the value of turnover per sample company more than doubled to stand at $£ 75.8 \mathrm{~m}$ in 1974. The following unit size measures also more or less doubled during the period: net profit, cash flow, gross investments, own means, net assets, and value added, whilst wages and salaries per company more than trebled.

## The Direction and Change in Concentration

5.8: The remaining paragraphs of this section are concerned with determining the direction and extent of change (if any) in the level of concentration in the beverages industry between 1969 and 1974 as measured by the traditional Concentration Ratio (CR) and in the degree of oligopolistic inequality as measured by the Linda Index (L).
5.9: The financial variables on individual companies summarised in Table 5.2 have been used by the EEC computer program to generate numerous measures of concentration which are reproduced here in Appendix 3. For ease of reference, Table 5.3 presents selected concentration ratios $\left(C_{4}, 8,10, \ldots . C R_{40}\right)$ for 1969 and 1974 which have been extracted directly from Appendix 3, Table 3. Similarly, Linda Indices ( $L_{4}, 8,10, \ldots . L_{40}$ ) have also been extracted from the same Appendix table and appear here as Table 5.4.
5.10: It can be seen quite clearly from Table 5.3 that for each variable and across successively larger $C R_{N} / s$ concentration has increased between 1969 and 1974, although it remains, however, to assess to what extent these changes are significant. Table 5.4, on the other hand, shows that for each variable between $L_{10}$ and $L_{40}$ the associated value of the Linda Index was greater in 1974 than its respective measure in 1969, implying an increase in disparity amongst the largest $10,12,20,30$ and 40 firms. In the case of $L_{4}$, four variables in 1974 show smaller values of $L$ than in 1969; namely, turnover, net profit, cash flow, and gross investments. For $L_{8}$, only one variable, gross investments, shows a smaller value in 1974 compared with 1969. Thus, we have an apparent incongruity, whereby, for example, $L_{4}$, on turnover falls from 0.371 in 1969 to 0.355 in 1974 but $\mathrm{CR}_{4}$ increases from 51.8 per cent. to 59.5 per cent. over the same period. It would appear, therefore, that whilst the share of total sales attributable to the 4 largest enterprises has increased, there has been a shift in the distribution of that share between the top 4 and this is exemplified by the coefficient of disparity (4L) which fell from 1484 in 1969 to 1421 in 1974. This is no doubt a reflection of market performance which will be the subject of individual product market studies (beer, wines and spirits, and soft drinks) scheduled to follow this report.
5.11: The difference between the concentration ratios in 1974 and 1969 presented in Table 5.3 certainly appear large enough to provide prima facie evidence for us to conclude that concentration within the beverages industry increased between 1969 and 1974. Nevertheless, it remains for such a conclusion to be tested statistically and we may argue via the Central Limit Theorem that the sampling distribution of the average concentration ratio of all variables for one year tends to normality. * This implies that the sampling distribution of the mean difference, $\overline{\mathrm{D}}_{\mathrm{CN}}=\overline{C R}_{N}(1974)-\overline{C R}_{N}(1969)$, is also normal. By taking the variance of the difference $C_{N}, i^{(1974)}-$ $C R_{N, i}(1969)$ across all 9 variables $(i=1, \ldots . . .7,11,12)$ the standard

[^20]errors of $\overline{\mathrm{D}}_{\mathrm{CN}}(\mathrm{N}=4,8,10,12,20,30,40)$ can be determined. These are presented in Table 5.5 against their respective means for $\mathrm{CR}_{(4 \ldots \ldots 40)}$ and show for each level of CR identified that the positive mean increases in concentration between 1969 and 1974, across all variables considered are significant and can be accounted for by more than just chance sampling errors.
5.12: $\quad$ The average value of the Linda Index $\left(\mathrm{L}_{s}\right)$ is based upon the number of firms located in the oligopolistic arena; that is, between the maximum value ( $L_{n_{h}^{*}}^{*}$ ) and the minimum value ( $L_{n_{m}}^{*}$ ) of a series of Linda Indices for all ${ }_{n}^{*}$ hypotheses for a particular variable in any particular year. Knowing the values of $L_{s}$ in 1969 and 1974 for each variable combined with the ir respective variances makes it possible to test for any significant change in the degree of disparity amongst the leading firms of the industry. Table 5.6 sets out the comparative values of $L_{s}$ in 1969 and 1974 for each variable together with their standard errors (in parenthesis) and the minimum point ( $\mathrm{n}_{\mathrm{m}}^{*}$ ) of each Linda series. ${ }^{+}$The number of firms at $n_{m}^{*}$ is indicative of the number of firms in the oligopolistic arena and this can be seen not to have changed for four of the variables between 1969 and 1974. In each of these four cases the value of $L_{s}(1974)>L_{s}$ (1969) and points to an increasing size disparity amongst firms in the oligopolistic arena. For the other five variables where $n_{m}^{*}$ (1974) < $n_{m}^{*}$ (1969) two show $L_{s}(1974)>L_{s}(1969)$ and three have $L_{s}(1974)$ $<\mathrm{L}_{s}(1969)$. The extent to which these changes in $\mathrm{L}_{\mathrm{s}}$ are significant have been tested statistically and show that no variable had a value of $L_{s}$ which was significantly different in 1974 from what it was in 1969.
5.13: It may be suggested that the distribution of $L_{s}$ is not normal and therefore the foregoing tests are unreliable. However, the distribution of $L_{s}^{*}$ is normal, where $L_{s}^{*}$ is the mean of all Linda Indices for $\mathrm{L}_{\mathrm{N}}^{*}$ hypotheses, and its variance and standard error can be calculated enabling

[^21]confidence limits to be set to test the significance of any change between $L_{s}^{*}$ (1974) and $L_{s}^{*}$ (1969). Table 5.7 shows $L_{s}^{*}$ in 1969 and 1974 for each variable together with the standard errors. With only one exception, gross investments, all $L_{s}^{*}$ (1974) are significantly different from $L_{s}^{*}(1969)$ at the 95 per cent. confidence level.
5.14: The results of the analysis at this stage indicate there to have been no significant change in the degree of disparity amongst leading firms in the industry between 1969 and 1974, but that across the whole distribution of Linda Indices there has been, excepting one variable, a significant change. As well as identifying the overall magnitude and direction of change in $L_{s}$ and $L_{s}^{*}$ between 1969 and 1974 the test applied earlier to the concentration ratios can be used with $L_{s}$ and $L_{s}^{*}$; that is, to assess the mean difference between $L_{s_{i}}(1974)-L_{s_{i}}$ (1969) and $L_{s_{i}}^{*}(1974)-L_{s_{i}}^{*}$ (1969) across all 9 variables. These results are presented in Table 5.8 where in part (i) the mean difference between $L_{s}$ in 1974 and 1969 of +0.0590 can be seen to be of little significance in relation to its standard error, and that in part (ii) the mean difference between $L_{s}^{*}$ in 1974 and 1969 of +0.1171 does appear to be significant.
5.15: $\quad$ The dynamic effects upon Linda Indices and concentration ratios of changes in rank order have not been fully considered in this section but the likelihood that these could be significant can be gauged by looking at the impact of admitting Grand Metropolitan to the sample in 1971. It will be remembered that the whole of this company's activities were included in the values of the input variables and on this basis and in relation to turnover Grand Metropolitan enters the sample in 1971 as the fourth largest enterprise. However, by 1974 Grand Metropolitan ranks first for 7 out of all 9 variables, the exceptions being net profit and cash flow.
5.16: A comparison of concentration ratios $\left(\mathrm{CR}_{4}\right)$ and Linda Indices ( $\mathrm{L}_{4}$ ) for turnover in 1970, 1971 and 1974 are given in Table 5.9 from which it can be seen that upon the entry of Grand Metropolitan in $1971 \mathrm{CR}_{4}$
falls to 49.15 per cent. and for $\mathrm{L}_{4}$ the index becomes 0.31350 . The reason for the fall of 2.71 percentage points in $\mathrm{CR}_{4}$ between 1970 and 1971 is in the value of Grand Metropolitan's turnover relative to the three other firms in the numerator of $C_{4}$ as well as the firm that it replaces in fourth position. Indeed, the relegation to fifth place of one firm through the entry of Grand Metropolitan allows for the concentration ratio for firms in the interval $L_{8}-L_{4}$ to increase from 23.45 per cent. in 1970 to 25.22 per cent. in 1971. Similarly, the large fall in the value of $\mathrm{L}_{4}$, from 0.38138 in 1970 to 0.31350 in 1971 is accounted for by a narrowing in the relative size differential between the turnovers of the 4 largest firms.
5.17: That part of Grand Metropolitan's 1971 turnover derived from beverages activity can be estimated in relation to the 1971 turnover of the beverages company it acquired in that year; namely, Truman, Hanbury and Buxton Ltd. In 1971 Truman's (a brewer) beverage's turnover was around $£ 30.0 \mathrm{~m}$ * and using this figure alone would place, what we may call for clarity "Grand Metropolitan (Beverages)" in about fourteenth position. On this basis the values of $C R_{4}$ and $L_{4}$ in 1971 can be re-worked and are shown in Table 5.10 and may be compared with the data for the same year in Table 5.9. From this comparison it appears that the recalculated $\mathrm{CR}_{4}$ at 51.74 per cent. in 1971 could be significantly greater than the computer derived measure of 49.15 per cent. for that same year, but may not be significantly different from the computer based figure of 51.86 per cent. for the previous year. The recalculated $L_{4}$, on the other hand, shows a greater degree of disparity amongst the top 4 firms in 1971 than does the 1971 value using the total of Grand Metropolitan's turnover. Furthermore, a comparison between the 1970 value of $L_{4}$ and the recalculated $L_{4}$ for 1971 points towards a reduction in the extent of oligopolistic inequality amongst the industry's larger operators.
5.18: In addition to re-working the 1971 concentration ratio and Linda Index on turnover it is possible to repeat the exercise in relation to Grand Metropolitan's known minimum beverages turnover of $£ 271.2 \mathrm{~m}$ in 1974

[^22](see para. 5.6). On this basis, "Grand Metropolitan (Beverages)" would in that year rank sixth rather than first on turnover, and the results of the recalculation for both $C R_{4} / L_{4}$ and $C R_{6} / L_{6}$ are presented in Table 5.11. This shows notable differences in the level of concentration as measured by $\mathrm{CR}_{4}$ and $\mathrm{CR}_{6}$ in 1974 to the extent that the recalculated $\mathrm{CR}_{4}$ is 5.45 per cent. less than the computer based assessment of 59.54 per cent. and that at $C R_{6}$ the difference is 4.84 per cent. less. At $L_{4}$ the recalculation produces a marginal increase in this value whilst at $L_{6}$ there is a more than marginal decline in the index of disparity.

## Conclusion

5.19: The statistical analysis concluded at paragraph 5.14 demonstrated that concentration across all firms in the industry had increased between 1969 and 1974. In relation to both concentration ratios (CR) and Linda Indices (L) the magnitudes of such changes were identified and shown to be statistically significant. There was, however, less certainty attached to the extent of changes in CR and Lamongst the firms located within the oligopolistic arena. Nevertheless, such conclusions on the size and direction of change in concentration need to be qualified by the remarks made in the preceding five paragraphs; namely, that the inclusion of data on variables for one firm which is heavily engaged in activities other than just beverages can produce misleading results. The more likely evolution of concentration in the beverages industry can be summarised in relation to the data presented for turnover alone in Table 5.12 which sets out the computer based data for 1969 and 1970 against the recalculated measures for 1971 and 1974. This shows sales concentration at $\mathrm{CR}_{4}$ and $\mathrm{CR}_{6}$ to have increased from 51.83 per cent. to 54.09 per cent. and from 64.72 per cent. to 67.92 per cent., respectively, between 1969 and 1974. The trend at $\mathrm{L}_{4}$ and $\mathrm{L}_{6}$, however, is the reverse with the index of disparity amongst the 4 largest concerns declining from 0.37104 in 1969 to 0.35890 in 1974, and amongst the 6 largest falling from 0.31210 to 0.2972 over the same period.

TABLE 5.1
Composition of the Sample
(i) as between Brewers, Spirit and Soft Drink Manufacturers

|  | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
| :--- | ---: | :---: | :---: | :---: | :---: | :---: |
|  | Brewers (incl. Cider) | 48 | 48 | 46 | 42 | 42 |
| Spirits | 20 | 19 | 19 | 18 | 18 | 18 |
| Soft Drinks | 4 | 4 | 4 | 3 | 3 | 3 |
|  | 72 | 71 | 69 | 63 | 63 | 63 |

(ii) as between Enterprises and Units of Economic Activity

Number of Enterprises

| 70 | 70 | 70 | 60 | 60 | 60 |
| ---: | ---: | ---: | ---: | ---: | ---: |
| 2 | 2 | 2 | 3 | 3 | 3 |

TABLE 5.2
Financial Data for the Beverages Industry


TABLE 5.3
Selected Concentration Ratios $\left(\mathrm{CR}_{4} \ldots \mathrm{CR}_{40}\right) 1969$ and 1974

|  | $\mathrm{CR}_{4}$ | $\mathrm{CR}_{8}$ | $\mathrm{CR}_{10}$ | $\mathrm{CR}_{12}$ | $\mathrm{CR}_{20}$ | $\mathrm{CR}_{30}$ | $\mathrm{CR}_{40}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| (01) Turnover | 51.8 | 74.5 | 80.0 | 82.4 | 89.3 | 93.1 | 95.6 |
| (02) Employment | 56.3 | 77.9 | 81.2 | 83.9 | 89.2 | 93.4 | 96.3 |
| (03) Wages \& Salaries | 53.0 | 78.1 | 81.5 | 84.0 | 89.3 | 93.2 | 95.9 |
| (04) Net Profit | 52.7 | 74.3 | 79.7 | 82.4 | 88.9 | 93.2 | 95.9 |
| (05) Cash Flow | 52.1 | 74.8 | 79.8 | 82.5 | 88.9 | 93.1 | 95.9 |
| (06) Gross Investments | 55.6 | 76.6 | 80.4 | 83.6 | 89.9 | 94.2 | 97.2 |
| (07) Own Means | 54.7 | 75.8 | 80.1 | 83.0 | 88.7 | 92.9 | 95.7 |
| (11) Net Assets | 56.1 | 78.6 | 82.4 | 84.9 | 90.2 | 94.0 | 96.4 |
| (12) Value Added | 51.9 | 76.3 | 80.4 | 83.2 | 89.1 | 93.0 | 95.7 |


|  |  |  |  |  | 1974 |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: | :---: |
|  | $\mathrm{CR}_{4}$ | $\mathrm{CR}_{8}$ | $\mathrm{CR}_{10}$ | $\mathrm{CR}_{12}$ | $\mathrm{CR}_{20}$ | $\mathrm{CR}_{30}$ | $\mathrm{CR}_{40}$ |  |  |
| (01) Turnover | 59.5 | 81.9 | 84.9 | 87.3 | 92.5 | 95.3 | 97.4 |  |  |
| (02) Employment | 64.1 | 85.9 | 88.5 | 90.1 | 93.8 | 96.7 | 98.5 |  |  |
| (03) Wages \& Salaries | 62.8 | 85.9 | 88.3 | 89.8 | 93.5 | 96.2 | 98.2 |  |  |
| (04) Net Profit | 59.0 | 79.6 | 83.4 | 85.7 | 90.8 | 94.9 | 97.4 |  |  |
| (05) Cash Flow | 58.4 | 80.3 | 83.8 | 86.1 | 91.0 | 95.0 | 97.4 |  |  |
| (06) Gross Investments | 57.3 | 80.8 | 83.7 | 86.1 | 91.9 | 96.1 | 98.5 |  |  |
| (07) Own Means | 63.3 | 83.6 | 86.9 | 89.0 | 92.8 | 95.7 | 97.9 |  |  |
| (11) Net Assets | 60.9 | 84.0 | 87.1 | 89.2 | 92.9 | 95.7 | 97.8 |  |  |
| (12) Value Added | 59.9 | 83.7 | 86.5 | 88.6 | 92.3 | 95.6 | 97.9 |  |  |
|  |  |  |  |  |  |  |  |  |  |

## TABLE 5.4

Selected Linda Indices ( $\mathrm{L}_{4} \ldots \mathrm{~L}_{40}$ ) 1969 and 1974

|  |  |  |  |  | 1969 |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
|  | $\mathrm{~L}_{4}$ | $\mathrm{~L}_{8}$ | $\mathrm{~L}_{10}$ | $\mathrm{~L}_{12}$ | $\mathrm{~L}_{20}$ | $\mathrm{~L}_{30}$ | $\mathrm{~L}_{40}$ |  |
| (01) Turnover | .371 | .268 | .319 | .362 | .350 | .350 | .319 |  |
| (02) Employment | .460 | .362 | .427 | .424 | .460 | .373 | .315 |  |
| (03) Wages \& Salaries | .372 | .287 | .373 | .395 | .441 | .382 | .323 |  |
| (04) Net Profit | .510 | .308 | .318 | .359 | .373 | .334 | .310 |  |
| (05) Cash Flow | .465 | .284 | .313 | .359 | .372 | .342 | .307 |  |
| (06) Gross Investments | .621 | .387 | .410 | .397 | .396 | .356 | .304 |  |
| (07) Own Means | .407 | .321 | .356 | .377 | .409 | .350 | .307 |  |
| (11) Net Assets | .324 | .325 | .373 | .410 | .463 | .398 | .355 |  |
| (12) Value Added | .338 | .253 | .327 | .353 | .399 | .359 | .310 |  |


|  | 1974 |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $\mathrm{~L}_{4}$ | $\mathrm{~L}_{8}$ | $\mathrm{~L}_{10}$ | $\mathrm{~L}_{12}$ | $\mathrm{~L}_{20}$ | $\mathrm{~L}_{30}$ | $\mathrm{~L}_{40}$ |
| (01) Turnover | .355 | .311 | .419 | .443 | .501 | .483 | .416 |
| (02) Employment | .494 | .412 | .536 | .651 | .659 | .551 | .491 |
| (03) Wages \& Salaries | .458 | .362 | .526 | .616 | .672 | .568 | .474 |
| (04) Net Profit | .306 | .317 | .385 | .436 | .463 | .382 | .347 |
| (05) Cash Flow | .283 | .286 | .378 | .433 | .475 | .390 | .357 |
| (06) Gross Investments | .406 | .364 | .439 | .458 | .441 | .373 | .355 |
| (07) Own Means | .484 | .419 | .483 | .453 | .632 | .524 | .445 |
| (11) Net Assets | .372 | .344 | .448 | .509 | .616 | .526 | .450 |
| (12) Value Added | .354 | .303 | .434 | .478 | .605 | .479 | .405 |

## TABLE 5.5

Mean and Standard Error of $C R_{N, i}(1974)-C R_{N, i}{ }^{(1969)}$.

| $\mathrm{CR}_{\mathrm{N}}$ | $\overline{\mathrm{D}}_{\mathrm{CN}}$ | Standard Error |
| :--- | :--- | :--- |
| $\mathrm{CR}_{4}$ | +6.76 | 0.804 |
| $\mathrm{CR}_{8}$ | +6.54 | 0.474 |
| $\mathrm{CR}_{10}$ | +5.28 | 0.496 |
| $\mathrm{CR}_{12}$ | +4.66 | 0.433 |
| $\mathrm{CR}_{20}$ | +3.09 | 0.336 |
| $\mathrm{CR}_{30}$ | +2.37 | 0.198 |
| $\mathrm{CR}_{40}$ | +1.82 | 0.124 |

TABLE 5.6
Comparison between $L_{s(1969)}$ and $L_{s(1974)}$ for each variable

| VARIABLE | $L_{s}(1969)$ |  | $L_{s}(1974)$ |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $n_{m}^{*}$ | Value | $\mathrm{n}_{\mathrm{m}}^{*}$ | Value |
| (01) Turnover | 9 | $\begin{gathered} 0.3454 \\ (0.0323) \end{gathered}$ | 8 | $\begin{gathered} 0.4228 \\ (0.0644) \end{gathered}$ |
| (02) Employment | 7 | $\begin{gathered} 0.4545 \\ (0.0489) \end{gathered}$ | 7 | $\begin{gathered} 0.4897 \\ (0.0588) \end{gathered}$ |
| (03) Wages \& Salaries | 7 | $\begin{gathered} 0.3603 \\ (0.0384) \end{gathered}$ | 7 | $\begin{gathered} 0.5204 \\ (0.0962 .) \end{gathered}$ |
| (04) Net Profit | 9 | $\begin{gathered} 0.4446 \\ (0.0551) \end{gathered}$ | 4 | $\begin{array}{r} 0.4348 \\ (0.0818 \end{array}$ |
| (05) Cash Flow | 8 | $\begin{gathered} .4245 \\ (0.0497) \end{gathered}$ | 4 | $\begin{array}{r} .3908 \\ (0.0707) \end{array}$ |
| (06) Gross Investments | 8 | $\begin{gathered} .6247 \\ (0.1170) \end{gathered}$ | 7 | $\begin{gathered} .4579 \\ (0.0834) \end{gathered}$ |
| (07) Own Means | 8 | $\begin{gathered} .4015 \\ (0.0411) \end{gathered}$ | 5 | $\begin{gathered} .6972 \\ (0.1837) \end{gathered}$ |
| (11) Net Assets | 5 | $\begin{gathered} .3624 \\ (0.0480) \end{gathered}$ | 5 | $\begin{gathered} .4937 \\ (0.1042) \end{gathered}$ |
| (12) Value Added | 8 | $\begin{gathered} .3388 \\ (0.0372) \end{gathered}$ | 8 | $\begin{gathered} .4002 \\ (0.0553) \end{gathered}$ |

## TABLE 5.7

Comparison between $L_{s}^{*}(1969)$ and $L_{s}^{*}(1974)$ for each Variable

| VARIABLE | $L_{s}^{*}(1969)$ | $L_{s}^{*}(1974)$ |
| :--- | :---: | :---: |
|  | Value | Value |
|  | 0.3180 | 0.4321 |
| (02) Employment | $(0.0057)$ | $(0.0988)$ |
|  | 0.3562 | 0.5448 |
| (03) Wages \& Salaries | $(0.0097)$ | $0.0123)$ |
|  | 0.3444 | 0.5379 |
| (04) Net Profit | $(0.0081$ | $(0.0139)$ |
|  | 0.3284 | 0.3792 |
| (05) Cash Flow | $(0.0088)$ | $0.0075)$ |
|  | 0.3241 | $(0.0075)$ |
| (06) Gross Investments | $(0.0075)$ | 0.4047 |
|  | 0.3807 | $(0.0105)$ |
| (07) Own Means | $(0.0165)$ | 0.5095 |
|  | 0.3398 | $(0.0162)$ |
| (11) Net Assets | $(0.0114)$ | 0.4854 |
|  | 0.3632 | $(0.0121)$ |
| (12) Value Added | $(0.0066)$ | 0.4577 |
|  | 0.3230 | $(0.0132)$ |

TABLE 5.8
(i) Mean Difference between $L_{s}$ (1974) and $L_{s(1969)}$, and Standard Error

| Mean Difference |  |
| :---: | :---: |
| +0.0590 | $\frac{\text { Standard Error }}{0.044}$ |

$\qquad$
(ii) Mean Difference between $L_{s}^{*}(1974)$ and $L_{s}^{*}(1969)$, and Standard Error

| Mean Difference | Standard Error |
| :---: | :---: |
| +0.1171 | 0.035 |

Comparison of $\mathrm{CR}_{4}$ and $\mathrm{L}_{4}$ on Turnover, 1970, 1971 and 1974

|  | 1970 | 1971 | 1974 |
| :--- | :---: | :---: | :---: |
| Concentration Ratio, $\mathrm{CR}_{4}$ | $51.86 \%$ | $49.15 \%$ | $59.54 \%$ |
| Index of Disparity, $\mathrm{L}_{4}$ | .38138 | .31350 | .35523 |

SOURCE: Appendix 3, Table 3a.

