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

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— Radio, television and electro-acoustic industry
— Electrical household appliances industry

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/458/74-E

# P R E F A C E

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.

# Concentration and competition within:

## The Danish Radio and TV Industry - ISIC 3731

and

## The Danish Industry For Electric Household Appliances - ISIC 3722

A study of the development of concentration and competition within the industries and within the major product markets 1968-73.

By Jens Vestergaard

## Introduction

This analysis of the Danish Radio and TV industry and the trade 'production of electric household appliances' has taken place during 1974, and it is one of a number of analyses of a similar kind which are made or have been made at the instance of the EC Commission in each member country of the Common Market in order to analyse the relationship between concentration and competition. A knowledge of this relationship is useful in connection with the administration of the provisions of the Rome Treaty as to competition, viz. the articles 85 to 90.

In 1974, there have been made analyses of three trades in Denmark:

(1) Radio and Television (ISIC sub-group 3731)
(2) Electric Household Appliances (ISIC sub-group 3722)
(3) Drugs (ISIC sub-group 3194)

These trades have been selected because they

(1) have a considerable size
(2) are not monopolized
(3) do not have an atomistic structure.

In Denmark the analyses have been made by

Adjunkt, Master of Economics, Niels Jørgensen
Professor, Master of Economics, Th. Herborg Nielsen and
Lektor, Master of Economics, Jens Vestergaard.

This analysis has been made by
lektor, Master of Economics, Jens Vestergaard
except sections III and IV in the analysis concerning the trade: electric household appliances. These two sections have been prepared by Niels Jørgensen.

The analyses have been translated into English by

stud. ling. merc. Birger Andersen.

## The Danish Radio and TV Industry.

### Summary main conclusions with respect to the development in concentration and competition 1968-73 and the expected future development.

During the period 1968-73 the turnover of the Danish industry has grown at an annual average growth rate of 17.6 per cent, while the turnover of the industry's own goods and services has grown by 14.6 per cent only. Contemporaneous with this growth in turnover the prices ex producer have experienced an annual average fall of 2.5 per cent. The productivity of the industry illustrated by the development in value added in real terms has grown by 12 per cent per year.

The 5 main product groups: monochrome TV, colour TV, radios, grammophones and tape recorders have had a constant share of 72 to 74 per cent of the industry's total turnover of its own goods and services during the period. During the period a shift between the product groups mutually has occurred, the share of colour TV of the turnover having increased from 7 per cent in 1968 to 26 per cent in 1973, while monochrome TV has fallen during the same period from constituting 20 per cent of the turnover to 3 per cent in 1973. The other product groups have seen small shifts only.

As far as the main product groups are concerned, the supply of the Danish market has grown at an annual growth rate of 23 per cent in prices ex producer and import prices. The development in the market for colour TV has been especially vigorous with an annual average growth rate of 88 per cent in contrast to the development in monochrome TV, where the market has been falling. The turnover of radios has grown by 16 per cent per year.

The development in the retail turnover shows a somewhat smaller growth than for the above-mentioned main product groups, viz. an average growth in real turnover of 17.5 per cent and in nominal turnover of 19.5 per cent. This implies an annual average price increase of 2 per cent. This development is due to the fact that the main product groups mentioned have seen a more vigorous growth than the other elements of the retailers' assortment. The development also gives the impression that the retail prices have been relatively increasing for the groups of articles analysed here in relation to prices ex producer and import prices which have been falling or stable with the exception of radio sets.

The imports of the 5 main product groups show a vigorous growth with an annual average growth rate of 36 per cent compared with a growth in the domestic turnover of 23.5 per cent and a growth in domestic sales of the Danish producers of 7.5 per cent per year. This has had the effect that the share of imported products of the Danish market has grown from 44 per cent in 1968 to about 72 per cent in 1973.

As far as exports are concerned, exports from the Danish enterprises have grown by 23 per cent per year and the share of exports of the Danish production has increased from 40 per cent of the Danish production to 60 per cent in 1973.

As a whole the prices of the Danish products are higher than the prices of imported products in the same categories. This applies to both the prices of the part of the products sold in the domestic market as well as the part of the products which is exported. During the period, this difference has grown smaller, mainly because of a fall in prices of the Danish products. The market supply with the product groups TV sets and battery receivers has experienced slightly falling prices ex producer or C.I.F. prices. The prices for radios have been increasing during the period.

There has been no drastic change in the distribution of the vigorously increasing exports on recipient areas, but there has been a change in the distribution of imports on countries of origin, as the imports of radio and TV sets have shifted from EC countries towards increased imports from EFTA countries, and the imports of grammophones and tape recorders from EFTA countries towards increased imports from other countries.

During the period the number of production enterprises in Denmark has been relatively constant between 18 and 21. Of these 2 have constantly had more than 500 employees. Thus, the main part of the enterprises are small enterprises. In 1973 the average enterprise had a turnover of 29,5 million Dkr, wage costs of 9,3 million Dkr and 248 employees, corresponding to an increase during the period of 9.5 per cent in turnover, 12.5 per cent in wage costs and 3 per cent in number of employees.

As far as the relative concentration measurements are concerned the development in concentration among Danish producers shows a medium or large difference between the Danish producers for all three variables analysed, while the concentration measurements measuring the absolute difference between the enterprises indicate a medium-sized producer concentration. There is no very clear and unequivocal change in concentration measured by means of the above indices during the period 1968-73. During the period as a whole the concentration index $CR_4$ shows a slightly falling concentration. In 1973 $CR_4$ was about 80 for all 3 variables. The development in the Linda index amplifies these circumstances. The maximum value of the Linda index is for the whole period $L_2$, and the maximum value is high and increasing, i.e. there is a large relative difference between the largest and second largest enterprise, and this difference has been accentuated during the period. Similarly, the minimum and average values of the Linda index indicate large relative differences between the individual enterprises. The development has been dominated by the fact that the largest enterprise is relatively large compared to the second largest enterprise; a circumstance which manifests itself in the fact that the minimum Linda value has been falling during the period while the average Linda value has been increasing.

The conclusions drawn here concerning the producer concentration areof small importance for the evaluation of the competition in the Danish market, as the competition in this market is characterized to a very large extent by the development in exports and imports mentioned above. For all product markets $C_4$ is situated between 70 and 80 in 1973, and the development has been characterized by a falling concentration during the whole period with the exception of the most rapidly increasing market: the market for colour TV. The mutual relative size of the 4 largest suppliers measured by $L_4$ shows a