TABLE 5.10
Recalculated $\mathrm{CR}_{4}$ and $\mathrm{L}_{4}$ on Turnover, 1971

| Concentration Ratio, $\mathrm{CR}_{4}$ | $51.74 \%$ |
| :--- | :---: |
| Index of Disparity, $\mathrm{L}_{4}$ | .35850 |

## TABLE 5.11

Recalculated $\mathrm{CR}_{4} / \mathrm{L}_{4}$ and $\mathrm{CR}_{6} / \mathrm{L}_{6}$ on Turnover, 1974
Derived by computer on
basis of Grand Metropolitan's
Total turnover

Recalculated using
Grand Metropolitan's
Beverages only turnover

| $\mathrm{CR}_{4}$ | $59.54 \%$ | $54.09 \%$ |
| :--- | :--- | :--- |
| $\mathrm{~L}_{4}$ | .3552 | .3589 |
| $\mathrm{CR}_{6}$ | $72.76 \%$ | $67.92 \%$ |
| $\mathrm{~L}_{6}$ | .3393 | .2972 |

TABLE 5.12
Measures of $\mathrm{CR}_{4} / L_{4}$ and $\mathrm{CR}_{6} / L_{6}$ on Turnover, 1969-71, and 1974

|  | Computer based |  | Recalculated |  |
| :--- | :--- | :--- | :--- | :--- |
|  | 1969 | 1970 | 1971 | 1974 |
| $\mathrm{CR}_{4}$ | 51.83 | 51.86 | 51.74 | 54.09 |
| $\mathrm{~L}_{4}$ | .37104 | .38138 | .35850 | .3589 |
| $\mathrm{CR}_{6}$ | 64.72 | 64.93 | 64.99 | 67.92 |
| $\mathrm{~L}_{6}$ | .31210 | .31326 | .3048 | .2972 |

6.1: The three matrices of oligopolistic interdependence proposed by Linda ${ }^{+}$complement the analysis of concentration based upon concentration ratios and Linda indices that were the subject of the preceding section of this Report. In particular, these three matrices are concerned with a closer examination of dominance within the oligopolistic arena, with firms' comparative performance and growth rates. The models of the three matrices, together with an outline of the symbols and formulae used are contained in Appendix 4.

## Matrix No. 1: Oligopolistic Inequality

6.2: By virtue of its concern for $L_{n h}^{*}$ and $L_{s}$ this matrix relates solely to the firms located within the oligopolistic arena and combines the average measure of inequality ( $L_{s}$ ) with the measure of dominance ( $L_{n_{h}^{*}}^{*}$ ) thereby enabling a simple 'score' based upon rank order to be derived. Matrices have been prepared for each year of the study period and may be seen in Appendix 5 : they show for each year the rank order of variables as measured by $L_{n h}^{*}$ < along the horizontal plane with the rank order of $L_{s}$ along the vertical plane. The core of the matrix contains the variables' combined scores.
6.3: Inspection of the matrices in Appendix 5 shows that no one value of $L_{s}$ in any year exceeded unity but that for $L_{n}^{*} \times$ this value was exceeded for gross investments (1.21211) in 1969 and own means (1.21546) in 1974. Whilst these values represent the uppermost extremes of the respective distributions the majority of the $L_{s}$ values can be found within the

[^23]modal class $0.300-0.399$ during the three years to 1971 as the data in Table 6.1 shows. For 1972 and 1973 a greater degree of dispersion may be associated with these variables and the modal class less easy to identify from visual inspection; however, for 1974 an upward shift of the modal class to 0.400-0.499 can clearly be detected. For $L_{n h}^{*}$ < the modal class remains $0.500-0.599$ up to 1971 but thereafter the values become more dispersed in each successive year, although by 1974 it is likely that again the modal class moved upwards to $0.700-0.799$.
6.4: Although Table 6.1 identifies the variables concerned by their code letters a visual pattern is rather difficult to discern immediately; however, this situation is remedied by Table 6.2 which summarises the directions of change in $L_{n h}^{*}<$ and $L_{s}$ for each of the variables during the study period. This table shows that between 1969 and 1974 the value of $L_{s}$ increased for each variable whereas it did so for all but three variables as measured by $L_{n}^{*} h<$. Thus, there is divergence between a positive direction of change in $L_{s}$ and a negative direction of change in $L_{n h}^{*}$ < for net profit, cash flow and gross investments. This may be interpreted as a reduction in the intensity of large firm dominance on the one hand accompanied by an increase in inequality within the oligopolistic arena, on the other. Furthermore, that the direction of change in turnover (increased $L_{n}^{*} h<$ ) is opposite to that for both net profit and cash flow (decreased $L_{n}^{*} \mathrm{~h}$ ) may be a reflection of the increasing relative importance of smaller firms. However, this remains to be substantiated.

> 6.5: In each of the inequality matrices in Appendix 5 the values of $L_{n h<}^{*}$ and $L_{s}$ for each variable have been ranked in descending order and the rankings combined to give the score shown in the core of each matrix. These scores can themselves be placed in rank order, as showr in Table 6.3, so that the variable with the lowest combined score ranks in first position and reflects the greatest degree of concentration and inequality.

The frequency with which variables attained a particular rank during the six years of the study period is summarised in Table 6.4 as the priority classification of variables. Turnover, the traditional indicator of industry concentration, is shown by Table 6.4 to have achieved a priority ranking of no higher than fourth - and on only one occasion in six years. In each of two years turnover ranked sixth and for each of two other years, seventh. Net profit, cash flow, gross investments and own means each ranked in first position on one occasion whilst this was attained twice by net assets. Value added can be seen to have consistently recorded the highest scorings. Employment, the only non-financial variable used ranked second for three out of the six years and third in one other year so that its scoring was consistently the lowest over the study period.
6.6: By summing the variables' individual scores in each of the six years a separate ranking can be devised showing the relative importance attaching to different variables as having influenced industry concentration over the study period. Thus, in Table 6.5 it can be seen that employment, own-means and net assets together ranked first in this respect and represent the variables for which the greatest degree of concentration and inequality could be measured during this six years study of the UK beverages industry. What the structure of this ranking also shows is that the financial measures of performance such as net profit, turnover, cash flow and value added were the least intense measures of industry concentration.

## Matrix No. 2: Comparative Performance

6.7: The methodological requirements * for compiling this matrix state that one matrix should be constructed for each year of the study period and that it should embrace the full sample of firms under consideration. It will be appreciated, therefore, that with $N=72$ in 1969 and $N=63$ in 1972 extensive manipulation of data is involved resulting in a voluminous

[^24]output. For the sake of clarity and expediency it has been decided to limit the following descriptive analysis to the salient features that have emerged during the course of preparing the matrices.
6.8: $\quad$ These matrices are concerned with examining and comparing the peformance of the different firms in the sample in relation to two measures: first of all a measure of profitability denoted as R1 and being the ratio of net profit to turnover; and the second, R2 being a measure of return on capital computed as the ratio of net profit to own means. Both of these ratios have been derived for each firm in each year and are presented in this Report at Appendix 3 , Table 5. Whilst this Appendix table represents the basic input to Matrix No. 2 the further requirement is to rank the computed R1 and R2 ratios in descending order of magnitude and then by adding the rank of a particular firm on R1 to its rank on R2 a combined score of performance is obtained. This score can then itself be ranked and firms' comparative performance assessed.

Ratio R1
6.9: The top ten firms as measured by the profitability ratio R1 are set out in rank order in Table 6.6 and are identified by codeletters rather than full name. With the exception of 1972 the top four positions in this league of profit ratios have been shared by four firms, although only in two years, 1970 and 1971 have the rank orders been perfectly replicated. Reference to the footnote at Table 6.6 indicates that in 1969 only one of the top ten firms was a brewer, the other nine being distillery companies. By 1974 however, the representation of brewers had increased to account for an equal number of distillers. Of the four firms present in the 1974 structure ( $L, P, Q$ and $M$ ) that were not in evidence in 1969, all are brewing companies. What is not evident from this table though, but will be clarified in a later paragraph, is the fact that the enterprises
represented in Table 6.6 were amongst those achieving the smallest turnovers; for example, in 1969 the turnovers of enterprises $A$ to $K$ ranged from $£ 16.980 \mathrm{~m}$ to $£ 0.717 \mathrm{~m}$. which compares with the range of the ten largest turnovers of between $£ 374.3 \mathrm{~m}$ and $£ 30.9 \mathrm{~m}$. The comparison for 1974 is $£ 34.707 \mathrm{~m}$. - £1.619m. and $£ 969.7 \mathrm{~m}$. - £65.8m. That profit ratios have steadily contracted, not only between the top ten firms but across the industry is borne out by Table 6.7 which shows that the top firm had an R1 of 49.53 per cent. in 1969 which had fallen to 30.07 per cent. by 1974. The smallest ratio of profit to turnover recorded each year, though by no means for the same firm, fell from 2.06 per cent. to 0.81 per cent.

Ratio R2
6.10: Table 6.8 is set out in the same format as Table 6.6 but denotes the rankings of the top ten enterprises with respect to the ratio R2. The dominance of the distillery companies in the yearly rankings remains evident but whereas brewers increased in importance under RI the tendency under R2 has been for a marginal decline in their representation between 1969 and 1974. More importantly, this table reflects the presence of soft drinks' manufacturers holding the same top two positions between 1969 and 1973. It should be pointed out, however, that firms $S$ and $T$ are subsidiary companies of much larger firms (in the nomenclature of the Linda methodology they are strictly 'units of economic activity') whose primary interests lie outside the beverages industry. Consequently, levels of own means recorded from balance sheet analysis for these firms are comparatively low and ratios R2 correspondingly high. Indeed, R2 for these firms exceeds 100 per cent. Leaving aside these top two firms then, R2 ranged for the whole sample from 90.40 per cent. to 2.69 per cent. in 1969 and from 44.00 per cent. to 6.08 per cent. in 1974, as shown in Table 6.9.
6.11: The dual dimensions of performance, R1 and R2 are combined by the sum of rank scores for each enterprise in Table 6. 10. The first point that can be made about this table is that it contains only one new firm that was not represented as being amongst the top ten in either Tables 6.6 or 6.8. This enterprise is denoted in Table 6.10 as F' but only appears in one year, 1972. Again, the increasing representation of brewers amongst the top ten 'performers' is evident during the 1969-74 period. It is important to note that all but one of the five brewers in the 1974 league were relatively small (by turnover) regionally based enterprises. Although the overall composition of Table 6.10 has changed somewhat between the years there is evidence of greater rigidity amongst the ranking for the top two firms. Enterprises $A$ and $E$ can be seen to have shared the top two places up to 1971 with enterprise $A$ maintaining second place up to 1973 and sharing first place with enterprise $C$ in 1974. Indeed, the latter enterprise progressed steadily to this ranking from being fifth in 1969.

## Absolute Size and Rankings on R1 and R2

6.12: The point was made briefly in paragraph 6.9 that the firms having the highest ratios of net profit to turnover (RI) were those whose size, as measured by turnover, placed them amongst the smallest firms in the sample. The converse of this is also true; namely, that the firms with the largest turnovers generated some of the lowest profit ratios. Table 6.11 endeavours to clarify this situation by comparing for each year the ranking and absolute values of turnover for the ten largest enterprises with the rankings on Rl achieved by those same enterprises. It can be seen from this table that of the ten firms providing the largest turnovers in 1969, seven of them were amongst the bottom 50 per cent. of ranking of the rate
of profit on turnover (R1). By 1974, eight of the top ten on turnover were amongst the bottom 50 per cent. on RI. In relation to turnover as the size measure, it would appear that smaller firms were more profitable than larger firms.
6.13: The comparison of the ranking of enterprise size as measured by turnover with that on ratio R2 is given by Table 6.12. Unlike the previous table, there is in all but one year (1973) of the study period one firm amongst the top ten on turnover that appears amongst the top ten on the peformance measure R2. In fact, in 1974 there were two such enterprises.

## Profitability and Size of Enterprise

6.14: At this stage in the analysis it is tempting to use Appendix Table 5 to calculate rank correlations between, for example the rank of RI and the rank of variable 01 (Turnover) or the rank of variable 04 (Net Profit). If the rank correlations so derived were negative it might be concluded that increases in the size of enterprise were associated with decreases in profitability. However, there are two very important reasons why such rank correlation coefficients should not be determined. First of all the rank correlations are influenced by insignificant changes in size which have a significant effect on rank. To overcome this problem, the product moment correlation coefficient should be used. It is true that variables such as turnover (01) and net profit (04) have very large dispersions, but the problem of the excessive weight of a few large enterprises can be overcome by using logarithms.
6.15: The second problem is even more serious. The correlation between a ratio, such as R1, with its numerator (04) may be quite different from the correlation with its denominator (01). This well
known problem has been called "the Steindl paradox" by Johnston * (1954) who explained why the relationship between labour productivity and size of manufacturing plant in the U.S.A. depended on whether the numerator (output) or the denominator (employment) is used to measure size. Thus, comparisons between the ranks of R1 and R2 with their respective numerators and denominators may lead to erroneous conclusions.
6.16: However, the problem of measuring the relationship between profitability and size can be overcome and the simplest way to do this is to regress the logarithm of profit $\left(P_{i}\right)$ for the ith enterprise on the logarithm of turnover ( $T_{i}$ ). To smooth out fluctuations it is advisable to take averages of $P_{i}$ and $T_{i}$ over time such that $P_{i}$ represents the ith firms' average profit in 1969 and 1974 with $\mathrm{T}_{\mathrm{i}}$ similarly defined. The results of this regression, based upon 59 observations on profit and turnover in both 1969 and 1974, are set out in Table 6.13. There is clearly a significant positive relationship between the logarithm of profit and the logarithm of turnover. However, the real test is whether or not the same element of significance can be attached to the regression coefficient ( $\hat{\beta}$ ). With the estimate of $\beta=0.9434$ its standard error (s ( $\hat{\beta}$ ) ) of 0.0443 shows that it is not significantly below unity. In these circumstances, therefore, the safest conclusion to be drawn is that a one per cent. increase in turnover is associated with a one per cent. increase in profit, so that as far as this industry is concerned profitability was not dependent upon turnover during the 1969-1974 period.

## Matrix No. 3: Comparative Growth Rates

6.17: The format and notation for Matrix 3 is that as set down in Appendix 4 , where " $c$ " represents a growth-rate on either

[^25]Turnover or Net Profit. It is important that the precise definition of this growth-rate is understood as it is perhaps a slight misnomer. In fact, it is the absolute difference between the ith enterprises share in the total value of $a$ variable between the year $t+1$ and $t$. For example, if enterprise A accounted for 2.687 per cent. of turnover in 1970, and 2.550 per cent. in 1969, then the "growth-rate" in this proportion that is " c ", is +0. 137 per cent. These changes in proportions or "growth-rates" can, of course be positive or negative ("rates of decline") and whilst Appendix 3 Table 6 provides an example of the input data to Matrix 3 it has been necessary to resort to the original data to compute " c " for each enterprise in the sample over the study period. This has been undertaken for the following variables, Turnover (01), Net Profit (04), Cash Flow (05) and Value Added (12), but only the first two have been used in conjunction with Matrix 3.
6.18: Once the "growth-rates" on turnover and net profit have been determined the methodology requires that they be ranked in decreasing order of magnitude for each growth period, i.e. 1970/69, 1971/70 etc. Furthermore, the convention of summing the ith enterprises rank on turnover "growth-rate" with that on net profit "growth-rate" is used to provide a combined scoring of performance which itself may be ranked.
"Growth-rate" on Turnover
6.19: In Table 6.14 the top ten enterprises on turnover "growth-rates" are indicated for each annual change by code letters - the same code letters refer to the same firms as used in previous tables in this section. Enterprise J'in Table 6.14 is Grand Metropolitan Ltd. which entered our sample in 1971 after acquiring Trumans. That J' maintained first position in the subsequent two annual rankings is no doubt attributable to its take-over activity during that time but equally this enterprise is
notable for its absence from the top ten firms in 1974/73. All of the five brewers present in the 1970/69 ranking represent the UK's largest brewing groups but by 1974/73 there were only two such brewers that could claim this status; namely, enterprise $G^{\prime}$ and $R^{\prime}$. It is noteworthy that enterprise $\mathrm{G}^{\prime}$ regained its prime position in the 1974/73 ranking after having last held this position in 1970/69 and being second in 1971/70, but having been absent during the intervening years. Although soft drinks' manufacturers had "growth-rates" on turnover worthy of placing them in the top ten in all but one period, the "growth-rates" of the spirit distillers have prevailed.

## "Growth-rate" on Net Profit

6.20: The dominance of brewers over beverages industry net profit "growth-rates" for 1970/69 is clearly shown in Table 6.15. However, by 1974/73 the rankings are shared equally between brewers and distillers. Of the nine brewers amongst the top ten in 1970/69 five of them were the UK's largest brewing enterprises, whilst the other four were smaller (by turnover) regionally based brewers. This pattern had altered by 1974/73 such that of the five brewers present, only two were brewing for a national market.

Rank of combined Scores on "growth-rates" of Turnover and Net Profit
6.21: The rankings of enterprises by their combined scores on turnover and net profit "growth-rates" are presented in Table 6.16. No doubt because of their prevalence amongst the 1970/69 rankings on net profit alone, the brewing companies remain dominant on the combined scorings for the same period; however, this position is completely reversed in 1974/73 by distillery companies' dominance on both turnover and net profit "growth-rates".
6.22: By comparing the rankings of enterprises in Table 6.10 with those in Table 6.16 the enterprises that have appeared most consistently among the top ten may be discerned. In this respect three enterprises emerge from the analysis as being consistently high performers in terms of both profitability and "growth-rates"; namely enterprises A, D and F. Significantly, each of these is a distiller and it would appear from the analysis that there are notable differences in performance between this sub-group of the UK beverages industry and the brewing sub-group.

## Divergent "growth-rates"

6.23: Behavioural characteristics such as sales and profit maximisation attributable to enterprises may be be viewed superficially in relation to the convergence and divergence between turnover and net profit "growth-rates". There is no reason to believe that a "growth-rate" on turnover for the ith enterprise of say, ' $x$ ' per cent. will be accompanied by a "growth-rate" of the same ' $x$ ' per cent. on net profit. However, it may well be the case that for the ith enterprise a positive direction of change in turnover "growth-rate" could be accompanied by negative direction of change in net profit "growth-rate", and vice versa. Similarly, both directions of change could be negative, or both positive. These permutations for the sample enterprises are summarised in Table 6.17 the most striking feature of which is the impact of Grand Metropolitan Ltd. upon entering the sample in 1971, which caused some 44 enterprises to suffer falls in both turnover and net profit "growth-rates."

The proportionate growth of large and small firms
6.24: It was demonstrated in earlier paragraphs that distillery companies were amongst the major "performers" of both
matrices 2 and 3. Similarly, some regional brewery companies appeared in such roles. In relation to the absolute size of turnover and net profit, these distillery and brewing companies are some of the smaller enterprises in the sample and when this is considered along with the phenomenon of divergent and convergent "growth-rates" it appears reasonable to postulate whether or not there were any differences in the proportionate growth-rates of large and small firms.
6.25: The most appropriate variable for measuring size is that of value added (12) which depends upon the output of all factors of production instead of depending on labour (such as variables 02, 03) or on capital (such as variables, $04,05,06,07,11$ ). Turnover tends to vary between enterprises according to the degree of integration. Suppose that an enterprise does not charge its subsidiary companies for the goods and services it provides for them, because its accounts are completely integrated. It will tend to have a lower turnover than another enterprise which does charge its subsidiaries for the goods and services supplied, even though it may be larger in terms of total output. These limitations may be overcome by using value added (12) as a measure of size, which reflects the contribution of an enterprise to the gross national product. It is true that this measure is in money terms and is therefore affected by price changes (unlike employment) but the use of the standard deviation of the logarithms ( $\sigma$ ) overcomes this difficulty because it is not affected by changes in the general level of prices.
6.26: A formal F-test on $\sigma$ for value added (12) reveals no significant change over the period 1969-74: $F=1.014$, which suggests little or no change in average concentration. This conclusion contrasts with the results for variable 12 based on the concentration ratio and on $L_{s}^{*}$ and presented in section 5 of this report. An explanation is therefore required.
6.27: The explanation is that the two sets of concentration statistics measure different things. Changes in the concentration ratio (CR) and $\mathrm{L}_{\mathrm{s}}^{*}$ measure the extreme growth of the very largest firms and are influenced by exceptional events such as large mergers (i.e. Grand Metropolitan Ltd.). The analysis of changes in these measures is concerned with answering questions such as, "Did the few giant firms at the top of the size distribution increase their share of the market?" At the same time, however, changes in o are governed by the average growth of all firms of different sizes and enable another question, equally important from the point of view of competition policy, to be posed: "Did large firms on the average grow proportionately more quickly than small firms?"
6.28: The estimate of average concentration ( $\sigma$ ) in terms of value added (12) is consistent with the hypothesis that on the average the proportionate growth of the smaller firms in food distribution was the same as that of the larger firms over the period 1969-74. To demonstrate this rigorously a more powerful technique is needed; namely, the relationship of $\sigma_{\dagger} / \sigma_{t-1}=\beta / \rho$ where $\beta$ is the regression of the logarithm of size at time $t$ on the logarithm of size at time $t-1$ and where $\rho$ is the associated correlation coefficient. As explained in a previous report ${ }^{+}$on the food processing industry $\beta$ measures the proportionate growth-of larger enterprises relative to small enterprises and $\rho$ is a measure of size mobility. It would be possible to use a rank correlation coefficient to measure changes in rank order, but because some enterprises are very close together in size and a very small difference in their respective growths can change their order, it is better to use p , which gives small weight to such small variations in growth and large weight to large variations in growth.
6.29: It is not possible to estimate $\beta$ or $\rho$ from the tables in Appendix 3 and thus we have to use the original data. Although it is possible to calculate $\beta$ or $\rho$ for each of the other variables, only

[^26]value added (12) will be used here for the reasons stated in paragraph 6.25. Logarithms of value added (12) have been used for the 53 enterprises for which data was available in both 1969 and 1974 to estimate $\beta$ and $\rho$. The dynamic concentration parameters for this test are set out in Table 6.18.
6.30: That $\hat{\rho}>\hat{\beta}$ confirms that $\sigma$ fell slightly but the F-test carried out at paragraph 6.26 showed the distribution of the two series on Value Added in 1969 and 1974 not to be statistically significant from each other. Furthermore, it must be remembered that $\hat{\rho}$ is a measure of firms' size mobility and with $\hat{\rho}=0.9814$ which is highly significant it appears that there was relatively little change in the rank order of enterprises over the period. Nevertheless, the point estimate of $\hat{\beta}$ $=0.9742$ suggests that the proportionate growth of the larger enterprises in the Beverages industry was slightly below that of their rivals. This would tend to be confirmed by the standard error, $s(\hat{\beta})=0.0265$ which indicates $\widehat{\beta}$ to be significantly below unity.

Index of Competition
6.31: If the "growth-rates" of the ith enterprise, as defined in paragraph 6.17, are summed irrespective of their positive or negative signs and divided by 2 the index - $d$ can be computed. These growth-rates can be viewed as variations in the market shares of a particular variable and as such index - $d$ is taken by Linda to represent the degree of dynamism or competition in a variables structure.* Index - $d$ has been derived for the five growth periods between 1969 and 1974 in relation to four variables; namely, turnover, net profit, cash flow and value added. The results are presented in Table 6.19 and Linda suggests the following indicators as being useful for its interpretation.

* Linda (1976) op.cit. pp. 72-76.

| $d$ | $\leqslant 2 \%$ | hyper-rigidity |
| ---: | :--- | :--- |
| $2 \%<d$ | $\leqslant 3 \%$ | rigidity |
| $3 \%$ | $<d \leqslant 5 \%$ | qualified rigidity |
| $5 \%<d \leqslant 10 \%$ | qualified dynamism |  |
| $10 \%<d \leqslant 20 \%$ |  | high dynamism |
| $20 \%<d \leqslant 50 \%$ | very high dynamism |  |
| $d>50 \%$ |  | hyper-dynamism |

6.32: With an index - d equal to 11.421, turnover achieved the highest overall value in 1972/71 thus earning the title "high dynamism" according to the Linda scale of values. Net profit, cash flow and value added can each be placed as "qualified dynamism" in relation to their highest values, attained in the first two cases in 1972/71 but in 1971/70 for the latter. Given, that index - $d$ reflects the extent of changes in market share the peaking of $d$ values in 1972/71 most likely represents the impact of Grand Metropolitan entering the sample in 1971 and acquiring other concerns in 1972. A comparison of the four variables' structures as measured by index - d exhibit only small differences between 1974/73 and 1970/69 which may generally be described as "rigid".

## Conclusion

6.33: The statistical tests in this section have examined the profitability and the relative growth of sample firms for which data was available in both 1969 and 1974. This method implicitly allows for the data on acquired companies to be included with the data for the acquiring company. However, new entrants between 1969 and 1974 are automatically excluded from this analysis. Attention has also been drawn to the impact of one large new entrant to the beverages industry, both in this and the preceding section, and its effects upon the measures of concentration. To account more precisely for this new entrant it may be considered worthwhile repeating the statistical tests in relation to the period 1971 (when new entrant entered the sample) to 1974. Unfortunately, this would have limited value as a time period of only four years may be considered too short to attach any confidence to statistical estimates.
6.34: What the results of this section have served to emphasise is the need to examine separately the component sectors of the UK beverages industry. Differences between large and small companies have been demonstrated in relation to both differential growth rates and performance as measured by Matrices 2 and 3. These size and performance differences exist not only between brewers and distillers on the one hand, but in particular between the brewers themselves, on the other.
6.35: Finally, the apparent rigidity disclosed by index - d stresses the need to look more closely at product markets, which can broadly be defined as beer, wines, spirits and soft drinks and provide the subject matter of forthcoming reports.

TABLE 6.1
Frequency Distribution of $L_{n}^{*}{ }_{h<}$ and $L_{s}$, 1969-74

| $L_{n h}^{*}<$ | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.500-0.599 | VA, TO, WS, NA | VA, TO, WS, NA | VA, TO, <br> WS, NA, <br> EM | VA, CF | $\begin{aligned} & \text { CF, NP, } \\ & \text { GI } \end{aligned}$ | CF, NP |
| 0.600-0.699 | $\begin{aligned} & E M, C F, \\ & O M \end{aligned}$ | EM, CF OM | $\begin{aligned} & \mathrm{CF}, \mathrm{OM}, \\ & \mathrm{GI} \end{aligned}$ | TO, OM $N P$ | VA, OM |  |
| 0.700-0.799 | NP | NP, GI | NP | WS, EM, GI | TO, EM | VA, TO, <br> NA, EM |
| 0.800-0.899 |  |  |  | NA | NA | CI |
| 0.900-0.999 |  |  |  |  | WS | WS |
| $1.000+$ | GI |  |  |  |  | OM |


| $L_{\text {s }}$ | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.200-0.299 |  |  | VA, TO |  |  |  |
| 0.300-0.399 | VA, TO, WS, NA, EM, CF, OM, NP | VA, TO, <br> WS, NR <br> EM, OM <br> NP, GI | WS, NA, EM, CF, OM, NP, GI | $\begin{aligned} & \text { VA, TO, } \\ & \text { CF, NP } \end{aligned}$ | $\begin{aligned} & \text { VA, CF, } \\ & \text { NP } \end{aligned}$ | CF |
| 0.400-0.499 | GI | CF |  | $\begin{aligned} & \text { WS, OM, } \\ & \text { GI } \end{aligned}$ | $\begin{aligned} & \mathrm{TO}, \mathrm{OM}, \\ & \mathrm{GI} \end{aligned}$ | VA, TO, <br> NA, <br> EMP, <br> NP, GI |
| 0.500-0.599 |  |  |  | NA, EM | $\begin{aligned} & \text { WS, NA, } \\ & \text { FM } \end{aligned}$ | WS |
| $0.600+$ |  |  |  |  |  | OM |

CODE:
TO - $\quad$ Turnover
EM - Employment
WS - Wages \& Salaries
NP - Net Profit
CF - Cash Flow

[^27]
## TABLE 6.2

$\underline{\text { Direction of Change in } L_{s} \text { and } L_{n}^{*}<, ~ 1969-74}$

| Variable | $L_{s}$ | $L_{n_{h}}^{*}$ |
| :--- | :--- | :--- |
| 01 Turnover | + | + |
| 02 | Employment | + |
| 03 Wages and Salaries | + | + |
| 04 | Net Profit | + |
| 05 | Cash Flow | + |
| 06 Gross Investments | + | + |
| 07 | Own Means | + |
| 11 | Net Assets | + |
| 12 Value Added | + | - |
|  |  |  |

## TABLE 6.3

Rank of scores derived from Oligopolistic Inequality Matrices for individual years 1969-74

| VARIABLE | RANK |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
| 01 Turnover | 6 | 7 | 8 | 7 | 4 | 6 |
| 02 Employment | 2 | 2 | 5 | 2 | 3 | 5 |
| 03 Wages \& Salaries | 6 | 8 | 7 | 3 | 2 | 2 |
| 04 Net Profit | 3 | 2 | 1 | 6 | 8 | 7 |
| 05 Cash Flow | 5 | 1 | 3 | 8 | 9 | 9 |
| 06 Gross Investments | 1 | 4 | 4 | 4 | 6 | 3 |
| 07 Own Means | 4 | 4 | 2 | 5 | 5 | 1 |
| 11 Net Assets | 6 | 4 | 5 | 1 | 1 | 3 |
| 12 Value Added | 9 | 9 | 8 | 9 | 7 | 8 |

TABLE 6.4
Priority Classification of Variables; for the period 1969-74

| VARIABLE | RANK |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| 01 Turnover | - | - | - | 1 | - | 2 | 2 | 1 | - | 6 |
| 02 Employment | - | 3 | 1 | - | 2 | - | - | - | - | 6 |
| 03 Wages \& Salaries | - | 2 | 1 | - | - | 1 | 1 | 1 | - | 6 |
| 04 Net Profit | 1 | 1 | 1 | - | - | 1 | 1 | 1 | - | 6 |
| 05 Cash Flow | 1 | - | 1 | - | 1 | - | - | 1 | 2 | 6 |
| 06 Gross Investments | 1 | - | 1 | 3 | - | 1 | - | - | - | 6 |
| 07 Own Means | 1 | 1 | - | 2 | 2 | - | - | - | - | 6 |
| 11 Net Assets | 2 | - | 1 | 1 | 1 | 1 | - | - | - | 6 |
| 12 Value Added | - | - | - | - | - | - | 1 | 2 | 3 | 6 |

TABLE 6.5
Alternative Priority Classification of Variables for the period 1969-74

| RANK | VARIABLE |  |  | SCORE |
| :---: | :---: | :---: | :---: | :---: |
| ( | 02 | Employment | ) |  |
| 1 ( | 07 | Own Means | ) | 46 |
| ( | 11 | Net Assets | ) |  |
| 4 | 06 | Gross Investments |  | 48 |
| 5 | 03 | Wages \& Salaries |  | 51 |
| 6 | 04 | Net Profit |  | 59 |
| 7 ( | 01 | Turnover | ) | 74 |
| 7 | 05 | Cash Flow | ) | 74 |
| 9 | 12 | Value Added |  | 96 |

Top 10 Firms as measured by Ratio RI, i.e. Net Profits: Turnover, 1969-74

Enterprises A, B, ......R

| Rank RI | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | A | A | A | C | C | D |
| 2 | B | C | C | A | A | C |
| 3 | C | B | B | D | D | B |
| 4 | D | D | D | J* | B | A |
| 5 | E | H | E | K | J* | J* |
| 6 | F | E | G | B | L* | L* |
| 7 | G | G | J* | N* | Q* | P* |
| 8 | H | J* | K | L* | F | Q* |
| 9 | J* | F | M* | P* | $M^{*}$ | $M^{*}$ |
| 10 | K | L* | L* | Q* | R* | F |

* denotes brewer, all others are distillery companies.

TABLE 6.7
Ratio RI - Range between Top 10 Firms and Last Firm
per cent.

| Ratio R1 - Range |  |  |  |
| :--- | :---: | :---: | :---: |
| Year | 1st Firm Firm | Last Firm |  |
| 1969 | 49.53 | 16.62 | 2.06 |
| 1970 | 47.23 | 17.49 | 1.18 |
| 1971 | 36.04 | 18.75 | 3.38 |
| 1972 | 36.20 | 20.19 | 3.30 |
| 1973 | 38.03 | 18.26 | 4.70 |
| 1974 | 30.07 | 0.81 |  |

## TABLE 6.8

Top 10 Firms as measured by Ratio R2, i.e. Net Profit:
Own Capital, 1969-74

| Enterprises A, B, .. $Z, A^{\prime}, \ldots E^{\prime}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Rank R2 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
| 1 | S** | S** | S** | S** | S** | S** |
| 2 | T** | T** | T** | T** | T** | Z |
| 3 | E | E | Z | Z | Z | $B^{\prime}$ |
| 4 | U | P* | E | W* | $B^{\prime}$ | T** |
| 5 | V | U | W* | P* | $\mathrm{A}^{\prime}$ * | $A^{\prime}$ * |
| 6 | A | $V^{* *}$ | U | E | E | A |
| 7 | F | W* | $\mathrm{P}^{*}$ | $A^{\prime *}$ | U | K |
| 8 | W* | F | $A^{\prime *}$ | V** | C | C |
| 9 | ${ }^{*}$ | A | V** | U | $C^{\prime *}$ | $E^{1}$ * |
| 10 | $Y^{*}$ | Q* | $Y^{*}$ | C | D | D |

$\left.\begin{array}{ll}\text { * } & \text { denotes brewer } \\ \text { ** } & \text { denotes soft drinks manufacturer }\end{array}\right\}$ all other are distililery companies
TABLE 6.9
Ratio R2 - Range between Top 10 Firms and Last Firm
per cent.

|  |  |  |  |  |
| :--- | :--- | :---: | :---: | :---: |
| Year | 1st Firm | Ratio R2 - Range <br> 3rd Firm | 10th Firm | Last Firm |
| 1969 | +100.0 | 90.40 | 26.93 | 2.69 |
| 1970 | +100.0 | 54.44 | 28.85 | 7.13 |
| 1971 | +100.0 | 68.13 | 27.54 | 7.79 |
| 1972 | +100.0 | 40.95 | 28.31 | 8.41 |
| 1973 | +100.0 | 38.08 | 30.52 | 8.05 |
| 1974 | +100.0 | 44.00 | 24.77 | 6.08 |

TABLE 6.10
Rank of Top 10 Firms based upon Combined Scores, R1 and R2, 1969-1974

| Enterprises $A, B, \ldots .2, A^{\prime}, \ldots F^{\prime}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Rank of Score R1 and R2 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
| 1 | A | E | E | C | C | ( C |
| 2 | E | A | A | A | A | (A |
| 3 | F | C | C | P* | $C^{\prime *}$ | D |
| 4 | V | P* | P* | F | E | Q* |
| 5 | ( B | F | U | \} E | N* | F |
| 6 | \{C | B | $\left\{N^{*}\right.$ | ( $\mathrm{S}^{* *}$ | Q* | P* |
| 7 | H | H | $\} \mathrm{R}^{*}$ | ( $\mathrm{N}^{*}$ | $\mathrm{R}^{*}$ | R* |
| 8 | U | $V$ | V** | (K | M ${ }^{\text {* }}$ | E* |
| 9 | D | Q* | X* | $V^{* *}$ | ( $\mathrm{E}^{*}$ | L* |
| 10 | X* | U | S** | $\left\{\begin{array}{l} F^{\prime} \\ U \end{array}\right.$ | $\left\{\begin{array}{l} \mathrm{U} \\ L^{*} \end{array}\right.$ | $B^{\prime}$ |

$\begin{array}{ll}\text { * } & \text { denotes brewer } \\ * * & \text { denotes soft drinks manufacturer }\end{array}\left\{\begin{array}{l}\text { all others are distillery companies }\end{array}\right.$

## TABLE 6.11

Comparison of Enterprise Rank on Turnover with Rank on RI, 1969-74

| Rank on Turnover | Rank on RI and Absolute Value of Turnover (£m) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1969 |  | 1970 |  | 1971 |  | 1972 |  | 1973 |  | 1974 |  |
|  | Rank | T/O | Rank | T/O | Rank | T/O | Rank | T/O | Rank | T/O | Rank | T/O |
| 1 | 15 | 374.3 | 21 | 413.8 | 15 | 442.6 | 53 | 605.6 | 58 | 845.5 | 54 | 969.7 |
| 2 | 39 | 345.5 | 37 | 384.4 | 35 | 434.4 | 27 | 484.5 | 21 | 542.1 | 23 | 617.1 |
| 3 | 42 | 315.1 | 34 | 343.1 | 31 | 385.0 | 13 | 450.0 | 25 | 525.7 | 31 | 594.1 |
| 4 | 49 | 198.0 | 42 | 210.2 | 59 | 314.5 | 28 | 440.5 | 30 | 508.3 | 34 | 572.1 |
| 5 | 51 | 162.6 | 48 | 182.2 | 37 | 250.2 | 30 | 246.4 | 38 | 285.1 | 48 | 339.8 |
| 6 | 31 | 143.9 | 30 | 158.4 | 52 | 213.4 | 52 | 237.6 | 49 | 256.6 | 44 | 271.8 |
| 7 | 27 | 117.2 | 32 | 136.2 | 33 | 174.1 | 34 | 174.5 | 24 | 193.2 | 51 | 222.7 |
| 8 | 41 | 115.4 | 28 | 134.3 | 30 | 171.0 | 25 | 170.6 | 41 | 175.6 | 20 | 199.7 |
| 9 | 50 | 100.0 | 59 | 106.3 | 25 | 148.7 | 31 | $43.7$ | $40$ | 57.6 | 42 | $72.6$ |
| 10 | 66 | 30.9 | 29 | 32.2 | 62 | 118.3 | 61 | 41.8 | 55 | 54.1 | 56 | 65.8 |
| $N$ | 72 |  | 71 |  | 69 |  | 63 |  | 63 |  | 63 |  |

## TABLE 6.12

Comparison of Enterprise Rank on Own-Means with Rank on R2, 1969-74

| Rank on Own Means | Rank on R2 and Absolute Value of Own Means (£m) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1969 |  | 1970 |  | 1971 |  | 1972 |  | 1973 |  | 1974 |  |
|  | Rank | O/M | Rank | $0 / M$ | Rank | O/M | Rank | O/M | Rank | O/M | Rank | O/M |
| 1 | 25 | 263.4 | 26 | 279.9 | 21 | 295.8 | 56 | 413.4 | 56 | 449.2 | 60 | 817.2 |
| 2 | 54 | 207.3 | 41 | 215.4 | 27 | 225.8 | 22 | 318.1 | 29 | 332.9 | 18 | 336.2 |
| 3 | 36 | 200.6 | 32 | 210.4 | 34 | 225.7 | 21 | 248.6 | 17 | 324.8 | 38 | 334.0 |
| 4 | 52 | 117.8 | 44 | 125.7 | 51 | 146.4 | 30 | 241.7 | 37 | 318.6 | 26 | 318.4 |
| 5 | 51 | 109.7 | 50 | 115.4 | 36 | 142.3 | 38 | 153.0 | 31 | 159.6 | 56 | 264.0 |
| 6 | 29 | 72.4 | 53 | 101.9 | 59 | 139.7 | 44 | 116.0 | 52 | 119.4 | 48 | 121.9 |
| 7 | 39 | 68.3 | 24 | 75.5 | 43 | 109.6 | 12 | 81.7 | 12 | 89.2 | 16 | 98.9 |
| 8 | 8 | 53.4 | 7 | 57.9 | 17 | 77.4 | 4 | 53.3 | 11 | 86.1 | 9 | 94.8 |
| 9 | 18 | 37.1 | 27 | 38.6 | 5 | 52.7 | 47 | 33.2 | 41 | 37.2 | 54 | 52.3 |
| 10 | 59 | 25.4 | 56 | 26.3 | 32 | 39.7 | 63 | 29.2 | 57 | 31.8 | 10 | 42.13 |
| $N$ | 72 |  | 71 |  | 69 |  | 63 |  | 63 |  | 63 |  |

TABLE 6.13
Logarithmic regression between $\mathrm{P}_{\mathrm{i}}$ (profit) and $\mathrm{T}_{\mathbf{i}}$ (turnover), 1969-74

|  | logs $_{10}$ |  |
| :--- | :---: | :---: |
| Function: | $\log P_{\mathbf{i}}=0.3016+$0.9434 <br> $(0.0443)$ |  |
| Parameters: $T_{\mathbf{i}}$ |  |  |
|  | N | 59 |
|  | $\hat{\beta}$ | 0.9434 |
|  | $\mathrm{~s}(\hat{\beta})$ | 0.0443 |
|  | $t$ | 21.2754 |
|  | $\hat{\rho}$ | 0.9425 |

TABLE 6.14
Top 10 Firms as measured by Turnover "growth-rate", 1969-74


*     - denotes brewer
** - denotes soft drinks manufacturer) all others are distillery companies

TABLE 6.15
Top 10 Firms as measured by Net Profit "growth-rate", 1969-74

| Rank | Enterprises $A, B \ldots Z, A^{\prime}, B^{\prime}, \ldots . V^{\prime}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1970/69 | 1971/70 | 1972/71 | 1973/72 | 1974/73 |
| 1 | $M^{\prime *}$ | J** | J** | Q* | D |
| 2 | $\mathrm{G}^{1 *}$ | $\mathrm{G}^{\text {* }}$ | $\mathrm{H}^{*}$ | ${ }^{1}$ | $\mathrm{N}^{\prime}$ |
| 3 | R'* | R'* | $M^{1 *}$ | $\mathrm{N}^{\prime}$ | E* |
| 4 | W* | E | K' | S** | F |
| 5 | $H^{\prime *}$ | S' | S** | $C^{1 *}$ | P'* |
| 6 | S** | Z | T** | $M^{1 *}$ | A |
| 7 | $\mathrm{N}^{*}$ | T** | Z | W* | Q** |
| 8 | P'* | U'* | $E^{*}$ | $\mathrm{E}^{\prime *}$ | Z |
| 9 | R* | F | C* | D | $H^{\prime *}$ |
| 10 | M* | L' | N* | Q'* | $V^{\prime *}$ |

*     - denotes brewer
** - denotes soft drinks manufacturers ) all orhers are distillery companies

TABLE 6.16
Rank of Top 10 Firms based upon Combined Scores on Turnover and Net Profit "growth-rates", 1969-74

| Rank | $1970 / 69$ | $1971 / 70$ | $1972 / 71$ | $1973 / 72$ | $1974 / 73$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | $\mathrm{G}^{\prime *}$ | $\mathrm{~J}^{\prime *}$ | $\mathrm{~J}^{\prime *}$ | $\mathrm{~J}^{\prime *}$ | $\mathrm{~N}^{\prime}$ |
| 2 | $\mathrm{H}^{\prime *}$ | $\mathrm{G}^{\prime *}$ | $\mathrm{H}^{\prime *}$ | $\mathrm{~S}^{* *}$ | D |
| 3 | $\mathrm{~S}^{* *}$ | E | $\mathrm{M}^{\prime *}$ | $\mathrm{~N}^{\prime}$ | Z |
| 4 | $\mathrm{~W}^{*}$ | Z | $\mathrm{E}^{\prime *}$ | $\mathrm{Q}^{\prime *}$ | F |
| 5 | $\mathrm{E}^{\prime *}$ | F | $\mathrm{~K}^{\prime}$ | $\mathrm{T}^{* *}$ | $\mathrm{~S}^{\prime}$ |
| 6 | Z | $\mathrm{K}^{\prime}$ | Z | D | A |
| 7 | $\mathrm{X}^{*}$ | $\mathrm{~L}^{\prime}$ | $\mathrm{S}^{* *}$ | Z | K |
| 8 | $\mathrm{~W}^{\prime *}$ | $\mathrm{~T}^{\prime * *}$ | $\mathrm{D}^{\prime}$ | $\mathrm{B}^{\prime}$ | $\mathrm{L}^{\prime}$ |
| 9 | $\mathrm{~B}^{\prime}$ | $\mathrm{Q}^{\prime *}$ | F | $\mathrm{C}^{\prime *}$ | $\mathrm{Z}^{\prime *}$ |
| 10 | $\mathrm{X}^{\prime *}$ | $\mathrm{~T}^{* *}$ | $\mathrm{~N}^{*}$ | $\mathrm{Y}^{\prime *}$ | $\mathrm{~V}^{\prime *}$ |

*     - denotes brewer
** - denotes soft drinks manufacturers ) all others are distillery companies

TABLE 6.17
Divergence and Convergence in Turnover and Net Profit "growth-rates", 1969-74

| Direction of <br> Change | $1970 / 69$ | $1971 / 70$ | $1972 / 71$ | $1973 / 72$ | $1974 / 73$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| + TO + NP | 25 | 8 | 37 | 9 | 29 |
| + TO - NP | 11 | 2 | 13 | 6 | 10 |
| - TO + NP | 12 | 18 | 5 | 26 | 14 |
| - TO - NP | 21 | 44 | 14 | 21 | 7 |
| 0 TO O NP | - | - | - | - | 2 |
| + TO O NP | - | - | - | - | - |
| - TO O NP | - | - | - | - | - |
| 0 TO + NP | 3 | - | - | 1 | - |
| 0 TO - NP | - | - | - | - | 1 |

$$
\begin{aligned}
& +=\text { increase in "growth-rate" } \\
& -=\text { decrease in "growth-rate" } \\
& 0=\text { no charge } \\
& \text { TO }=\text { Turnover } \\
& \mathrm{NP}=\text { Net Profit }
\end{aligned}
$$

## TABLE 6.18

Dynamic Concentration Parameters for Value Added (12), 1969-74


TABLE 6.19
Index - d, for selected variables, 1970/69-1974/73

|  | per cent. |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | $1970 / 69$ | $1971 / 70$ | $1972 / 71$ | $1973 / 72$ | $1974 / 73$ |
| Turnover (01) | 1.800 | 10.214 | 11.421 | 4.392 | 1.973 |
| Net Profit (04) | 3.944 | 8.114 | 10.578 | 2.449 | 3.892 |
| Cash Flow (05) | 3.309 | 7.806 | 10.758 | 2.162 | 3.556 |
| Value Added (12) | 2.909 | 10.721 | 10.342 | 2.858 | 2.626 |

## 7: CONCLUSION

7.1: $\quad$ The evolution of concentration in the beverages industry has been characterised by a series of piecemeal acquisitions confined for the most part within the industry. However, a new dimension to this process occurred in 1971/72 when two firms, with no previous connection with the industry obtained a significant stake. As "outsiders", Imperial Group and Grand Metropolitan through their takeovers of Courage and Truman/Watney, respectively, were able to account for one-eighth of beverages industry turnover by 1974. The precise reasons for these moves into the beverages industry are unclear; however, Imperial Group is primarily a manufacturer of cigarettes, yet like other tobacco companies it has since the late 1960s been diversifying its activities, particularly into the food and distributive trades. The acquisition of Courage at best represents a continuation of this policy. The consumption of beverages industry products in relatively relaxed business and domestic situations orientates the industry towards leisure activities. It may be simply for this reason that Grand Metropolitan acquired Trumans to complement its existing involvement in the leisure industry.
7.2: $\quad$ Setting aside such speculative notions, it is relevant to consider other more general factors which could have encouraged or hindered concentration by acquisition. It is intended to describe in greater detail the State regulations governing the production and distribution of alcoholic beverages in the UK in Part 2 of this report. For the time being it is enough to state that excise licences are required for any establishment producing and retailing alcoholic liquor. In addition, there exist restrictive arrangements laid down by brewers along the lines of the exclusive supply contract and known as the tied-house system. This restricts a particular retail outlet, whether owned or not by the brewer, to selling only that brewers' beers. The licencing of retail premises and the tied-house system have been the single largest force contributing to concentration by
acquisition in the brewing industry. For it is the case that the retail licences of the acquired brewery company pass immediately to the acquiring company as do the exclusive supply contracts, thereby providing the opportunity for a relatively rapid increase in market share. At the same time production facilities so acquired have often proved surplus to requirements, resulting in either conversion to bottling plants or closure.
7.3: In the spirits industry the most significant barrier to entry that is likely to face any prospective new entrant is that of financing the laying down of stocks; in the case of Scotch whisky the legal minimum is three years. However, the barrier that this financial constraint represents appears to have been recently overcome. Since the end date for this study period two notable acquisitions have occurred: during 1975 Whitbread \& Co. acquired Long John International (spirit distillers whose 1974 turnover was $£ 25.3 \mathrm{~m}$.) and Allied Breweries acquired Teacher (Distillers) Ltd., (whose 1974 turnover was $£ 48.1$ m.) in 1976. It is worth noting that both of these acquiring companies were amongst the top-four enterprises on turnover included in our beverages industry sample, which may be confirmation that such take-overs require significant financial backing.
7.4: The direct stakes taken by Whitbread and Allied, in the spirits industry maintains the trend towards diversification within the brewing sub-sector of the beverages industry. This trend was noted from the analysis of sub-industry structure in section 3, where the relatively low degree of specialisation confirms the extent of such diversity of interests. Whilst it is true that there is a fairly high degree of substitutability between the products of the beverages industry, conditioned as much by basic consumer preferences as by relative price differences, the growth rate in terms of spending per head on spirits at constant (1969) prices between 1969 and 1974 was slightly more than 13 per cent. per annum, compared with just
under 3 per cent. per annum for beer. It does not seem surprising, therefore, that major brewers such as Whitbread and Allied should consider a spreading of their interests.
7.5: With respect to such diversification of interests the measures of concentration derived in this study relate to a sample of firms engaged in either one or more of the following activities; brewing, spirit distilling, soft drinks manufacture, the making of cider, perry and British Wines and the distribution of imported wines. Having derived the appropriate concentration indices it has been our concern to assess whether or not the level of concentration changed significantly between 1969 and 1974. The results are uncertain as between Census of Production data, on the one hand, and our own quantitative analysis, on the other. The Census data points towards an increase in the concentration of sales of principal products at the industry level between 1963 and 1968. Comparable data for 1970 and 1972 is not available for in these years the sales concentration ratios published were related to total industry sales rather than sales of principal products. Furthermore, as the 1970 and 1972 ratios stand, they do at one and the same time both overstate and understate the level of principal product concentration for the reasons stated in section 3.

$$
\text { 7.6: } \quad \text { The quantitative analysis undertaken in section } 5
$$ concluded that in relation to the statistical tests applied to the measures of concentration yielded by the computer, there had been significant increases in beverages industry concentration between 1969 and 1974. In addition, this conclusion can be amplified in two respects. First of all, although the concentration ratio (CR) increased for all variables across successively higher values of $N$, the index of disparity for the top four firms ( $L_{4}$ ) on turnover, net profit and cash-flow, declined. That is to say, that although the proportion of total turnover, for example, attributable to the four largest firms increased, the division of turnover between the four firms became more equal. Secondly, the divergence between the fall in the index of disparity

$(\mathrm{L})$ at $\mathrm{L}_{4}$ for turnover, net profit and cash-flow and the increase in this measure for these variables across $\mathrm{L}_{8} \ldots \mathrm{~L}_{40}$ may be a reflection of the findings in section 6 that the proportionate growth of smaller firms was greater than that of their larger rivals.
7.7: The conclusions concerning the significance of change in the measures of concentration have, however, been qualified in one very important respect; that is, by the extent to which the inclusion of data on a firm whose activities extend beyond the beverages industry is likely to overstate the appropriate level of concentration. In relation to our own estimates we have attempted to compensate for this with the result that on turnover concentration amongst the top four firms $\left(C R_{4}\right)$ appears more reasonably to have increased from 51.8 per cent. in 1969 to 54.1 per cent. in 1974 (rather than from 51.8 per cent. to 59.5 per cent.) accompanied by a fall in $\mathrm{L}_{4}$ from 0.371 in 1969 to 0.359 in 1974.
7.8: $\quad$ Given the number of mergers that occurred during the study period it is questionable as to why the increase in concentration stated in the previous paragraph and amounting to 2.3 per cent. over 5 years is not greater. Part of the explanation, at least, would seem to rest with the conclusion from the statistical analysis in section 6; namely, that in terms of value added as a size measure, smaller firms grew proportionately more than the larger ones, thereby counteracting the tendency towards concentration amongst, for example, the four largest firms. This conclusion was intuitively reached from the qualitative analysis in the same section, which noted that the firms with the better performance in terms of profitability and "growth rates" were the smaller companies. It is noteworthy that the distillers were the small companies which had the best and most consistent performance overall. Furthermore, there was as much difference between the performance of distillers and brewers, as there was between the large national brewers, on the one hand, and their smaller regional counterparts, on the other. reflection of the differing degrees of competition within the sub-sectors of the beverages industry, but more particularly at the level of the productmarket. Product-market concentration is likely to present quite a different picture when measured by product-brand share data and it is of the utmost importance that due consideration be given to the role of imports and exports. Imports of beer provided on average for just under 5 per cent. of UK consumption between 1968 and 1975, whilst for spirits the comparable factor was 24 per cent. To the exclusion of a small volume of English wine production, the UK wine market is entirely dependent upon imports. For this reason, consideration of the structure of the wine industry is notably absent from the analysis of other beverages industries sub-sectors presented in section 3. That part of the wine trade that passes through the hands of brewers will have been included with the data on individual companies in our sample; however, one source has stated that *"brewers shipped six out of ten of the 186 m . bottles of table wine imported and sold in Britain during 1972", leaving the balance in the hands of independent agencies and shippers. These qualifications must necessarily apply to the measures of concentration presented in this report.
7.10: The second part of this report entitled "The Distribution of the Products of the UK Beverages Industry" will endeavour to assess the extent of competition and concentration within the separate product markets which comprise the UK beverages industry.

[^28]
## FORMULAE

(1) The Linda Index (L), is the arithmetic mean of the ( $\mathrm{n}^{*}-1$ ) ratios of oligopolistic equilibrium (EO), each being previously divided by $n^{*}$. The upper and lower limits of $L$ are $\frac{1}{n^{*}}$ and $\infty$, respectively.

$$
\frac{\sum_{i=1}^{n^{*}-1} \frac{E 0_{i}}{n^{*}}}{n^{*}-1}
$$

where, $E 0_{i}=\frac{\frac{A_{i}}{i}}{\frac{A_{n^{*}}-A_{i}}{n^{*}-i}}=\frac{n^{*}-i}{i} \cdot \frac{A_{i}}{A_{n^{*}}-A_{i}}$

$$
=\frac{n^{*}-i}{i} \cdot \frac{A_{i}}{1-A}
$$

(2) The Coefficient of Variation (V)

(3) The Mini Coefficient (G)

$$
G=\frac{1}{n \cdot x} \sum_{i=1}^{n}\left[(i-1) \cdot F x_{i}-i \cdot F x_{i-1}\right] \begin{aligned}
& \text { lower limit }=0 \\
& \text { upper limit }=\frac{n-1}{n}
\end{aligned}
$$

(4) Herfindahl-Hirschman Index (H)

$$
H=1000 \frac{v^{2}+1}{n}=\frac{1000}{x^{2}} \sum_{i=1}^{n} x_{i}^{2} \quad \text { lower limit }=\frac{1000}{n} \quad \text { upper limit }=1000
$$

(5) Entropy Index (E)

$$
E=100
$$

$$
\sum_{i=1}^{n} \frac{x_{i}}{x} \log \frac{x_{i}}{x}
$$

$$
\text { lower limit }=100(-\log n)
$$

$$
\text { upper limit }=0
$$

## SYMBOLS

| n | $=$ | the total number of units (firms) comprising the industry |
| :---: | :---: | :---: |
| n* |  | number of units studied - <br> - both for each hypothesis 2, 3, 4, 8, 10, 12, 15, 20 etc. <br> - or constituting the sample analysed. |
| $A_{i}$ | $=$ | aggregate share of the total sample accounted for by the top i firms. |
| $A_{n}$ * | $=$ | $100 \%=1$ |
| L | $=$ | the Linda index corresponding to the $\mathrm{n}^{*}$ hypothesis |
| $L_{n}^{*}{ }_{m}$ | $=$ | the minimum value of the Linda index. |
| $\mathrm{n}^{*}{ }_{m}$ | = | number of firms corresponding to the minimum value of the Linda index in the sample analysed. |
| $L_{n}^{*}{ }_{m<}$ | $=$ | the maximum value of the Linda index. |
| $\mathrm{n}^{*} \mathrm{~m}<$ | = | the number of firms corresponding to the maximum value of the $L$ index in the interval between $n^{*}=2$ and $n^{*}$. |
| $L_{\text {s }}$ | $=$ | the arithmetic mean of the $L$ index, from $L_{2}$ up to and including $\mathrm{L}_{\mathrm{n}}{ }_{m}$ |


| EO | = | each EO ratio is expressed by the average size of the first i firms and those of the ( $n^{*}$ - i) remaining firms where $i$ successively assumes values from 1 (which expresses the relationship between the size of the first firm and the average size of all other firms in the sample of the industry studied) up to $\mathrm{n}^{*}-1$; for this reason the number of EO relationships in question is $n^{*}-1$. |
| :---: | :---: | :---: |
| $\mathrm{X}=\mathrm{x}$ | $=$ | total value of the variable in an industry |
| i | $=$ | firm i |
| ${ }^{\text {i }}$ | $=$ | value of the variable for firm $\mathbf{i}$ |
| $\mathrm{Fx}_{\mathrm{i}}$ |  | total value of the variable up to unit $i$. |

## A NOTE ON THE IDENTITY OF $n_{m}^{*}$

AND VALUE OF $L_{s}$
(including Graphs of CR and L in 1969 and 1974)

A Note on the identity of $n_{m}^{*}$ and value of $L_{s}$

1. It is the purpose of this Note to explain and correct an irregularity which occurs in the presentation of results of $n_{m}^{*}$ and $L_{s}$ for certain variables in 1969 and 1970, as shown in Appendix 3, Table 4.
2. The value of $L_{s}$ is determined in relation to Linda indices in the interval between $\mathrm{n}_{\mathrm{h}}^{*}$ < and $\mathrm{n}_{\mathrm{m}}^{*}$. It is implicit in the Linda methodology that $n_{m}^{*}$ is the first minimum of a series of Linda indices encountered when moving from $L_{n}^{*}(2, \ldots \ldots . N)$. However, it is the case that the values of $n_{m}^{*}$ and $L_{s}$ for employment, net profit, gross investments, and own means in 1969 and 1970, and wages and salaries, cash flow and value added in 1969 relate not to the first minimum point of the respective series of Linda indices but to the minimum point of the whole series.
3. The identity of $\mathrm{n}_{\mathrm{m}}^{*}$ on employment in 1969 (as shown in Appendix 3, Table 4) implies that the 55 largest enterprises out of a sample of 72 (in that year) comprise the oligopolistic arena, which is obviously unreasonable. Reference to the accompanying graphs of the Linda indices for the affected variables in 1969, reveals quite clearly the minimum point of the whole of each distribution. Such a point may at best be termed a second or absolute minimum, for the first minimum or point of inflection is distinctly revealed earlier in each series and appears more likely as being representative of delineating one extreme of the oligopolistic arena.
4. The first minimum ( $n_{m}^{*}$ ) can be identified for each variable from the tabulation at Appendix 3, Table 3 a and the corrected values of $n_{m}^{*}, L_{n_{m}}^{*}$ and $L_{s}$ are presented here as Appendix 2, Table 1.

APPENDIX 2 TABLE 1

Corrected values of $n_{m}^{*}, L_{n_{m}}^{*}$, and $L_{s^{\prime}}, 1969$ and 1970

| VARIABLE | 1969 |  |  | 1970 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $n_{m}^{*}$ | $\mathrm{L}_{\mathrm{n}}{ }_{\mathrm{m}}{ }^{\text {a }}$ | $L_{s}$ | $\mathrm{n}_{\mathrm{m}}{ }^{*}$ | $L_{\text {n }}^{\text {m }}$ | $\mathrm{L}_{\mathrm{s}}$ |
| (01) Turnover | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| (02) Employment | 7 | 0.3283 | 0.4545 | 7 | 0.3068 | 0.2961 |
| (03) Wages \& Salaries | 7 | 0.2690 | 0.3603 | n.a. | n.a. | n.a. |
| (04) Net Profit | 9 | 0.2995 | 0.4446 | 8 | 0.2859 | 0.4366 |
| (05) Cash Flow | 8 | 0.2845 | 0.4245 | n.a. | n.a. | n.a. |
| (06) Gross Investment | 8 | 0.3875 | 0.6247 | 9 | 0.2896 | 0.4062 |
| (07) Own Means | 8 | 0.3207 | 0.4015 | 8 | 0.3032 | 0.3923 |
| (11) Net Assets | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| (12) Value Added | 8 | 0.2532 | 0.3388 | n.a. | n.a. | n.a. |

n.a.: not affected

+ The original computed values may be seen in Appendix 3, Tables 3b and 4.

GRAPH 1 Linda Indices ( $L$ ) and Concentration Ratios (CR) in the Beverages Industry

$$
\text { Variable } 01 \text { Turnover }
$$




GRAPH 2 Linda Indices (L) and Concentration Ratios (CR) in the Beverages Industry

Variable 02 Persons Employed



GRAPH 3 Linda Indices (L) and Concentration Ratios (CR) in the Beverages Industry

Variable 03 Wages and Salaries




GRAPH 4 Linda Indices (L) and Concentration Ratios (CR) in the Beverages Industry

Variable 04 Net Profit



GRAPH 5 Linda Indices (L) and Concentration Ratios (CR) in the Beverages Industry

Variable 05 Cash Flow



GRAPH 6 Linda Indices ( $L$ ) and Concentration Ratios (CR) in the Beverages Industry

Variable 06 Gross Investments



GRAPH 7 Linda Indices (L) and Concentration Ratios (CR) in the Beverages Industry

Variable 07 Own Means



GRAPH 8 Linda Indices (L) and Concentration Ratios (CR) in the Beverages Industry

## Variable 11 Net Assets




GRAPH 9 Linda Indices (L) and Concentration Ratios (CR) in the Beverages Industry

Variable 12 Value Added

L


APPENDIX 3
the Computer generated measures of concentration



```
- TABLEAU NO 1 -
```

$\qquad$

``` *
```



PAYS INSTITUT BECTEUR U.A.E.

UNITED REAGOOM DEVELOPMENT ANALYSTS LTD. EEVERAGES INOUSTRY

APPENDIX 3, TABLE 1
PAGE 1


EVOLUTION DES DONNEES GLOBALES : TOTAL DU SECTEUR ET ECHANTILLON

PAYS INSTITUT sECTEUR U:A:E.

UNZTED KINGOOM
DEVELOPMENT ANALYSTS LTD. BEVERAGES IMDUSTRY

```
APPENDIX 3, TABLE I
```


EVOLUTION DES OONNEES GLOBALES : TOTAL DU EECTEUR ET EGHANTILLON


| PAYS | UNETED KINGDOM |
| :--- | :--- |
| INSTITUT | DEVELOPMENT ANALYSTS LTO. |
| EECTEUR | BEVERAGES INOUSTRY |
| U.AE. |  |

APPENDIX 3, TABLE 1


EVOLUTION DES DONMEES GLOBALES TOTAL DU SECTEUR ET ECHANTELLON

| PAYS | UNETED KINGOOM |
| :--- | :--- |
| INSTITUT | DEVELOPMENT ANALYSTS GTO. |
| SECTEUR | BEVERABES INDUSTRY |
| U.ASE. |  |

APPENDIX 3, TABLE 1 BEVERAGES INDUSTRY




TOTAL OU SEGTEUR



INOICES LINOA (L) ET RATIOS OE CDNGENTRATION (CR)


VARIABLE 1 OY CHIFFRE D'AFFAIRES/TURNOVER
* CR $\quad$ \$54.83 $174.50 \quad 180.00 \quad 182.43 \quad 189.27 \quad 893.11 \quad 195.64$




*










* tableau No 3 *
* 1969 - 1974
* 

*******************

PAYS $\quad$ UNITED KINGDOM
INSTITUT : DEVELOPMENT ANALYSTS LTD.
SETTEUR : BEVERAGES IMOUSTRY
U.A.E.

APPENDIX 3, TABLE 3
 VARIABLE 102 EFFECTIF/EMPLOYMENT




* tasleau no 3 *

INDICES LINDA (L) ET RATIOS DE CONEENTRATION (CR)

- $1969=1974$
- 


PAYS I UNITED KINGDOM

INSTITUT : DEVELOPMENT ANALYSTS LTD. ECTEUR BEVERAGES INDUSTRY

APPENDIX 3, TABLE 3
PAGE
3

YARIABLF : 03 MASSE SALARIALE NAGES \& SALARIES










 1972 /









## EVOLUTIONDELACONCENTRATION



```
*********************
*TABLEAUNO 3
```

* 1969 - 1974

```
```

```
* 1969 - 1974
```

```
```

*********************

```
INOZCES LINDA (L) ET RATIOS DE CONCENTRAYION (CR)

\begin{tabular}{ll} 
PAYS & UNITED KINGOOM \\
INSTITUT & : OEVELOPMENT ANALYSTS LTD. \\
SECTEUR & BEVERAGES INOUSTRY
\end{tabular}

APPENDIX 3, TABLE 3
********* VARIABLE 04 bENEFICE NET/NET PROFIT


INDICES LINDA (L) ET RATIOS DE CONCENTRATION (CR,

pays
INSTITUT
SECTEUR
UAA:E.

UNITED KINGDOM
OEVELOPMENT ANALYSTS LTD. BEVERAGES INOUSTRY

APPENDIX 3, TABLE 3
VARTABLE OS CASH FLOW







    - CR 52.11 174.76 \(879.84 \quad: 82.47 \quad 188.94 \quad 193.12\)














PAYS
PAYTITUT: UNITEO KEMGDOM
: DEVELOPMENT ANALYSTS bTD.
U.A:E.
*



















\(\begin{array}{ll}\text { PAYS UNITEOKINGDOM } \\ \text { INSTITUT } & \text { OEVELOPMENT AMAL }\end{array}\)
EECTEUR OEVELOPMENT AMALYSTS LTD. U.A.E. BEVERAGES INDUSTRY

APPENDIX 3, TABLE 3
 VARIASLE 07 CAFITAUX PROPRES/OWN MEANS
\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|r|}{\multirow[t]{9}{*}{}} \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline & & & \\
\hline
\end{tabular}



















\begin{tabular}{lll} 
PAYS & UNITED KINGDOM \\
INSTITUT & : OEVELOPMENT ANALYSTS LTD. \\
SUCTEUR & BEVERAGES INOUSTRY
\end{tabular}

APPENDIX 3, TABLE 3

\begin{tabular}{ll} 
PAYS & UNITEO KINGDOM \\
INSTITUT & : DEVELOPMENT ANALYSTS LTD. \\
SECTEUR & BEVERAGES INDUSTRY
\end{tabular}

\section*{VARIABLE 12 VALUE ADDED}




```

APPENDIX 3

```
\begin{tabular}{ll} 
PAYS & UNITED KINGDOM \\
INSTITUT & OEYELOPMENT ANALYETE LFD. \\
SECTEUR & BEYERAGES INOUSTRY \\
U.A.E. &
\end{tabular}









INSTITUT SECTEUR SECTEUR
U.A.E. BEVERIGES INDUSTRY



TABLE 3a

ANNEE 1972


\(\square\) * MASSE * OZENEFICE * OS8H * THVEST CHIFFRE
-OCAFFAIRES* - SALAREALE MET * FLOW
- INVESTIS
- ERUTS
CAPITA

PROPRES* ASSETS
***

- ***
- TAELEAU NO 3EIS


PAGE 10
\begin{tabular}{ll} 
PAYS & UNETEO KINGDOM \\
INSFETUT & DEYELOPMENT ANALYETE GTO. \\
SECYEUR & 2 \\
UEVERAGES INDUSTAY
\end{tabular}

TABLEAU STRUCTUREL DES COUREES LZNDA


- N

VABlable



\begin{tabular}{|c|c|c|}
\hline . 45285 & - & . 38598 \\
\hline .45315 & + & .38250 \\
\hline .45294 & * & . 37854 \\
\hline .45290 & - & .37406 \\
\hline . 45649 & * & . 37011 \\
\hline . 65795 & * & . 36674 \\
\hline .46215 & * & .36308 \\
\hline . 46407 & - & . 36069 \\
\hline .47299 & * & .35777 \\
\hline . 49389 & - & .35472 \\
\hline . 57488 & - & . 35249 \\
\hline .55127 & \(\cdots\) & .35210 \\
\hline & \(\cdots\) & . 35172 \\
\hline & * & .35181 \\
\hline & * & . 35536 \\
\hline & * & . 35817 \\
\hline & * & . 36322 \\
\hline & * & . 36683 \\
\hline & * & . 37024 \\
\hline & * & .38314 \\
\hline
\end{tabular}
\(.46362^{*} .39246^{*}\) - \(46587^{*}+44421\) *
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline . 66587 & * & . 44421 & * & . 36219 & * & . 36389 \\
\hline .46498 & * & 043813 & * & .36018 & + & . 36185 \\
\hline .46156 & - & .43220 & - & .35849 & * & .35984 \\
\hline . 45904 & - & . 42741 & - & . 35742 & - & . 35804 \\
\hline .65576 & * & . 42392 & - & .35635 & - & . 35647 \\
\hline . 45260 & - & .42011 & - & . 35438 & * & . 35503 \\
\hline . 44940 & - & .41957 & * & . 35327 & * & .35336 \\
\hline . 44832 & * & .49861 & * & . 35220 & * & . 55211 \\
\hline .45133 & * & . 41774 & * & . 35062 & - & .35134 \\
\hline .45232 & * & . 41606 & * & . 35028 & * & . 35088 \\
\hline .45361 & * & . 41495 & * & . 34896 & * & . 34966 \\
\hline . 45354 & - & .41338 & * & . 34819 & * & . 34902 \\
\hline .45403 & * & . 41386 & - & . 34758 & - & .34953 \\
\hline .46131 & * & .41532 & - & .34621 & \(\cdots\) & . 34943 \\
\hline .46731 & - & .41750 & - & .34560 & - & .34961 \\
\hline & * & & * & .34515 & * & . 34979 \\
\hline & - & & \(\cdots\) & .34410 & * & .34881 \\
\hline & * & & * & .34328 & - & .34800 \\
\hline & * & & - & .34274 & * & . 34775 \\
\hline & * & & \(\cdots\) & . 54381 & - & . 3571 \\
\hline
\end{tabular}

-38314 *
.46362
.46004
.4578
.45340 . 38047
.44881 . 37647
\(.44437 \quad .37661\)
\(.44437 \quad .37467\)
.43936
\(.43936 \quad .37207\)
\(.43484 \quad .36945\)
\(.43069 \quad .36749\)
.42709 . 36639 *
\(.42389 \quad .36630\)
\(.42199 \quad .36524\)
\(.42199 \quad .36524\)
\(.41978 * .36613\)
\(.41978 * .36413\)
\(.41724 \quad .36532\)



TABLEAU STRUGTUREL DES COUREES LINDA

```

APPENDIX 3

```

UNITED KINGDOM DEVELOPMENT ANALYSTS LTO. BEVERAGES INDUSTRY
SECTEUR SECTEUR *

ANNEE : 1974




TABLEAU REGAPITULATIF OES INDICES L
\begin{tabular}{ll} 
PAYS & UNITED KINGDOM \\
INSTITUT & OEVELOPMENT ANALYSTS LTO. \\
SECTEUR & BEVERAGES INOUSTRY \\
U.A.E, &
\end{tabular}

APPENDIX 3, TABLE 4

taux de rendements et rang oes entreprises de l eghantillon
* AnNeE 1969*
****************



CONGENTRATION gNDUSTRIELLE
＊＊＊＊＊＊＊＊＊由＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊＊

\section*{TAUX DE RENDEMENTS ET RANG DES ENTREFRISES DE L ECHANTILGON}

＊＊＊＊＊《＊＊＊䌾＊＊＊＊＊



TAUX OE RENOEMENTS ET RANG OES ENTREPRISES DE L ECHANTILLON



taux de rendements et rang des entrepaises oe l echantilgon


TAUX DE RENDEMENTS ET RANG DES ENTREPRISES DE L EGHANTILGON

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline PAYS SECTEUR & \multicolumn{16}{|l|}{UNITED KINGOOM
BEVERAGES INDUSTRY} \\
\hline ENTREPRISES & \({ }^{1} 9\) & & & 06 & & & RATIOS & \(t\) & R1 & \(04 / 01\) & * & R4 & = & 07 & \% & R7= \\
\hline variables & 02 & EFFECTIF & AFFALRES & \[
07
\] & CAPITAUX & PROPRES & nhtaos & & & & & & & & & \\
\hline & 03 & MASSE SAL & AbIALE & 08 & & & & & & \(04 / 07\) & * & R 5 & - & & & \(R 8=\) \\
\hline & 04 & BENEFICE & NET & 09 & & & & & & & & & & & & \\
\hline & 05 & CASH FLOH & & 10 & & & & & R3 & 05/09 & N & R6 & & & & \\
\hline
\end{tabular}


TAUX DE RENDEMENTS ET RANG dES entreprises de b ectantillon


TAUX OE RENDEMENTS ET RANG DES ENTREPRISES DE L EGHANTXLLON
*
* ANNEE 1973 *



TAUX DE RENDEMENTS ET RANG OES ENTREPRISES DE L EGHANTILLON
\(\qquad\)



TAUX DE RENDEMENTS ET RANG DE ENTREPRISES DE 4 EGHANTILLON


\title{
RYTHME DE GROISSANCE DES ENTREPRISES OE L EGHANTILLON
}


rythme de croissance des entreprises de l echantillon

PAYS - UNITEO-K:NGOOM geyerage lidoustry ENTREPRISES MARIGBLES
- BEYERAGE INOUSTRY
- OTHIFFRE O AFFAIRE
O? EFFECTIF
\begin{tabular}{r} 
APPENDIX 3, TABLE 6 \\
\hline
\end{tabular}
 02 EFFECTIF

Q4 BENEFICE NET 05 CASH FLOW

OT GAPITAUX PRCPRES 08
09
03 MASSE SALARIALE
06 INVESTIS BRUT


\section*{rythme de croissance oes entreprises de leghantillon}


RYTHME DE GROISSANCE DES ENTREPRISES OE L ECHANTILLON


\title{
RYTHME OE GROISSANGE DES ENTREPRZSES DE L EGMANTILLON
}
pays
SECTEUR ENTREPRISES YARIARLES

UNITED-KINGOOM geverage industay

O1 CHIFFRE D AFFAIRE O2 EFFECTIF

O4 BENEFICE NET OS CASH FLOW OG INVESTIS GRUT

OV CAPITAUX PROPRES 08


\section*{RYTHME OE CROISSANGE DES EHTREPRISES OE L EGHANTILLON}
UHITEO-KINGOOM
**********************************************************

PAYS
SECTEUR ENTREPRISES VARIABLES beveráue industar
- O1 CHIFFRED AFFAIRE

O2 EFFECTIF
O3 MASSE SALARIALE

O4 EENEFIGE NET
OS CASH FLOW
06 INVESTIS GRUT
\(\square\)
or CAPITAUX PROPRES
09






\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & & & & \multicolumn{7}{|l|}{**********************************************************} \\
\hline PAYS & \multicolumn{4}{|l|}{: UNITED-KINGDOM} & & & & \multicolumn{4}{|r|}{\multirow[t]{2}{*}{APPENDIX 3, IABLE 6}} \\
\hline SECTEUR & ! & \multicolumn{3}{|l|}{beverage inoustry} & & & & & & & \\
\hline ENTREPRISES & & & & & & & & & & & \\
\hline VARIABLES & : & 01 & CHIFFAE 0 & AFFAIRE & & GENEFICE & NET & 07 & CAPITAUX & PROPRES & \\
\hline & & 02 & EFFECTIF & & & CASH FLO & & 08 & & & \\
\hline & & & MasSE SAl & ARIALE & & INYESTIS & BrUT & 09 & & & \\
\hline
\end{tabular}


\title{
RYTHME DE GROISSANGE OES ENTREPRISES DE L ECHANTILLON
}

PAYS
SECTEUR
ENTREPRZSES
VARIABLES


\section*{01 CHIFFRE D AFFAIRE 02 EFFECTIE}

03 MASSE SALARIALE

O4 BENEFICE NET
OS CASH FLOW
OS CASH FLON GRUT
07 GAPITAUX PROPRES 08




rythme oe croissance des entrepryses oe leghantilion

 BEVERAGE INOUSTRY
: 01 CHIFFRE D AFFAIRE 02 EFPECTIF
03 MASSE SALARIALE
OS MASSE SALARIALE

04 SENEFYCE NET
\(\begin{array}{ll}04 \text { BENEFICE NET } & 07 \text { GAPITAUX PROPRES } \\ 05 \text { CASN FLOW } & 08\end{array}\)
APPENDIX 3, TABLE 6 '

08


\section*{1971 / 9972}










\section*{RYTHME DE GROISSANCE OES ENTREPRISES DE L ECHANTILLON}


\section*{rythme de croissance oes entreprises de lechantillon}



\section*{rytime de crotssance des entreprises de lechantillon}


\section*{RYTHME DR GROISSANCE DES ENTREPRISES DE L ECHANTILLON}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \multicolumn{11}{|l|}{} \\
\hline PAYS & 1 & \multicolumn{4}{|l|}{UNITEO-KINGOOM} & & & & & \multicolumn{3}{|r|}{\multirow[t]{2}{*}{APPENDIX 3, TABLE 6}} \\
\hline SECTEUR & 1 & \multicolumn{4}{|l|}{beverage inoustry} & & & & & & & \\
\hline ENTREPRISES VARIABLES & \% & 04 & CHIFFR & RE D & AFBAIRE & 04 & BENEF & 1 CE & & & cAPITAUX & ROPRES \\
\hline & & 02 & EFFECT & +5 & & & CASH & FLOW & & 08 & capstaux & propres \\
\hline & & & Masse & SALA & ARIALE & & INVES & TIS & BRUT & 09 & & \\
\hline
\end{tabular}




- 003 * E200015* +00.2 * *



- 007 EE200016* +00.1 \(x * 00.7 x *+00.5\)
- 008 E200051 +00.1 \%
* \(009+E 200044 *+00.1 \%\)
- 010 E E100029 + + 00.1 \% *


- 014 * E100028
- 015 - E1000227
- 015 * E100027
* 016 * E100011
- 017 - E100052
- 018 - \(\quad 5900050\).
- \(\quad 019 \quad 8100050\)
- \(\quad 010049\)
- 020 - 8100049 *
020 - E100048
- 021 (100046
- 022 E100046
- 100043
\(022 \quad E 100043\)
\(-\quad 023 \quad E 100042\)
\(023 \quad\) E100042
\(024 \quad E 100041\)
- 024 . 0250041 *
\(-\quad 100040\) *
- 025 * 290040 *
- 0260036 *
026 * E100036*
\(\quad 027\) E100035 *
\begin{tabular}{l}
027 * E100035* \\
- 028 * \\
\hline
\end{tabular}

\(029 \quad * \quad 5100032\)
\(+\quad 030 \quad E 900031\)


\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & \multicolumn{3}{|l|}{\multirow[t]{2}{*}{- UNITED-KENGDOM}} & \multicolumn{7}{|l|}{*********************************************************} \\
\hline PAYS & & & & & & & \multicolumn{4}{|c|}{\multirow[t]{2}{*}{APPENDIX 3, TABLE 6}} \\
\hline SECTEUR & \multicolumn{6}{|l|}{1 BEVERAGE INOUSTRY} & & & & \\
\hline \multicolumn{11}{|l|}{\multirow[t]{2}{*}{ENTREPRISES OT CHIFFRE O AFFAIRE OL BENEFIGENET OT CAPITAUX PROPRES}} \\
\hline & 101 & CHIFFRE O & AFFAIRE & 04 & BENEFICE & & 07 & capltaux & PROPRES & 10 \\
\hline & 02 & EFFECTIF & & 05 & CASH FLO & & 08 & & & \\
\hline & 03 & MASSE SAb & ARIALE & 06 & INVESTIS & BRUT & 09 & & & \\
\hline
\end{tabular}


\title{
bythme de crugssance des entreprises de leghantilion
}


BCTE
ENTREPRISES
VARIABLES : 01 CHIFFRED AFFAIRE

\section*{03 MASSE SALARIALE}

O4 BENEFICE NET
05 CASH FLOW
06 INVESTIS BRUT
\(\square\)
APPENDIX 3, TABLE 6
Of CAPITAUX PROPRES
*************
\(\stackrel{*}{*}\)

\section*{1973 / 1974}













\section*{THE THREE MATRICES}

OF

\section*{OLIGOPOLISTIC INTERDEPENDENCE}
- format, symbols and formulae

THE THREE MATRICES OF OLIGOPOLISTIC INTERDEPENDENCE INDUSTRY: COUNTRY:

MATRIX No. 1: OLIGOPOLISTIC INEQUALITY (of \(n^{*}\) firms)
\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} & \(v^{1}\) & 1 & 2 & . \(\cdot\) \\
\hline & & - & & & \\
\hline \(v^{2}\) & Variables & & & & \\
\hline \multicolumn{6}{|l|}{1} \\
\hline \multicolumn{6}{|l|}{2} \\
\hline \(\ldots\) & & & & & \\
\hline
\end{tabular}

MATRIX No. 2: COMPARATIVE PERFORMANCE (of \(n^{*}\) firms)
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{3}{|l|}{\multirow[t]{3}{*}{}} & \(r^{1}\) & 1 & 2 & ... & \multirow[t]{2}{*}{n*} \\
\hline & & & \(\mathrm{E}_{\mathrm{i}}\) & & & & \\
\hline & & & \(\mathrm{I}^{\mathrm{r}}\) & & & & \\
\hline \(\mathrm{r}^{2}\) & \(\mathrm{E}_{\boldsymbol{i}}\) & \(2^{r} i\) & \(7 x_{i}{ }^{1 \times i}\) & 1 I & 1[7 & . & \(1[7\) \\
\hline 1 & & & 7[] & & & & \\
\hline 2 & & & \(7[7\) & & & & \\
\hline ... & & & \(\ldots\) & & & & \\
\hline n* & & & \(7[7\) & & & & \\
\hline
\end{tabular}

MATRIX No. 3: COMPARATIVE GROWTH RATES (of \(n^{*}\) firms)
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{3}{|l|}{\multirow[t]{2}{*}{}} & \(c^{1 i}\) & 1 & 2 & ... & n* \\
\hline & & & \(E_{i}\) & & & & \\
\hline \(c^{4}\) & \(\mathrm{E}_{\mathrm{i}}\) & \(4^{c} i_{\text {, }}\) t & \[
4^{x}, i_{i, ~}^{1 x}
\] & 1 [ & \(1[7\) & \(1[7\) & \(1[7\) \\
\hline 1 & & & 4[] & & & & \\
\hline 2 & & & 4[] & & & & \\
\hline ... & & & ... & & & & \\
\hline n* & & & \(4[7\) & & & & \\
\hline
\end{tabular}

Matrix No. 1
\begin{tabular}{|c|c|}
\hline \(\mathrm{L}_{n}^{*}{ }_{\text {\% }}\) & \(=\) value corresponding to the highest point of the Linda index in the interval from \(n^{*}=2\) to \(n^{*}=n_{m}^{*}\) \\
\hline \(L_{\text {s }}\) & \(=\) arithmetic mean of the \(L\) indices starting from the hypothesis that \(n^{*}=2\) up to \(n_{m}^{*}\) \\
\hline \(v^{\text {i }}\) & \(=\) ranking of a given variable according to the value of the index \(L_{n}{ }_{h}\) < \\
\hline \(v^{2}\) & \(=\) ranking of a given variable according to the value of the index \(\mathrm{L}_{\mathrm{s}}\) \\
\hline SCORE & \(=v^{i}+v^{2 i}\) \\
\hline
\end{tabular}

Matrix No. 2
\(\mathrm{E}_{\mathbf{i}} \quad=\) unit or firm studied
\begin{tabular}{|c|c|}
\hline A, B, C, & \(=\) designation of a given firm; the letters of the alphabet are attributed according to a decreasing ranking of sales in a given year † \\
\hline \(r^{1}\) & \(=\) ranking of a given firm (A, B, C, etc.) in terms of performance calculated on sales ( \(\mathrm{I}^{\mathrm{r}}\) ) \\
\hline \(r^{2}\) & \(=\) ranking of a given firm (A, B, C, etc.) in terms of performance calculated on own capital ( \(2^{r}\) ) \\
\hline \(1[i\) & \(=\) ranking of a given firm ( \(A, B, C\), etc.) in the terms of sales (|X) \\
\hline \(7[i\) & \(=\) ranking of a given firm (A, B, C, etc.) in terms of own capital (7 \({ }^{\mathrm{X}}\) ) \\
\hline \(\mathrm{l}^{r}=\mathrm{I}^{r} \boldsymbol{i}\) & \(=\) ratio \(\frac{\text { net profit }}{\text { sales }}\) (in \%) of a given firm (A, B, C, etc.) \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline \(2^{r}=2^{r}\) & \(=\) ratio \(\frac{\text { net profit }}{\text { own capital }}\) (in \(\%\) ) of a given firm ( \(A, B, C\), etc.) \\
\hline \(1^{x}=1^{x}\) & \(=\) absolute value of the sales of a given firm ( \(A, B, C\), etc.) in thousand millions/millions/thousands of ... \\
\hline \(7^{x}=7^{x}\) & \(=\) absolute value of the own capital of a given firm (A, B, C, etc.) in thousand millions/millions/thousands of ... \\
\hline SCORE & \[
=r^{i}+r^{2}
\] \\
\hline
\end{tabular}

Matrix No. 3
\(t \quad=\) year
\(A, B, C, \quad=\) designation of a given firm in the year \(t\), remaining constant in subsequent years ( \(t+1, t+2, \overline{e f c})\) even when its sales ranking changes.
\(=\) ranking of a given firm (A, B, C, etc.) in terms of growth rates calculated on sales ( \({ }^{c}\) )
\(=\) ranking of a given firm (A, B, C, etc.) in terms of growth rates calculated on net profits ( \({ }_{4}\) c)
\(1[i\)
\(=\) ranking of a given firm ( \(A, B, C\), etc.) in terms of sales established in year \(\dagger\)

\(4^{C}=4^{C}{ }_{i, t}={ }^{t+1} 4^{a^{*}}{ }_{i, t}-{ }^{\dagger} 4^{a^{*}} i, t\)
\(t+11^{a_{i, t}}=\) percentage share of the sales variable relative to the \(n^{*}\) firms or units in the sample, of a given firm (A, B, C, etc.) in year \(t+1\)
\({ }^{\dagger} 1^{a^{*}}{ }_{i, t} \quad=\) percentage share of the sales variable relative to the \(n^{*}\) firms or units in the sample, of a given firm (A, B, C, etc.) in year t
\(t+14^{\alpha^{*}}{ }_{i, t}=\) percentage share of the net profit variable relative to the \(n^{*}\) firms or units in the sample, of a given firm ( \(A, B, C\), etc.) in year ++1
\({ }^{\dagger} 4^{a^{*}}{ }_{i, 1}\)
\(=\) percentage share of the net profit variable relative to the \(n^{*}\) firms or units in the sample of a given firm (A, B, C, etc.) in year \(t\)
\(1^{x}=1^{x}, t\)
\(=\) absolute value of the sales of a given firm ( \(A, B, C\), etc.) in thousand millions/millions/thousands of ... in year t
\(4^{x}=4^{x} \mathbf{i}+\)

SCORE
\[
=C l^{i}+C 4^{i}
\]
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \(v^{1}\) & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
\hline & &  &  & 产京 & \[
\begin{aligned}
& \frac{1}{\hat{0}} \frac{3}{u} \\
& \hline
\end{aligned}
\] & ¢ \({ }_{0}^{\text {¢ }}\) &  & 年 &  &  &  \\
\hline \(\mathrm{v}^{\text {i }}\) & Variables & \[
L_{s}+n_{b}^{*}
\] & 1.21211 & ． 76722 & ． 67324 & ． 63517 & ． 60805 & ． 54364 & ． 54155 & ． 51205 & ． 50259 \\
\hline 1 & Gross Investments & ． 40317 & 2 & & & & & & & & \\
\hline 2 & Employment & ． 37609 & & & & & 7 & & & & \\
\hline 3 & Net Assets & ． 36238 & & & & & & & & & 12 \\
\hline 4 & Wages \＆Salaries & ． 34682 & & & & & & & & 12 & \\
\hline 5 & Turnover & ． 34538 & & & & & & & 12 & & \\
\hline 6 & Own Means & ． 33882 & & & & 10 & & & & & \\
\hline 7 & Net Profit & ． 33815 & & 9 & & & & & & & \\
\hline 8 & Cash Flow & ． 33274 & & & 11 & & & & & & \\
\hline 9 & Value Added & ． 32296 & & & & & & 15 & & & \\
\hline
\end{tabular}

\section*{APPENDIX 5 TABLE 1（b）}

UK BEVERAGES INDUSTRY
OLIGOPOLISTIC INEQUALITY MATRIX， 1970
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \(v^{1}\) & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
\hline & &  & 产妾 &  & \[
{ }_{0}^{c} \sum_{\bar{\delta}}^{n}
\] &  &  & \(\stackrel{ \pm}{\circ}\) & 产亭 & \[
\begin{aligned}
& \infty \\
& \check{6} \\
& 0.0 \\
& \frac{0}{0} \\
& 30
\end{aligned}
\] & \(\frac{9}{9} \frac{8}{9}\) \\
\hline \(\mathrm{v}^{2}\) & Variables & \[
L_{s} L_{n^{*}}
\] & ． 72362 & ． 70383 & ． 64964 & ． 64140 & .61661 & ． 53833 & ． 51465 & ． 50754 & ． 50483 \\
\hline 1 & Cash Flow & ． 40356 & & & & 5 & & & & & \\
\hline 2 & Employment & ． 37539 & & & & & 7 & & & & \\
\hline 3 & Net Assets & ． 35176 & & & & & & & 10 & & \\
\hline 4 & Wages \＆Salaries & ． 34610 & & & & & & & & 12 & \\
\hline 5 & Turnover & ． 34542 & & & & & & 11 & & & \\
\hline 6 & Net Profits & ． 34318 & 7 & & & & & & & & \\
\hline 7 & Own Means & ． 34151 & & & 10 & & & & & & \\
\hline 8 & Gross Investments & ． 34012 & & 10 & & & & & & & \\
\hline 9 & Value Added & .33105 & & & & & & & & & 18 \\
\hline
\end{tabular}

UK BEVERAGES INDUSTRY
OLIGOPOLISTIC INEQUALITY MATRIX， 1971
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \(v^{1}\) & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
\hline & &  &  &  & \[
\text { 育 } \frac{3}{u}
\] &  & 育芯 &  &  & \[
\begin{array}{r}
9 \\
\frac{0}{0} \\
\frac{0}{0} \\
\hline
\end{array}
\] & \(\xrightarrow{\circ}\) \\
\hline \(v^{2}\) & Variables & \[
L_{s} L_{n}^{*} h<
\] & ． 71469 & ． 65514 & ． 64081 & ． 60631 & ． 58451 & ． 55620 & ． 52185 & ． 50973 & ． 50944 \\
\hline 1 & Net Profit & ． 39996 & 2 & & & & & & & & \\
\hline 2 & Own Means & ． 38152 & & 4 & & & & & & & \\
\hline 3 & Cash Flow & ． 37255 & & & 6 & & & & & & \\
\hline 4 & Employment & ． 35814 & & & & & & & 11 & & \\
\hline 5 & Gross Investments & ． 35335 & & & & 9 & & & & & \\
\hline 6 & Net Assets & ． 34452 & & & & & 11 & & & & \\
\hline 7 & Wages \＆Salaries & ． 32362 & & & & & & 13 & & & \\
\hline 8 & Turnover & ． 29550 & & & & & & & & & 17 \\
\hline 9 & Value Added & ． 29532 & & & & & & & & 17 & \\
\hline
\end{tabular}

\section*{APPENDIX 5 TABLE 1(d)}

UK BEVERAGES INDUSTRY
OLIGOPOLISTIC INEQUALITY MATRIX, 1972
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \(v^{1}\) & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
\hline & & \begin{tabular}{l} 
¢ \\
\hline 0 \\
\hline 0 \\
\hline 0 \\
\hline 0
\end{tabular} & \[
\stackrel{\stackrel{n}{\omega}}{\mathbf{Q}}
\] &  &  &  &  & 产产 & - & \[
\begin{aligned}
& \frac{\pi}{5} \frac{3}{0} \\
& \hline 1
\end{aligned}
\] & ¢ \\
\hline \(v^{2}\) & & \(\mathrm{L}_{\mathrm{s}} \mathrm{Ln}^{*} \mathrm{~h}<\) & . 83073 & . 77487 & . 76249 & . 73394 & . 64984 & . 63711 & . 62498 & . 58269 & . 58020 \\
\hline 1 & Net Assets & . 50441 & 2 & & & & & & & & \\
\hline 2 & Employment & . 50136 & & & 5 & & & & & & \\
\hline 3 & Gross Investments & . 46232 & & & & 7 & & & & & \\
\hline 4 & Wages \& Salaries & . 44936 & & 6 & & & & & & & \\
\hline 5 & Own Means & . 44072 & & & & & 10 & & & & \\
\hline 6 & Net Profit & . 38404 & & & & & & 12 & & & \\
\hline 7 & Turnover & . 36106 & & & & & & & 14 & & \\
\hline 8 & Cash Flow & . 36096 & & & & & & & & 16 & \\
\hline 9 & Value Added & . 34858 & & & & & & & & & 18 \\
\hline
\end{tabular}

\section*{APPENDIX 5 TABLE 1（e）}

UK BEVERAGES INDUSTRY
OLIGOPOLISTIC INEQUALITY MATRIX， 1973
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \(v^{1}\) & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
\hline & & \begin{tabular}{l} 
U \\
\hline 0 \\
\hline 0 \\
\hline 0 \\
\hline 0
\end{tabular} &  & 产蔮 & \(\xrightarrow{\circ}\) &  & 气气 & \[
\frac{\stackrel{\rightharpoonup}{0}}{\frac{0}{0}}
\] & \[
\stackrel{\star}{ \pm}
\] &  & 岴 \(\frac{3}{O}\) \\
\hline \(\mathrm{v}^{2}\) & Variables & \(L_{s} L^{\text {Ln }}{ }_{h}^{*}\) & ． 93823 & ． 87459 & ． 77983 & ． 75329 & ． 67469 & ． 66448 & ． 59426 & ． 58853 & ． 54257 \\
\hline 1 & Net Assets & ． 53249 & & 3 & & & & & & & \\
\hline 2 & Employment & ． 50179 & & & & 6 & & & & & \\
\hline 3 & Wages \＆Salaries & ． 50084 & 4 & & & & & & & & \\
\hline 4 & Gross Investments & ． 48356 & & & & & & & & 12 & \\
\hline 5 & Own Means & ． 47194 & & & & & 10 & & & & \\
\hline 6 & Turnover & ． 41923 & & & 9 & & & & & & \\
\hline 7 & Value Added & ． 37957 & & & & & & 13 & & & \\
\hline 8 & Net Profit & ． 36597 & & & & & & & 15 & & \\
\hline 9 & Cash Flow & ． 34254 & & & & & & & & & 18 \\
\hline
\end{tabular}

UK BEVERAGES INDUSTRY
OLIGOPOLISTIC INEQUALITY MATRIX， 1974
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline & & \(v^{1}\) & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
\hline & & \begin{tabular}{l} 
¢ \\
\hline 0 \\
\hline 0 \\
\hline 0 \\
\hline 0
\end{tabular} & \[
{ }^{\hat{\jmath}}
\] &  &  &  & ¢ &  &  & 产交 & 岳 \({ }_{0}\) \\
\hline \(v^{2}\) & & \(L_{s} L_{L_{n}^{*}}^{*}<\) & 1.21546 & ． 97263 & ． 83450 & ． 78569 & ． 77995 & ． 75500 & ． 71017 & ． 58686 & ． 52391 \\
\hline 1 & Own Means & ． 69720 & 2 & & & & & & & & \\
\hline 2 & Wages \＆Salaries & ． 52041 & & 4 & & & & & & & \\
\hline 3 & Net Assets & ． 49375 & & & & & 8 & & & & \\
\hline 4 & Employment & ． 48970 & & & & & & 10 & & & \\
\hline 5 & Gross Investments & ． 45791 & & & 8 & & & & & & \\
\hline 6 & Net Profit & ． 43477 & & & & & & & & 14 & \\
\hline 7 & Turnover & ． 42278 & & & & 11 & & & & & \\
\hline 8 & Value Added & ． 40020 & & & & & & & 15 & & \\
\hline 9 & Cash Flow & ． 39078 & & & & & & & & & 18 \\
\hline
\end{tabular}
8.1: The passing of the final draft of the main report to Brussels for printing and publication coincided with the publication of the European Community's Sixth Report on Competition Policy.* The Sixth Report contains at paragraphs 297 to 305 and in particular Table 10 an analysis of the relationship between size of firm and performance for some 292 firms engaged in various industries and domiciled in the nine EEC member states. This represents an extension of the analysis already carried out in the main beverages report at paragraphs 6.7 to 6.13. The purpose of this Addendum is, therefore, to present data on performance in the UK beverages industry comparable to that which appears in the Sixth Report.

\section*{The Measures of Performance}
8.2: \(\quad\) Four measures of performance have been adopted for this analysis; two were used in the main report (R1 and R2) and defined at paragraph 6.8 but may be re-stated here together with the two new measures:
\[
\begin{aligned}
& { }^{+} \text {Ratio R1 }=\frac{\text { net profit }}{\text { sales }} \\
& { }^{+} \text {Ratio R2 }
\end{aligned}
\]

\footnotetext{
* Sixth Report on Competition Policy EEC Brussels. April 1977.
+ The definitions of each of the variables, \(01,04,05\), and 07 remain that given in the main report at paragraph 5.4.
}

Each of these ratios is computed for each firm in the sample and expressed as a percentage. The resultant percentages are ranked in descending order of size for each ratio and by adding the ranking for each firm on each ratio the ith firms performance score can be obtained. In turn, the performance scores can be ranked enabling performance amongst the sample of firms comprising the UK beverages industry to be compared. Accordingly, tables of comparative performance amongst our sample of firms are presented for 1969 and 1974 in Addendum Tables 1 and 2, respectively. As well as showing the ranking and rates achieved by each firm on each ratio, these Tables also indicate the absolute values and ranking for each firm on turnover, net profit, cash flow and own means.

Results
8.3: The results of this analysis confirm the earlier finding of the main report; namely, that it would appear that smaller firms were more profitable than larger firms. Furthermore, the disparity between size of firm and performance not only exists between brewers on the one hand and distillers, on the other, but also between large and small brewers and large and small distillers.
8.4: Between 1969 and 1974, the dominance of distillers amongst the top-ten performers can be seen to have lessened; in the former year distillers accounted for eight out of the top ten but only five in 1974, with the balance accounted for by brewers. Of these five brewers in 1974, four were comparatively small, regionally based enterprises, the fifth Scottish and Newcastle Breweries Ltd. - was brewing for a national market. Indeed, Scottish and Newcastle at sixth place in the performance scores was the highest placed enterprise from amongst the ten largest firms, as measured by turnover in 1974; The Distillers Co. Ltd. ranking second on turnover took seventeenth position by performance and Allied Breweries Ltd. was twenty-second by performance score yet it was the second largest by absolute
value of turnover. It is notable that Grand Metropolitan Ltd. which ranked first on the turnover variable in 1974 ( \(£ 969.7 \mathrm{~m}\).) achieved the penultimate position in the rankings by performance. However, the qualifications concerning the extent of Grand Metropolitan's interests beyond the beverages industry should not be forgotten.
(All Values are in £m., and rates are per.cent.) Number of firms in Sample \(=69\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { Rank } \\
& \text { in } \\
& \text { Score } \\
& \hline
\end{aligned}
\]} & \multirow[t]{2}{*}{Score} & \[
\text { Ratio } \frac{04}{01}
\] & Ratio \(\frac{04}{07}\) & Ratio \(\frac{05}{01}\) & \[
\text { Ratio } \frac{05}{07}
\] & Turnover (01) & Net Profit (04) & \begin{tabular}{l}
Cash Flow \\
(05)
\end{tabular} & Own Capital (07) & \multirow[t]{2}{*}{Name of Firm} \\
\hline & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline 1 & 11 & \(\begin{array}{lll}1 & \\ & 49.5\end{array}\) & \begin{tabular}{|ll|}
\hline 4 & \\
& 31.8
\end{tabular} & \(\begin{array}{ll}1 & \\ & 53.6\end{array}\) & \begin{tabular}{|ll}
5 & \\
& 34.4
\end{tabular} & \begin{tabular}{|ll}
50 & \\
& 3.8
\end{tabular} & \(\begin{array}{ll}16 & \\ & 1.9\end{array}\) & 16 & \(\begin{array}{ll}24 & \\ & 5.9\end{array}\) & Highland Distillers Co. \\
\hline 2 & 13 & \(\begin{array}{ll}5 & \\ & 26.8\end{array}\) & \(1 \begin{array}{ll}1 & \\ & \\ & 90.4\end{array}\) & 6 & \(1 \begin{array}{ll}1 & \\ & 94.9\end{array}\) & \(\begin{array}{ll}18 & \\ & 15.7\end{array}\) & 11 & 11 & 324 & Edrington Holdings \\
\hline 3 & 20 & \(\begin{array}{ll}6 & \\ & 23.5\end{array}\) & \(\begin{array}{ll}5 & \\ & 29.5\end{array}\) & \(\begin{array}{ll}5 & \\ & 28.3\end{array}\) & \begin{tabular}{|ll}
4 & \\
\\
& 35.6
\end{tabular} & 65 & 45 & 44 & \(\begin{array}{ll}58 & \\ & 1.7\end{array}\) & Glenlivet Distillers \\
\hline 4 & 28 & \begin{tabular}{|ll|}
\hline 12 & \\
& 16.0
\end{tabular} & \begin{tabular}{|ll|}
\hline 3 & \\
& 33.3
\end{tabular} & \(\begin{array}{|ll|}11 & \\ & 19.8\end{array}\) & \(\begin{array}{ll}2 & \\ & 41.3\end{array}\) & \begin{tabular}{|ll}
55 & \\
& 3.4
\end{tabular} & \(\begin{array}{ll}41 & \\ & 0.5\end{array}\) & \(\begin{array}{ll}40 & \\ & 0.7\end{array}\) & \(\begin{array}{ll}59 & \\ & 1.6\end{array}\) & A.G. Barr \& Co. \({ }^{*}\) \\
\hline 5 & 30 & \(\begin{array}{ll}3 & \\ & 34.4\end{array}\) & \begin{tabular}{|ll}
13 & \\
& 24.9
\end{tabular} & \(\begin{array}{ll}3 & \\ & 39.2\end{array}\) & \begin{tabular}{|ll}
11 & \\
& 28.3
\end{tabular} & \(\begin{array}{ll}69 & \\ & 0.7\end{array}\) & \(\begin{array}{ll}62 & \\ & 0.2\end{array}\) & \(\begin{array}{ll}62 & \\ & 0.3\end{array}\) & \(\begin{array}{ll}68 & \\ & 0.9\end{array}\) & MacallanGlenlivet \\
\hline 6 & 38 & \(2 \begin{array}{ll}2 & \\ 41.3\end{array}\) & \(\begin{array}{ll}14 & \\ & 24.6\end{array}\) & \(\begin{array}{ll}2 & \\ & 41.3\end{array}\) & \begin{tabular}{|ll|}
\hline 20 & \\
& 24.6
\end{tabular} & \(\begin{array}{ll}68 & \\ & 0.9\end{array}\) & \(\begin{array}{ll}53 & \\ & 0.4\end{array}\) & 55 & \(\begin{array}{rr}60 & \\ & 1.6\end{array}\) & Robert MacNish \({ }^{+}\) \& Co. \\
\hline 7 & 39 & \(\begin{array}{ll}8 & \\ & 20.3\end{array}\) & \(\begin{array}{ll}10 & \\ & 25.9\end{array}\) & \(\begin{array}{ll}8 & \\ & 21.5\end{array}\) & \begin{tabular}{|ll}
13 & \\
& 27.4
\end{tabular} & \begin{tabular}{|ll}
39 & \\
& 4.9
\end{tabular} & \(\begin{array}{rrr}27 & \\ & 1.0\end{array}\) & \(\begin{array}{ll}29 & \\ & 1.1\end{array}\) & 36 & Drambuie Liqueur Co. \\
\hline 8 & 40 & \(\begin{array}{ll}17 & \\ & 14.6\end{array}\) & \(\begin{array}{ll}2 & \\ & 36.4\end{array}\) & \begin{tabular}{|ll}
18 & \\
& 15.8
\end{tabular} & \(\begin{array}{ll}3 & \\ & 39.4\end{array}\) & \(\begin{array}{ll}23 & \\ & 8.8\end{array}\) & \(\begin{array}{ll}22 & \\ & 1.3\end{array}\) & \(\begin{array}{ll}22 & \\ & 1.4\end{array}\) & \(\begin{array}{ll}39 & \\ & 3.5\end{array}\) & James Burrough \\
\hline 9 & 44 & \(\begin{array}{ll}4 & \\ & 32.6\end{array}\) & \(\begin{array}{|ll|}18 & \\ & 23.6\end{array}\) & \begin{tabular}{|ll}
4 & \\
& 36.2
\end{tabular} & \begin{tabular}{|ll}
18 & \\
& 26.2
\end{tabular} & \(\begin{array}{ll}17 & \\ & 16.9\end{array}\) & \(\begin{array}{ll}10 & \\ & 5.5\end{array}\) & \(\begin{array}{ll}10 & \\ & 6.1\end{array}\) & \(\begin{array}{ll}11 & \\ & 23.4\end{array}\) & \[
\begin{aligned}
& \text { Hiram Walker } \\
& \text { \& Sons }
\end{aligned}
\] \\
\hline 10 & 47 & \(\begin{array}{ll}18 & \\ & 14.3\end{array}\) & \begin{tabular}{|ll|}
\hline 7 & \\
& 27.1
\end{tabular} & \(\begin{array}{|ll|}15 & \\ & 16.3\end{array}\) & \(\begin{array}{ll}7 & \\ & 30.9\end{array}\) & \(\begin{array}{ll}30 & \\ & 6.7\end{array}\) & \[
29
\]
\[
0.9
\] & \(\begin{array}{ll}28 & \\ & 1.1\end{array}\) & \(\begin{array}{ll}40 & \\ & 3.5\end{array}\) & Samuel Webster \& Sons \\
\hline
\end{tabular}
(All Values are in £m., and rates are per.cent.) Number of firms in Sample \(=69\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Rank
in
Score} & \multirow[t]{2}{*}{Score} & Ratio \(\frac{04}{01}\) & Ratio \(\frac{04}{07}\) & Ratio \(\frac{05}{01}\) & Ratio \(\frac{05}{07}\) & Turnover (01) & Net Profit (04) & \[
\begin{gathered}
\text { Cash Flow } \\
(05) \\
\hline
\end{gathered}
\] & Own Capital (07) & \multirow[t]{2}{*}{Name of Firm} \\
\hline & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline 11 & 68 & \begin{tabular}{|rr|}
\hline 26 & \\
& 12.7
\end{tabular} & \begin{tabular}{|ll}
\hline 8 & \\
& 26.9
\end{tabular} & \begin{tabular}{|ll|}
\hline 26 & \\
& 13.9
\end{tabular} & \(\begin{array}{ll}8 & \\ & 29.8\end{array}\) & \(\begin{array}{ll}67 & \\ & 1.9\end{array}\) & \(\begin{array}{ll}63 & \\ & 0.2\end{array}\) & \(\begin{array}{rrr}65 & \\ & 0.3\end{array}\) & \(\begin{array}{rr}69 & \\ & 0.9\end{array}\) & \begin{tabular}{l}
Aylesbury \\
Brewery Co.
\end{tabular} \\
\hline 12 & 69 & \begin{tabular}{|ll}
10 & \\
& 16.6
\end{tabular} & \begin{tabular}{|lr}
31 & \\
& 19.4
\end{tabular} & \begin{tabular}{ll} 
\\
\hline & \\
& 21.2
\end{tabular} & 19 & \begin{tabular}{|ll}
44 & \\
\\
& 4.4
\end{tabular} & \(\begin{array}{ll}34 & \\ & 0.7\end{array}\) & \(\begin{array}{ll}33 & \\ & 0.9\end{array}\) & \(\begin{array}{ll}38 & \\ & 3.8\end{array}\) & North British Distillery Co. \\
\hline 13 & 74 & \begin{tabular}{|ll|}
\hline 19 & \\
& 13.8
\end{tabular} & \(\begin{array}{|rr|}19 & \\ & 23.4\end{array}\) & \begin{tabular}{|ll}
19 & \\
& 15.4
\end{tabular} & \begin{tabular}{|ll}
17 & \\
& 26.2
\end{tabular} & \begin{tabular}{|ll}
63 & \\
\\
& 2.4
\end{tabular} & \begin{tabular}{|ll}
57 & \\
& 0.3
\end{tabular} & \(\begin{array}{ll}58 & \\ & 0.4\end{array}\) & \(\begin{array}{ll}63 & \\ & 1.4\end{array}\) & Buckley's Brewery \\
\hline 14 & 75 & \(20 \begin{array}{ll}20 & \\ & 13.4\end{array}\) & 96 & \begin{tabular}{|ll}
31 & \\
& 13.4
\end{tabular} & \(\begin{array}{ll}15 & \\ & 26.8\end{array}\) & \(66 \quad\)\begin{tabular}{ll} 
\\
\hline
\end{tabular} & \(60 \quad 0.3\) & \(\begin{array}{ll}62 & \\ & 0.3\end{array}\) & \(\begin{array}{ll}67 & \\ & 1.0\end{array}\) & Oldham Brewery Co. \\
\hline 15 & 84 & \(\begin{array}{lll}15 & \\ & 14.9\end{array}\) & \begin{tabular}{|ll}
23 & \\
& 21.2
\end{tabular} & \begin{tabular}{|ll}
16 & \\
& 16.0
\end{tabular} & 30 & \(\begin{array}{lr}1 & \\ & 374.2\end{array}\) & \(1 \begin{array}{ll}1 & \\ & 55.7\end{array}\) & \(1 \begin{array}{ll}1 & \\ & 59.7\end{array}\) & \(1 \begin{array}{ll}1 & \\ & 263.4\end{array}\) & \[
\begin{aligned}
& \text { The Distillers + } \\
& \text { Co. }
\end{aligned}
\] \\
\hline 16 & 88 & \(\begin{array}{ll}32 & \\ & 11.5\end{array}\) & \(\begin{array}{ll}11 & \\ & 25.1\end{array}\) & \begin{tabular}{|ll}
35 & \\
& 12.9
\end{tabular} & \begin{tabular}{|ll}
10 & \\
& 28.3
\end{tabular} & 46 & \begin{tabular}{|ll}
49 & \\
& 0.5
\end{tabular} & \(\begin{array}{ll}50 & \\ & 0.5\end{array}\) & \(\begin{array}{ll}57 & \\ & 1.9\end{array}\) & Hill Thompson \& Co. \\
\hline 17 & 94 & \(\begin{array}{lll}23 & \\ & 12.9\end{array}\) & 24 & \(\begin{array}{|ll|}22 & \\ & 14.4\end{array}\) & \(25 \quad 23.6\) & \begin{tabular}{|ll}
31 & \\
& 6.7
\end{tabular} & \begin{tabular}{|ll}
31 & \\
& 0.8
\end{tabular} & \(\begin{array}{ll}32 & \\ & 0.9\end{array}\) & \(\begin{array}{ll}35 & \\ & 4.1\end{array}\) & \begin{tabular}{l}
Mansfield \\
Brewery Co.
\end{tabular} \\
\hline 17 & 94 & \(7 \begin{array}{ll}7 & \\ & 23.0\end{array}\) & \begin{tabular}{|ll}
36 & \\
& 17.7
\end{tabular} & \(7 \begin{array}{ll}7 \\ \\ & 24.6\end{array}\) & \begin{tabular}{|ll}
44 & \\
& 18.9
\end{tabular} & \begin{tabular}{|ll}
54 & \\
& 3.4
\end{tabular} & \(\begin{array}{ll}32 & \\ & 0.8\end{array}\) & \begin{tabular}{|ll}
35 & \\
& 0.8
\end{tabular} & \begin{tabular}{|ll}
33 & \\
& 4.4
\end{tabular} & MacDonald Martin Distilleries \\
\hline 19 & 96 & \begin{tabular}{|ll}
21 & \\
& 13.2
\end{tabular} & \(21 \begin{array}{ll}21 & \\ & 22.6\end{array}\) & \begin{tabular}{|cc}
28 & \\
& 13.8
\end{tabular} & \begin{tabular}{|cc}
26 & \\
& 23.6
\end{tabular} & \begin{tabular}{|ll}
48 & \\
& 3.9
\end{tabular} & \begin{tabular}{|cc}
44 & \\
& 0.5
\end{tabular} & \(\begin{array}{ll}47 & \\ & 0.5\end{array}\) & \begin{tabular}{|ll}
51 & \\
& 2.3
\end{tabular} & Boddingtons Breweries \\
\hline 20 & 97 & \[
\begin{array}{|ll|}
\hline 27 & \\
& 12.4
\end{array}
\] & \[
\begin{array}{|ll}
\hline 22 & \\
& 21.4
\end{array}
\] & \(\begin{array}{|cc|}27 & \\ & 13.9\end{array}\) & \[
\begin{array}{|cc|}
\hline 21 & \\
& 12.0
\end{array}
\] & \[
\begin{array}{|ll} 
& 62 \\
& 2.6
\end{array}
\] & \[
\begin{array}{ll}
56 & \\
& 0.3
\end{array}
\] & \(\begin{array}{ll}57 & \\ & 0.4\end{array}\) & \[
\begin{array}{ll}
\hline 62 & \\
& 1.5
\end{array}
\] & Charles Wells \\
\hline
\end{tabular}
(All Values are in £m., and rates are per.cent.) Number of firms in Sample \(=69\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline & Score & Ratio \(\frac{04}{01}\) & Ratio \(\frac{04}{07}\) & \[
\text { Ratio } \frac{05}{01}
\] & \[
\text { Ratio } \frac{05}{07}
\] & Turnover (01) & \[
\begin{gathered}
\text { Net Profit } \\
(04)
\end{gathered}
\] & \[
\begin{gathered}
\hline \text { Cash Flow } \\
(05)
\end{gathered}
\] & Own Capital (07) & Name of Firm \\
\hline Score & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline 21 & 98 & \begin{tabular}{|lr|}
\hline 27 \\
\\
\hline
\end{tabular} & \begin{tabular}{|lr|}
\hline 27 & \\
& 20.1 \\
\hline
\end{tabular} & \(\begin{array}{ll}21 & \\ & 14.7\end{array}\) & \(\begin{array}{|ll|}23 & \\ & 23.8\end{array}\) & \begin{tabular}{ll}
7 & \\
& 117.2 \\
\hline
\end{tabular} & \begin{tabular}{rr}
6 \\
& 14.5 \\
\hline
\end{tabular} & \begin{tabular}{|rr|}
\hline 7 & \\
& 17.2 \\
\hline
\end{tabular} & \begin{tabular}{ll}
6 & \\
\\
& 72.4 \\
\hline
\end{tabular} & Scottish \& Newcastle Breweries \\
\hline 22 & 107 & 50 & \(\begin{array}{ll}6 & \\ & 27.1\end{array}\) & \(\begin{array}{lll}45 & \\ & 11.3\end{array}\) & \(\begin{array}{ll}6 & \\ & 34.3\end{array}\) & \(\begin{array}{lll}5 & \\ & 162.6\end{array}\) & \(\begin{array}{ll}7 & \\ \\ & 14.5\end{array}\) & \(\begin{array}{ll}6 & \\ & 18.3\end{array}\) & \(\begin{array}{ll}8 & \\ & 53.4\end{array}\) & Arthur Guinness Son \& Co. \\
\hline 23 & 121 & \(\begin{array}{ll}24 & \\ & 12.7\end{array}\) & \(\begin{array}{|ll|}35 & \\ & 18.1\end{array}\) & \(\begin{array}{lll}24 & \\ & 14.4\end{array}\) & \begin{tabular}{|ll|}
\hline 38 & \\
& 20.4
\end{tabular} & \(\begin{array}{ll}15 & \\ & 22.6\end{array}\) & \(\begin{array}{ll}14 & \\ & 2.9\end{array}\) & \(\begin{array}{ll}14 & \\ & 3.2\end{array}\) & \(\begin{array}{ll}13 & \\ & 15.9\end{array}\) & Seagram Distillers \\
\hline 24 & 130 & \(\begin{array}{|ll|}36 & \\ & 10.8\end{array}\) & \begin{tabular}{|ll|}
\hline 26 & \\
& 20.4
\end{tabular} & \(\begin{array}{|ll|}40 & \\ & 12.2\end{array}\) & \begin{tabular}{|ll}
28 & \\
& 23.0
\end{tabular} & \(\begin{array}{ll}22 & \\ \\ & 9.3\end{array}\) & \(\begin{array}{ll}28 & \\ & 1.0\end{array}\) & \(\begin{array}{ll}27 & \\ & 1.1\end{array}\) & \(\begin{array}{ll}31 & \\ & 4.9\end{array}\) & Greene, King \& Sons \\
\hline 25 & 132 & \(\begin{array}{ll}14 & \\ & 15.0\end{array}\) & \begin{tabular}{|ll}
48 & \\
& 15.6
\end{tabular} & \(\begin{array}{|ll|}17 & \\ & 15.8\end{array}\) & \(\begin{array}{|ll|}53 & \\ & 16.5\end{array}\) & \(\begin{array}{ll}51 & \\ & 3.6\end{array}\) & \(\begin{array}{ll}43 & \\ & 0.5\end{array}\) & 450 & \(\begin{array}{ll}42 & \\ & 3.4\end{array}\) & Eldridge Pope \& Co. \\
\hline 25 & 132 & \(\begin{array}{ll}51 & \\ & 8.8\end{array}\) & \(\begin{array}{|ll|}12 & \\ & 24.9\end{array}\) & \begin{tabular}{|rr|}
\hline 57 & \\
& 9.8 \\
\hline
\end{tabular} & \(\begin{array}{lll}12 & \\ & 27.7\end{array}\) & \(\begin{array}{ll}58 \\ & 3.0\end{array}\) & \(\begin{array}{ll}61 & \\ & 0.3\end{array}\) & \(\begin{array}{ll}60 & \\ & 0.3\end{array}\) & \(\begin{array}{ll}66 & \\ & 1.1\end{array}\) & St. Austell Brewery \\
\hline 27 & 135 & \(\begin{array}{ll}55 & \\ & 8.3\end{array}\) & \(\begin{array}{|ll|}17 & \\ & 23.8\end{array}\) & \(\begin{array}{lll}54 & \\ & 10.1\end{array}\) & \[
\begin{array}{ll|}
\hline 9 & \\
& 28.9
\end{array}
\] & \(35 \quad 3.9\) & \(\begin{array}{ll}46 \\ & 0.5\end{array}\) & \(\begin{array}{rr} \\ 43 & \\ & 0.6\end{array}\) & \(\begin{array}{ll} & \\ & \\ & 2.1\end{array}\) & Young \& Co's Brewery \\
\hline 28 & 137 & 49 & \(\begin{array}{|ll|}16 & \\ & 24.3\end{array}\) & \begin{tabular}{|ll|}
\hline 56 & \\
& 9.8
\end{tabular} & \(\begin{array}{ll}16 & \\ & 26.5\end{array}\) & \(\begin{array}{ll}9 & \\ & 100.0\end{array}\) & 9 & 96 & \(\begin{array}{ll}9 & \\ & 37.1\end{array}\) & International + Distillers and Vintners \\
\hline 29 & 140 & \begin{tabular}{|ll|}
\hline 29 & \\
& 12.3
\end{tabular} & \begin{tabular}{|ll|}
\hline 44 & \\
& 16.1
\end{tabular} & \(\begin{array}{lll}23 & \\ & 14.4\end{array}\) & \begin{tabular}{|ll|}
\hline 44 & \\
& 18.9
\end{tabular} & \begin{tabular}{|ll}
20 & \\
& 12.7
\end{tabular} & \(20 \quad 1.6\) & \(\begin{array}{rr} \\ 20 & \\ \\ & 1.8\end{array}\) & \(\begin{array}{ll}16 & \\ & 9.7\end{array}\) & Wolverhampton \& Dudley Breweries \\
\hline 29 & 140 & \begin{tabular}{|l|l|}
\hline 45 \\
\hline
\end{tabular} & \(\begin{array}{ll}30 & \\ & 19.8\end{array}\) & \[
\begin{array}{|ll|}
\hline 43 & \\
& 11.4 \\
\hline
\end{array}
\] & \[
\begin{array}{|ll|}
\hline 22 & \\
& 24.0
\end{array}
\] & \(\begin{array}{ll}33 & \\ \\ & 6.2\end{array}\) & \(\begin{array}{ll}37 & \\ & 0.6\end{array}\) & \(\begin{array}{ll}38 & \\ & \\ & 0.7\end{array}\) & \(\begin{array}{rr}47 \\ & \\ & \\ & \end{array}\) & Hull Brewery \\
\hline
\end{tabular}
(All Values are in £m., and rates are per.cent.)
Number of firms in Sample \(=69\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { Rank } \\
& \text { in } \\
& \text { Score } \\
& \hline
\end{aligned}
\]} & \multirow[t]{2}{*}{Score} & Ratio \(\frac{04}{01}\) & Ratio \(\frac{04}{07}\) & Ratio \(\frac{05}{01}\) & Ratio \(\frac{05}{07}\) & Turnover (01) & \[
\begin{aligned}
& \text { Net Profit } \\
& \text { (04) } \\
& \hline
\end{aligned}
\] & \[
\begin{aligned}
& \text { Cash Flow } \\
& (05)
\end{aligned}
\] & Own Capita (07) & \multirow[t]{2}{*}{Name of Firm} \\
\hline & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & & \\
\hline & & 37 & 33 & 38 & 33 & 19 & 18 & 17 & 19 & \\
\hline 31 & 141 & 10.7 & 18.6 & 12.7 & 22.0 & 15.6 & 1.7 & 1.9 & 9.0 & Brickwoods \\
\hline & & 38 & 34 & 37 & 32 & 2 & 2 & 2 & 3 & Alli \\
\hline 31 & 141 & 10.5 & 18.1 & 12.8 & 22.1 & 345.5 & 36.3 & 44.3 & 200.6 & Breweries \\
\hline & & 40 & 37 & 33 & 31 & 8 & 8 & 8 & 7 & \\
\hline 31 & 141 & 10.2 & 17.3 & 13.1 & 22.1 & 115.4 & 11.8 & 15.1 & 68.3 & Courage \\
\hline & & 9 & 60 & 10 & 63 & 38 & 25 & 26 & 17 & \\
\hline 34 & 142 & 19.9 & 11.3 & 21.2 & 12.0 & 5.4 & 1.1 & 1.1 & 9.5 & \[
\begin{aligned}
& \text { Matthe } \\
& \text { \& Co. }
\end{aligned}
\] \\
\hline & & 11 & 58 & 12 & 61 & 59 & 48 & 47 & 37 & \\
\hline 34 & 142 & 16.0 & 12.6 & 18.1 & 14.2 & 3.0 & 0.5 & 0.5 & 3.8 & Hansons \\
\hline & & 33 & 38 & 32 & 41 & 32 & 35 & 34 & 34 & Davenports C.B. \\
\hline 36 & 144 & 11.4 & 16.6 & 13.3 & 19.4 & 6.3 & 0.7 & 0.8 & 4.3 & and Brewery (Holdinas) \\
\hline & & 15 & 56 & 14 & 60 & 29 & 23 & 23 & 18 & Marston, \\
\hline 37 & 145 & 14.9 & 13.0 & 17.1 & 15.0 & 7.8 & 1.2 & 1.3 & 8.9 & Thompson \& Evershed \\
\hline & & 47 & 29 & 47 & 27 & 21 & 24 & 24 & 27 & \\
\hline 38 & 150 & 9.3 & 19.8 & 10.1 & 23.4 & 12.0 & 1.1 & 1.3 & 5.6 & J.W. Cameron \& Co. \\
\hline & & 22 & 55 & 20 & 54 & 25 & 26 & 25 & 20 & \\
\hline 39 & 151 & 12.9 & 13.9 & 14.9 & 16.2 & 8.3 & 1.1 & 1.2 & 7.7 & Home Brewery \\
\hline & & 31 & 49 & 25 & 46 & 6 & 5 & 5 & 5 & \\
\hline 39 & 151 & 11.8 & 15.5 & 14.2 & 18.6 & 143.9 & 17.0 & 20.4 & 109.7 & Watney-Mann \\
\hline
\end{tabular}
(All Values are in fm. , and rates are per.cent.)
Number of firms in Sample \(=69\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \[
\begin{aligned}
& \text { Rank } \\
& \text { in }
\end{aligned}
\] & \multirow[t]{2}{*}{Score} & Ratio \(\frac{04}{01}\) & Ratio \(\frac{04}{07}\) & Ratio \(\frac{05}{01}\) & Ratio \(\frac{05}{07}\) & Turnover (01) & Net Profit (04) & Cash Flow (05) & Own Capital (07) & \multirow[t]{2}{*}{Name of Firm} \\
\hline Score & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline & & 43 & 28 & 49 & 34 & 14 & 15 & 15 & 14 & Vaux \\
\hline 41 & 154 & 9.7 & 20.0 & 10.7 & 22.0 & 23.4 & 2.3 & 2.5 & 11.4 & Breweries \\
\hline & & 13 & 64 & 13 & 64 & 51 & 38 & 41 & 25 & Plymouth \\
\hline 41 & 154 & 15.8 & 9.4 & 17.7 & 10.8 & 3.6 & 0.6 & 0.6 & 5.9 & Breweries \\
\hline & & 30 & 47 & 30 & 51 & 47 & 46 & 49 & 45 & Burtonwood \\
\hline 43 & 158 & 12.2 & 15.7 & 13.5 & 17.4 & 4.0 & 0.5 & 0.5 & 3.1 & Brewery Co. (Forshaws) \\
\hline & & 65 & 15 & 66 & 14 & 10 & 17 & 18 & 21 & Teacher + \\
\hline 44 & 160 & 5.7 & 24.3 & 6.4 & 27.0 & 30.9 & 1.8 & 1.9 & 7.3 & (Distillers) \\
\hline & & 39 & 40 & 39 & 42 & 12 & 13 & 13 & 12 & Truman, \\
\hline 44 & 160 & 10.4 & 16.3 & 12.2 & 19.2 & 28.3 & 2.9 & 3.4 & 17.9 & Hanbury, Buxton \& Co. \\
\hline & & 56 & 20 & 61 & 24 & 43 & 55 & 56 & 61 & \\
\hline 46 & 161 & 8.0 & 22.8 & 8.4 & 23.8 & 4.4 & 0.4 & 0.4 & 1.6 & Robinson \\
\hline & & 42 & 42 & 41 & 39 & 37 & 39 & 39 & 43 & \\
\hline 47 & 164 & 9.9 & 16.2 & 12.1 & 19.9 & 5.6 & 0.6 & 0.7 & 3.4 & \& Co. \\
\hline & & 25 & 54 & 29 & 57 & 34 & 33 & 37 & 30 & \\
\hline 48 & 165 & 12.6 & 14.2 & 13.5 & 15.1 & 6.0 & 0.8 & 0.8 & 5.4 & \& Sons \\
\hline & & 34 & 51 & 34 & 59 & 26 & 30 & 30 & 23 & \\
\hline 49 & 168 & 11.1 & 15.1 & 13.1 & 15.0 & 8.1 & 0.9 & 1.0 & 5.9 & (Tadcaster) \\
\hline & & 54 & 39 & 50 & 36 & 40 & 52 & 51 & 50 & \\
\hline 50 & 179 & 8.4 & 16.4 & 10.6 & 20.8 & 4.8 & 0.4 & 0.5 & 2.5 & \& Turner \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline (All & 促 & £m. & d rates & & & & & Number of & s in Sam & \\
\hline Rank in & Score & Ratio \(\frac{04}{01}\) & Ratio \(\frac{04}{07}\) & Ratio \(\frac{05}{01}\) & Ratio 05 & \[
\begin{aligned}
& \text { Turnover } \\
& \text { (01) }
\end{aligned}
\] & \begin{tabular}{l}
Net Profit \\
(04)
\end{tabular} & \[
\begin{aligned}
& \text { Cash Flow } \\
& (05)
\end{aligned}
\] & Own Capital (07) & Name of Firm \\
\hline Score & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline 51 & 183 & \begin{tabular}{|rr|}
\hline 41 & \\
& 9.9
\end{tabular} & \(\begin{array}{|ll|}52 & \\ & 15.1\end{array}\) & \(\begin{array}{ll}42 & \\ & 11.8\end{array}\) & \begin{tabular}{|ll|}
\hline 48 & \\
& 17.9 \\
\hline
\end{tabular} & \(\begin{array}{ll}3 & \\ & 315.1\end{array}\) & \begin{tabular}{rr}
3 & \\
& 31.3 \\
\hline 8
\end{tabular} & \begin{tabular}{lr}
3 & \\
& 37.0 \\
\hline
\end{tabular} & 20207.3 & Bass Charrington \\
\hline 52 & 185 & \begin{tabular}{|ll|}
\hline 60 & \\
& 7.0
\end{tabular} & \begin{tabular}{|ll|}
\hline 41 & \\
& 16.3
\end{tabular} & 55 & \(\begin{array}{|rr|}29 & \\ \\ \end{array}\) & \begin{tabular}{|ll}
41 & \\
& 4.5
\end{tabular} & \(\begin{array}{ll}58 & \\ & 0.3\end{array}\) & \(\begin{array}{ll}53 & \\ & 0.4\end{array}\) & \(\begin{array}{ll}56 & \\ & 1.9\end{array}\) & Hall \& Woodhouse \\
\hline 52 & 185 & \(\begin{array}{ll}48 \\ & 9.0\end{array}\) & \(\begin{array}{ll}50 & \\ & 15.2\end{array}\) & \begin{tabular}{|ll|}
\hline 44 & \\
& 11.3
\end{tabular} & \begin{tabular}{|ll}
43 & \\
& 19.0
\end{tabular} & \(4 \begin{array}{ll}4 & \\ & 198.0\end{array}\) & \(\begin{array}{ll}4 & \\ & 17.9\end{array}\) & \(\begin{array}{ll}4 & \\ \\ & 22.4\end{array}\) & \(\begin{array}{ll}4 & \\ & 117.8\end{array}\) & Whitbread \& Co. \\
\hline 54 & 187 & \(\begin{array}{lll}35 & \\ & 10.9\end{array}\) & \(\begin{array}{|ll|}57 & \\ & 12.7\end{array}\) & \(\begin{array}{|ll|}36 & \\ & 12.9\end{array}\) & \begin{tabular}{|ll}
59 & \\
& 15.0
\end{tabular} & \[
\begin{array}{|ll|}
\hline 11 & \\
& 29.6
\end{array}
\] & \begin{tabular}{|ll}
12 & \\
& 3.2
\end{tabular} & \(\begin{array}{ll}12 & \\ & 3.8\end{array}\) & \(\begin{array}{ll}10 & \\ & 25.4\end{array}\) & Greenhall Whitley \& Co. \\
\hline 54 & 187 & \begin{tabular}{ll|}
52 & \\
& 8.7
\end{tabular} & \(\begin{array}{ll}43 & \\ & 16.1\end{array}\) & \(\begin{array}{|ll|}52 & \\ & 10.5\end{array}\) & \begin{tabular}{|rr|}
\hline 40 & \\
& 19.5
\end{tabular} & \begin{tabular}{|ll|}
\hline 45 & \\
& 4.2
\end{tabular} & \(\begin{array}{ll}54 & \\ & 0.4\end{array}\) & 54 & \(\begin{array}{ll}52 & \\ \\ & 2.3\end{array}\) & McMullen \& Sons \\
\hline 56 & 194 & \begin{tabular}{|ll|}
\hline 67 & \\
& 5.2
\end{tabular} & \(25 \quad 20.5\) & \begin{tabular}{|ll|}
\hline 67 & \\
& 5.6
\end{tabular} & \begin{tabular}{|ll}
35 & \\
& 22.0
\end{tabular} & \[
\begin{array}{|ll|}
\hline 13 & \\
& 27.8
\end{array}
\] & \(\begin{array}{ll}21 & \\ & 1.4\end{array}\) & \(\begin{array}{ll}21 & \\ & 1.6\end{array}\) & \(22 \quad 7.0\) & \begin{tabular}{l}
Arthur Bell \\
\& Sons
\end{tabular} \\
\hline 56 & 194 & \begin{tabular}{|ll|}
\hline 46 & \\
& 9.4
\end{tabular} & \(\begin{array}{|ll|}45 & \\ & 15.9\end{array}\) & \begin{tabular}{|ll|}
\hline 53 & \\
& 10.4
\end{tabular} & \begin{tabular}{|ll|}
\hline 50 & \\
& 17.7
\end{tabular} & \begin{tabular}{|ll}
36 & \\
& 5.8
\end{tabular} & \(\begin{array}{lll}42 & \\ & 0.5\end{array}\) & \begin{tabular}{ll}
42 \\
& \\
\\
& \\
\hline 66
\end{tabular} & \begin{tabular}{|ll}
44 \\
\\
& 3.4
\end{tabular} & Higsons Brewery \\
\hline 58 & 195 & \begin{tabular}{|ll|}
\hline 62 & \\
& 6.9
\end{tabular} & \begin{tabular}{|ll|}
\hline 32 & \\
& 18.8
\end{tabular} & \begin{tabular}{|ll|}
\hline 64 & \\
& 7.6
\end{tabular} & \(\begin{array}{|ll|}37 & \\ & 20.6\end{array}\) & 56 & \(\begin{array}{ll}64 & \\ & 0.2\end{array}\) & \(\begin{array}{ll}66 & \\ & 0.2\end{array}\) & \(65 \quad 1\) & Dalmore, Whyte \({ }^{+}\) \& Mackay \\
\hline 59 & 195 & \begin{tabular}{|ll|}
\hline 44 \\
& \\
& 9.6 \\
\hline
\end{tabular} & \begin{tabular}{|ll|}
\hline 53 & \\
& 14.4
\end{tabular} & \begin{tabular}{|ll}
46 & \\
& 11.1
\end{tabular} & \begin{tabular}{|ll}
52 & \\
& 16.8
\end{tabular} & \begin{tabular}{|ll}
42 & \\
& 4.5
\end{tabular} & \[
\begin{array}{ll}
51 & \\
\hline
\end{array}
\] & 52 & \(\begin{array}{ll}46 & \\ & 3.0\end{array}\) & Border Breweries (Wrexham) \\
\hline 60 & 211 & \begin{tabular}{|ll|}
\hline 58 & \\
& 7.7 \\
\hline
\end{tabular} & \[
\begin{array}{ll}
\hline 46 & \\
& 15.8
\end{array}
\] & \begin{tabular}{|ll}
60 & \\
& 8.8
\end{tabular} & \begin{tabular}{|ll|}
\hline 47 & \\
& 18.0
\end{tabular} & \begin{tabular}{|ll}
16 & \\
& 20.9
\end{tabular} & \(19 \quad 1.6\) & \(\begin{array}{ll}19 & \\ & 1.8\end{array}\) & \(\begin{array}{ll}15 & \\ & 10.3\end{array}\) & Long John International \\
\hline
\end{tabular}


FOR NOTES SEE END OF ADDENDUM TABLE 2.

COMPARATIVE PERFORMANCE IN THE UK BEVERAGES INDUSTRY
(All Values are in \(\mathrm{£m}\)., and rates are per.cent.) Number of firms in Sample \(=58\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Rank
in
Score} & \multirow[t]{2}{*}{Score} & \[
\text { Ratio } 04
\] & \[
\text { Ratio } \frac{04}{07}
\] & \[
\text { Ratio } \frac{05}{01}
\] & \[
\text { Ratio } \frac{05}{07}
\] & Turnover (01) & \[
\begin{aligned}
& \text { Net Profit } \\
& \text { (04) }
\end{aligned}
\] & Cash Flow (05) & Own Capital (07) & \multirow[t]{2}{*}{Name of Firm} \\
\hline & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline 1 & 14 & \(\begin{array}{ll}2 & \\ & 29.3\end{array}\) & \(\begin{array}{ll}5 & \\ & 27.1\end{array}\) & 33.5 & \(\begin{array}{ll}6 & \\ & 30.9\end{array}\) & \(\begin{array}{ll}58 & \\ & 1.6\end{array}\) & \(\begin{array}{ll}53 & \\ & 0.5\end{array}\) & 54 & \(\begin{array}{ll}56 & \\ & 1.8\end{array}\) & MacallanGlenlivet \\
\hline 2 & 15 & \(4{ }^{4} 24\) & \(\begin{array}{ll}3 & \\ & 29.0\end{array}\) & \(4 \begin{array}{ll}4 & \\ \\ & 26.8\end{array}\) & \(\begin{array}{ll}4 & \\ & 31.9\end{array}\) & \begin{tabular}{|rr}
30 & \\
& 10.8
\end{tabular} & \(\begin{array}{ll}15 & \\ & 2.6\end{array}\) & \begin{tabular}{|ll}
15 & \\
& 2.9
\end{tabular} & \(\begin{array}{ll}23 & \\ & 9.1\end{array}\) & Highland Distilleries Co. \\
\hline 3 & 24 & \(1 \begin{array}{ll}1 & \\ & 30.1\end{array}\) & \(\begin{array}{lll}7 & \\ & 24.8\end{array}\) & \(\begin{array}{ll}2 & \\ & 31.9\end{array}\) & \(14 \begin{array}{ll}14 & \\ & 26.3\end{array}\) & \(\begin{array}{ll}14 & \\ & 34.7\end{array}\) & \(\begin{array}{ll}9 & \\ & 10.4\end{array}\) & \(\begin{array}{ll}9 & \\ & 11.1\end{array}\) & \(10 \begin{array}{ll}10 & \\ & 42.1\end{array}\) & Hiram Walker \& Sons \\
\hline 4 & 40 & \(\begin{array}{ll}10 & \\ & 18.3\end{array}\) & \(\begin{array}{ll}11 & \\ & 23.4\end{array}\) & \begin{tabular}{|ll|}
\hline 8 & \\
& 21.9
\end{tabular} & \(\begin{array}{ll}11 & \\ & 26.9\end{array}\) & \(25 \begin{array}{ll} & \\ & 12.2\end{array}\) & \(\begin{array}{ll}19 & \\ & 2.2\end{array}\) & \(\begin{array}{ll}19 & \\ & 2.6\end{array}\) & \begin{tabular}{|ll}
21 & \\
& 9.5
\end{tabular} & Glenlivet Distillers \\
\hline 5 & 47 & \(25 \quad 11.6\) & \begin{tabular}{|lr}
4 & \\
& 27.4
\end{tabular} & \(\begin{array}{|ll|}16 & \\ & 15.0\end{array}\) & \(\begin{array}{ll}2 & \\ & 35.2\end{array}\) & \(\begin{array}{ll}24 & \\ & 12.8\end{array}\) & \(\begin{array}{ll}26 & \\ & 1.5\end{array}\) & \(\begin{array}{ll}25 & \\ & 1.9\end{array}\) & \begin{tabular}{|ll}
38 & \\
& 5.4
\end{tabular} & North British Distillery Co \\
\hline 6 & 48 & \(\begin{array}{|rr|}20 & \\ & 12.4\end{array}\) & \(6 \begin{array}{ll}6 & \\ & 26.2\end{array}\) & \(\begin{array}{|ll|}17 & \\ & 14.9\end{array}\) & \(\begin{array}{ll}5 & \\ & 31.4\end{array}\) & \(\begin{array}{ll}8 & \\ & 199.7\end{array}\) & 6 & \(6 \quad 29.8\) & 8 \begin{tabular}{rr}
8 \\
\hline
\end{tabular} & Scottish \& Newcastle Breweries \\
\hline 7 & 50 & \(\begin{array}{ll}11 & \\ & 18.0\end{array}\) & \begin{tabular}{|ll}
14 & \\
& 22.8
\end{tabular} & \begin{tabular}{|ll}
10 & \\
& \\
& 20.6
\end{tabular} & \(\begin{array}{|ll|}15 & \\ & 26.2\end{array}\) & \begin{tabular}{|ll}
32 & \\
& 10.3
\end{tabular} & \(23 \quad 1\) & \(\begin{array}{rr}23 & \\ & 2.1\end{array}\) & \begin{tabular}{|lr}
27 & \\
& 8.1
\end{tabular} & \begin{tabular}{l}
Mansfield \\
Brewery Co.
\end{tabular} \\
\hline 7 & 50 & 8 & \begin{tabular}{|ll}
10 & \\
& 23.7
\end{tabular} & \begin{tabular}{|ll}
11 & \\
& 19.9
\end{tabular} & \(21 \quad 24\) & \begin{tabular}{|ll}
41 & \\
& 7.7
\end{tabular} & \(\begin{array}{ll}27 & \\ & 1.5\end{array}\) & \(\begin{array}{ll}29 & \\ & 1.5\end{array}\) & \begin{tabular}{|ll}
35 & \\
& 6.2
\end{tabular} & Boddingtons Breweries \\
\hline 9 & 55 & \(\begin{array}{|ll|}13 & \\ & 15.9\end{array}\) & \begin{tabular}{|ll|}
\hline 17 & \\
& 22.5
\end{tabular} & \(\begin{array}{|ll|}13 & \\ & 19.0\end{array}\) & \(\begin{array}{|rr|}12 & \\ & 27.0\end{array}\) & \begin{tabular}{|ll}
16 & \\
& 21.6
\end{tabular} & \(\begin{array}{ll}13 & \\ & 3.4\end{array}\) & \(\begin{array}{ll}13 & \\ & 4.1\end{array}\) & \(\begin{array}{ll}15 & \\ & 15.2 \\ & \end{array}\) & Wolverhampton \& Dudley Breweries \\
\hline 10 & 56 & \(\begin{array}{ll}7 & \\ & \\ & 20.8\end{array}\) & \begin{tabular}{|ll}
16 & \\
& 22.6
\end{tabular} & \(\begin{array}{ll}9 & \\ & 21.1\end{array}\) & \[
\begin{array}{|ll|}
\hline 24 & \\
& 23.8
\end{array}
\] & \begin{tabular}{|ll}
56 & \\
& 3.6
\end{tabular} & \(\begin{array}{ll}40 & \\ & 0.8\end{array}\) & \begin{tabular}{|ll}
44 & \\
& 0.8
\end{tabular} & \(\begin{array}{ll}50 & \\ & 3.4\end{array}\) & Oldham Brewery Co. \\
\hline
\end{tabular}
(All Values are in £m., and rates are per.cent.)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Ranik
in
Score} & \multirow[t]{2}{*}{Score} & \[
\text { Ratio } \frac{04}{01}
\] & \[
\text { Ratio } \frac{04}{07}
\] & \[
\text { Ratio } \frac{05}{01}
\] & Ratio \(\frac{05}{07}\) & \[
\begin{gathered}
\text { Turnover } \\
\text { (01) }
\end{gathered}
\] & \[
\begin{gathered}
\text { Net Profit } \\
(04)
\end{gathered}
\] & \[
\begin{gathered}
\text { Cash Flow } \\
(05)
\end{gathered}
\] & Own Capital (07) & \multirow[t]{2}{*}{Name of Firm} \\
\hline & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline 11 & 58 & \(\begin{array}{ll}6 & \\ & 21.5\end{array}\) & \(\begin{array}{ll}21 & \\ & 21.3\end{array}\) & \(6 \begin{array}{ll}6 & \\ & 23.5\end{array}\) & \(\begin{array}{ll}25 & \\ & 23.4\end{array}\) & \begin{tabular}{|lr}
51 & \\
& 5.0
\end{tabular} & \(\begin{array}{|ll|}33 & \\ & 1.1\end{array}\) & \begin{tabular}{|ll}
34 & \\
& 1.2
\end{tabular} & \(\begin{array}{ll}40 & \\ & 5.1\end{array}\) & Hardy and Hansons \\
\hline 12 & 59 & \(\begin{array}{lll}28 & \\ & 11.4\end{array}\) & \(1 \begin{array}{ll}1 \\ & \\ & 44.0\end{array}\) & \(\begin{array}{ll}29 & \\ & 13.3\end{array}\) & \(1 \begin{array}{ll}1 & \\ & 51.4\end{array}\) & \begin{tabular}{|ll}
39 & \\
& 8.2
\end{tabular} & \(\begin{array}{ll}35 & \\ & 0.9\end{array}\) & \begin{tabular}{|ll}
37 & \\
& 1.1
\end{tabular} & \(\begin{array}{ll}55 & \\ & 2.1\end{array}\) & Tomatin Distillers Co. \\
\hline 13 & 63 & \(\begin{array}{ll}9 & \\ & 19.0\end{array}\) & \begin{tabular}{|ll}
24 & \\
& 20.4
\end{tabular} & \(\begin{array}{ll}7 & \\ & 22.2\end{array}\) & \begin{tabular}{|ll}
23 & \\
& \\
& 23.8
\end{tabular} & \[
\begin{array}{ll}
\hline 26 & \\
& 12.0
\end{array}
\] & \begin{tabular}{|ll|}
\hline 17 & \\
& 2.3
\end{tabular} & \begin{tabular}{|ll}
17 & \\
& 2.7
\end{tabular} & \[
\begin{array}{|ll|}
\hline 19 & \\
& 11.2
\end{array}
\] & Home Brewery \\
\hline 14 & 65 & \begin{tabular}{|ll|}
\hline 20 & \\
& 12.4
\end{tabular} & \begin{tabular}{|ll}
12 & \\
& 23.1
\end{tabular} & \(20 \begin{array}{rr} \\ & \\ & 14.4\end{array}\) & \(\begin{array}{ll}13 & \\ & 26.7\end{array}\) & \begin{tabular}{|lr}
19 & \\
& 15.6
\end{tabular} & \(\begin{array}{ll}22 & \\ & 1.9\end{array}\) & \(\begin{array}{ll}22 & \\ & 2.2\end{array}\) & \(\begin{array}{ll}24 & \\ & 8.4\end{array}\) & Greene, King \& Sons \\
\hline 15 & 68 & \(\begin{array}{|ll|}16 & \\ & 14.2\end{array}\) & \begin{tabular}{|ll}
19 & \\
& 21.8
\end{tabular} & \(\begin{array}{ll}14 & \\ & 16.3\end{array}\) & \(\begin{array}{ll}19 & \\ & \\ & 24.8\end{array}\) & \begin{tabular}{|ll}
46 \\
\\
& 6.6
\end{tabular} & \(\begin{array}{ll}35 & \\ & 0.9\end{array}\) & \(\begin{array}{ll}38 & \\ & 1.1\end{array}\) & \(\begin{array}{ll}43 & \\ & 4.3\end{array}\) & Burtonwood Brewery Co. (Forshaws) \\
\hline 16 & 75 & \(\begin{array}{ll}3 & \\ & 26.8\end{array}\) & \(\begin{array}{|rr|}28 & \\ & 18.6\end{array}\) & \(\begin{array}{ll}3 & \\ & 26.8\end{array}\) & \begin{tabular}{|ll|}
\hline 41 & \\
& 18.6
\end{tabular} & \begin{tabular}{|ll}
57 & \\
& 1.8
\end{tabular} & \(\begin{array}{ll}52 & \\ & 0.5\end{array}\) & \(\begin{array}{ll}57 & \\ & 0.5\end{array}\) & \(\begin{array}{ll}53 & \\ & 2.6\end{array}\) & Robert MacNish \({ }^{+}\) \& Co. \\
\hline 17 & 80 & \(\begin{array}{ll}23 & \\ & 12.4\end{array}\) & \begin{tabular}{|ll}
15 & \\
& 22.7
\end{tabular} & \begin{tabular}{|rr}
24 & \\
& 13.6
\end{tabular} & \begin{tabular}{|ll}
18 & \\
& 25.0
\end{tabular} & \[
\begin{array}{ll}
\hline 2 & \\
& 617.1
\end{array}
\] & \(\begin{array}{ll}1 & \\ & 76.4\end{array}\) & \(\begin{array}{ll}1 & \\ & 83.9\end{array}\) & \(\begin{array}{ll}2 & \\ & 336.1\end{array}\) & The Distillers Co. \\
\hline 18 & 82 & \(\begin{array}{ll}12 & \\ & 17.2\end{array}\) & \(\begin{array}{|cc|}27 & \\ & 18.7\end{array}\) & \begin{tabular}{|ll}
12 & \\
& 19.3
\end{tabular} & \begin{tabular}{|ll}
31 & \\
& 21.0
\end{tabular} & \(\begin{array}{ll}22 & \\ & 13.2\end{array}\) & \begin{tabular}{|ll}
18 & \\
& 2.3
\end{tabular} & \(\begin{array}{rr}20 & \\ & 2.5\end{array}\) & \begin{tabular}{|lr}
17 & \\
& 12.1
\end{tabular} & Marston, Thompson \& Evershed \\
\hline 19 & 89 & \(\begin{array}{|ll|}39 & \\ & 9.2\end{array}\) & 230.1 & \begin{tabular}{|rr|}
\hline 45 & \\
& 10.3
\end{tabular} & \(\begin{array}{ll}3 & \\ & 33.9\end{array}\) & \(\begin{array}{rrr}50 & \\ & 5.1\end{array}\) & \(\begin{array}{ll}55 & \\ & 0.5\end{array}\) & \(\begin{array}{ll}56 & \\ & 0.5\end{array}\) & \(\begin{array}{ll}57 & \\ & 1.5\end{array}\) & St. Austell Brewery Co. \\
\hline 20 & 90 & \begin{tabular}{|ll|}
\hline 22 & \\
& 12.4
\end{tabular} & \begin{tabular}{|ll}
18 & \\
& 22.5
\end{tabular} & 28 rr & \begin{tabular}{|ll}
22 & \\
& 24.3
\end{tabular} & \[
43
\]
\[
7.1
\] & \(\begin{array}{ll}39 & \\ & 0.9\end{array}\) & \(\begin{array}{ll}41 & \\ & 0.9\end{array}\) & \(\begin{array}{ll}46 & \\ & 3.9\end{array}\) & S.A. Brain \& Co. \\
\hline
\end{tabular}

(All Values are in \(£ \mathrm{~m}\). , and rates are per.cent.)
Number of firms in Sample \(=58\)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \begin{tabular}{l}
Rank \\
in
\end{tabular} & Score & Ratio \(\frac{04}{01}\) & Ratio \(\frac{04}{07}\) & \[
\text { Ratio } \frac{05}{01}
\] & \[
\text { Ratio } \frac{05}{07}
\] & \[
\begin{aligned}
& \text { Turnover } \\
& \text { (01) }
\end{aligned}
\] & Net Profit (04) & \[
\begin{gathered}
\text { Cash Flow } \\
(05) \\
\hline
\end{gathered}
\] & Own Capital (07) & Name of Firm \\
\hline Score & & Rank Rate & Rank Rate & Rank Rate & Rank Rate & Rank Value & Rank Value & Rank Value & Rank Value & \\
\hline 31 & 119 & \(\begin{array}{ll}47 & \\ & 8.2\end{array}\) & \(\begin{array}{ll}25 & \\ & 19.3\end{array}\) & \(\begin{array}{ll}37 & \\ & 11.5\end{array}\) & 10 & \(\begin{array}{ll}42 & \\ & 7.5\end{array}\) & \(\begin{array}{ll}45 & \\ & 0.6\end{array}\) & \(\begin{array}{ll}43 & \\ & 0.9\end{array}\) & \(\begin{array}{ll}51 & \\ & 3.2\end{array}\) & Hall \& Woodhouse \\
\hline 32 & 121 & \(\begin{array}{lll}27 & \\ & 11.5\end{array}\) & \begin{tabular}{|ll|}
\hline 34 & \\
& 17.4
\end{tabular} & \begin{tabular}{|ll|}
\hline 27 & \\
& 13.4
\end{tabular} & \(\begin{array}{|rr|}33 & \\ & 20.4\end{array}\) & \(\begin{array}{ll}13 & \\ & 36.2\end{array}\) & \begin{tabular}{|ll}
12 & \\
& 4.2
\end{tabular} & \(\begin{array}{ll}12 & \\ & 4.8\end{array}\) & \(\begin{array}{ll}12 & \\ & 23.8\end{array}\) & Vaux Breweries \\
\hline 33 & 136 & \begin{tabular}{ll|}
34 & \\
& 10.1
\end{tabular} & \(\begin{array}{|ll|}35 & \\ & 17.3\end{array}\) & \(\begin{array}{ll}35 & \\ & 12.1\end{array}\) & \(32 \quad 30\) & \(4 \begin{array}{rrr} \\ \\ & \\ & \\ & \\ \end{array}\) & \(3 \begin{array}{ll} \\ \\ & \\ & \\ & \\ \end{array}\) & \(4 \begin{array}{ll} \\ \\ & 70.0\end{array}\) & \(\begin{array}{ll}3 & \\ & 334.0\end{array}\) & Bass Charrington \\
\hline 34 & 139 & \(\begin{array}{ll}19 & \\ & 12.6\end{array}\) & \begin{tabular}{|ll|}
\hline 47 & \\
& 12.2
\end{tabular} & \begin{tabular}{|ll}
22 & \\
& 13.9
\end{tabular} & \begin{tabular}{|ll}
51 & \\
& 13.4
\end{tabular} & \(\begin{array}{ll}33 & \\ & 9.7\end{array}\) & \begin{tabular}{|ll}
32 & \\
& 1.2
\end{tabular} & \(\begin{array}{ll}31 & \\ & 1.4\end{array}\) & \(20 \begin{array}{rr} \\ & 10.1\end{array}\) & Higsons Brewery \\
\hline 35 & 141 & \(\begin{array}{|ll|}56 & \\ & 4.3\end{array}\) & 19 & \begin{tabular}{|lr|}
\hline 57 & \\
& 5.4
\end{tabular} & \(9 \quad 27.6\) & \(\begin{array}{ll}12 & \\ & 48.1\end{array}\) & \(\begin{array}{ll}20 & \\ & 2.0\end{array}\) & \(\begin{array}{ll}18 & \\ & 2.6\end{array}\) & \(\begin{array}{ll}22 & \\ & 9.4\end{array}\) & Teacher (Distillers) \\
\hline 35 & 141 & \(\begin{array}{|ll|}18 & \\ & 13.5 \\ & \end{array}\) & \begin{tabular}{|ll|}
\hline 50 & \\
& 11.3
\end{tabular} & \(\begin{array}{|ll|}19 & \\ & 14.6\end{array}\) & \begin{tabular}{|rr|}
\hline 54 & \\
& 12.2
\end{tabular} & \(\begin{array}{ll}53 & \\ & 4.5\end{array}\) & \(\begin{array}{ll}46 & \\ & 0.6\end{array}\) & \(\begin{array}{ll}49 & \\ & 0.6\end{array}\) & \begin{tabular}{|ll}
39 & \\
\\
& 5.3
\end{tabular} & \begin{tabular}{l}
MacDonald \\
Martin \\
Distilleries
\end{tabular} \\
\hline 37 & 142 & \begin{tabular}{|ll|}
\hline 24 & \\
& 15.2
\end{tabular} & \begin{tabular}{|ll|}
\hline 44 & \\
& 12.9
\end{tabular} & \(\begin{array}{lll}25 & \\ & 13.5\end{array}\) & \(\begin{array}{ll}49 & \\ & 14.2\end{array}\) & 55 & \(\begin{array}{ll}50 & \\ & 0.5\end{array}\) & \(\begin{array}{ll}53 & \\ & 0.6\end{array}\) & \(\begin{array}{ll}45 & \\ \\ & 3.9\end{array}\) & Buckley's Brewery \\
\hline 38 & 146 & \(\begin{array}{|ll|}37 & \\ & 9.4\end{array}\) & \(\begin{array}{ll}42 & \\ & 15.5\end{array}\) & \begin{tabular}{|ll|}
\hline 33 & \\
& 12.4
\end{tabular} & \begin{tabular}{|ll}
34 & \\
& 20.4
\end{tabular} & \begin{tabular}{|ll}
21 & \\
& 13.2
\end{tabular} & \(\begin{array}{ll}30 & \\ & 1.2\end{array}\) & \(\begin{array}{ll}28 & \\ & 1.6\end{array}\) & \(\begin{array}{rr}28 & \\ & 8.0\end{array}\) & Daniel Thwaites \& Sons \\
\hline 39 & 147 & \begin{tabular}{|ll|}
\hline 45 & \\
& 8.3
\end{tabular} & \(\begin{array}{|ll|}39 & \\ & 16.0\end{array}\) & \begin{tabular}{|ll}
36 & \\
& 11.5
\end{tabular} & \(\begin{array}{ll}27 & \\ & 22.2\end{array}\) & \[
\begin{array}{ll}
\hline 20 & \\
& 14.9
\end{array}
\] & \(\begin{array}{ll}31 & \\ & 1.2\end{array}\) & \(\begin{array}{ll}27 & \\ & 1.7\end{array}\) & 29 & H.P. Bulmer \({ }^{* *}\) \\
\hline 40 & 148 & 35 & \[
\begin{array}{ll}
\hline 35 & \\
& 17.3
\end{array}
\] & \[
\begin{array}{|ll|}
\hline 38 & \\
& 11.2
\end{array}
\] & \[
\begin{array}{|ll|}
\hline 40 & \\
& 19.2
\end{array}
\] & \[
\begin{array}{ll}
\hline 45 & \\
& 6.6
\end{array}
\] & \(\begin{array}{ll}44 & \\ & 0.6\end{array}\) & \(\begin{array}{ll} \\ 46 & \\ & 0.7\end{array}\) & \(\begin{array}{ll}47 & \\ & 3.8\end{array}\) & Border Breweries (W'rexham) \\
\hline
\end{tabular}


1. All firms are brewers unless denoted as follows:
\(+\quad\) spirits' manufacturers
* soft drinks' manufacturers
** cider makers
2. (i) Both, Robert MacNish and Co. Ltd. and Hiram Walker \& Sons Ltd. have as their ultimate holding company Hiram Walker - Gooderham and Worts of Canada.
(ii) The ultimate holding company of Seagram Distillers Ltd. is Distillers Corporation-Seagrams Ltd. of Canada.
(iii) Until acquisition by Whitbread \& Co. Ltd. in 1975, Long John International Ltd. had as its parent company the US firm Rapid-American Corporation Inc.
3. The difference in the number of firms comprising the sample given in these tables compared to Table 5.1 in the main report is accounted for by lack of comprehensive data.

\section*{Sales Offices}

\section*{Belgique - België}

Moniteur belge - Belgisch Staatsblad
Rue de Louvain 40-42 -
Leuvenseweg 40.42
1000 Bruxelles - 1000 Brussel
Tél. (02) 5120026
CCP 000-2005502-27.
Postrekening 000-2005502-27
Sous-dépôt - Agentschap:
Librairie européenne -
Europese Boekhandel
Rue de la Lai 244 - Wetsiraat 244
1040 Bruxelles - 1040 Brussel

\section*{Danmark}
J.H. Schultz - Boghandel

Montergade 19
1116 Kobenhavn K
Tel. 141195
Girokonto 1195

\section*{BR Deutschland}

Verlag Bundesanzeiger
5 Koln 1 - Breite Straße - Postfach 108006
Tel. (0221) 210348
(Fernschreiber: Anzeiger Bonn 08882 595)
Postscheckkonto \(83400 \mathrm{Köln}\)

\section*{France}

Service de vente en France des publications des Communautés européennes
Journal officiel
26, rue Desaix
75732 Paris Cedex 15
Tél. (1) 5786139 - CCP Paris 23-96

\section*{Ireland}

Stationery Office
Beggar's Bush
Dublin 4
Tel. 688433

\section*{Italia}

Libreria dello Stato
Piazza G. Verdi 10
00198 Roma - Tel. (06) 8508
Telex 62008
CCP 1/2640

\section*{Agenzia}

00187 Roma - Via XX Settembre
(Palazzo Ministero del tesoro)

\section*{Grand-Duché de Luxembourg}

Office des publications officielles des Communautés européennes
5, rue du Commerce
Botte postale 1003 - Luxembourg
Tèl. 490081 - CCP 191.90
Compte courant bancaire
BIL 8.109/6003/300

\section*{Nederland}

Staatsdrukkerij- en uitgeverijbedriif
Christoffel Plantijnstract, 's-Gravenhage
Tel. (070) 814511
Postgiro 425300

\section*{United Kingdom}
H.M. Stationery Office
P.O. Box 569

London SE 1 9NH
Tel. (01) 9286977 , ext. 365
National Giro Account 582-1002

\section*{United States of America}

European Community Information Service
2100 M Street N.W.
Suite 707
Washington D.C. 20037
Tel. (202) 8728350

\author{
Schweiz - Suisse - Svizzero \\ Librairie Payot \\ 6 , rue Grenus \\ 1211 Genève \\ Tél. 318950 \\ CCP 12-236 Genève
}

\section*{Sverige}

Librairie C.E. Fritze
2, Fredsgatan
Stockholm 16
Post Giro 193. Bank Giro 73/4015

\section*{España}

Libreria Mundi-Prensa
Castelló 37
Madrid 1
Tel. 2754655

\section*{Other countries}

Office for Official Publications of the European Communities
5, rue du Commerce
Boite postale 1003 - Luxembourg
Têl. 490081 - CCP 191-90
Compre courant bancaire :
BIL 8-109/6003/300```


[^0]:    * Report of the Commissioners of Her Majesty's Customs and Excise published annually. HMSO.
    + op. cit. 66th Report, year ended March 31st 1975.

[^1]:    * Development Analysts Ltd. Concentration in the U.K. Food Processing Industry. 1969-72. A Report prepared for and published by the Commission of the European Communities. (1975).

[^2]:    * Census of Production. Business Monitor PA 231, Brewing and Malting.

[^3]:    * Census of Production. Business Monitor PA 232, Soft Drinks.

[^4]:    * Census of Production. Business Monitor. PA 239.1. Spirit Distilling \& Compounding.
    + Cenus of Production. Business Monitor PA 239.2. British Wines, Cider and Perry.

[^5]:    * Census of Production, Summary Tables. C154,1970 and PA1002, 1972.
    + C154. op.cit.
    $\emptyset$ S.J. Prais (1976). The Evolution of Giant Firms in Britain. Cambridge University Press. pp 189-190.

[^6]:    * S.J. Prais (1976) op.cit. pp. 48-50.
    + Census of Production. Business Monitor. PA1003.

[^7]:    SOURCE: Census of Production 1968
    Business Monitor PQ231 4th Quarter 1975.

[^8]:    + definitions taken from R.W. Evely and I.M.D. Little (1960) Concentration in British Industry. Cambridge University Press p. 294.

[^9]:    * Unilever Ltd. and Allied Breweries Ltd., a report on the proposed merger. The Monopolies Commission, HMSO. 1969.

[^10]:    * The balance of the shares in this company are held by Arthur Guinness Son and Co. Ltd.

[^11]:    Bass Ireland Ltd.
    Bass North Ltd.
    Bass North West Ltd.
    Bass South West Ltd.

[^12]:    * Taunton Cider Co. Ltd. is a consortium company for the manufacture and sale of cider; other shareholdings are:-

    Courage Ltd. 28.7 per cent.
    Arthur Guinness Son \& Co. Ltd. 28.7 per cent. Greene, King \& Sons Ltd.
    ? per cent.

[^13]:    * The other shareholdings in Harp Lager Ltd., today are:

    Courage Ltd.
    32.7 per cent. Scottish and Newcastle Breweries Ltd. 32.7 per cent. Greene, King and Sons Ltd. <2.0 per cent. Wolverhampton and Dudley Breweries Ltd.
    <2.0 per cent.
    ** The balance of the shares in this company are held by Allied Breweries Ltd.
    *** The balance of the shares in this company are held by Allied Breweries Ltd.

[^14]:    * Taunton Cider Co. Ltd. is a consortium company for the manufacture and sale of cider; other shareholdings are:

[^15]:    * management companies.

[^16]:    * Whitbread \& Co. Ltd. The Story of Whitbreads. 3rd Ed. 1964.

[^17]:    * Trade and Industry. HMSO. Vol. 21. No. 8.

[^18]:    + defined as units deriving less than 50 per cent. of turnover from the industry being studied.

[^19]:    * Development Analysts Ltd. (1975) op.cit.

[^20]:    * This is the same test that was applied to concentration ratios in our study of the U.K. Food Processing Industry, Development Analysts Ltd., (1975)op.cit.P.115.

[^21]:    + These data are not those that appear in Appendix 3, Table 4. For explanation please see Appendix 2.

[^22]:    * our estimate

[^23]:    + see R. Linda Methodology of Concentration Analysis Applied to the Study of Industries and Markets. Commission of the European Communities. Sept. 1976, particularly Pages 35-76

[^24]:    * R. Linda (1976) op.cit.

[^25]:    * J. Johnston (1954). 'Productivity and size of establishment.' Bulletin of the Oxford Institute of Statisticians pp 339-361

[^26]:    + Development Analysts Ltd. (1975) op.cit. p.121.

[^27]:    GI - Gross Investments
    OM - Own Means
    NA - Net Assets
    VA - Value Added

[^28]:    * Financial Times. Supplement on Brewing. 1974.

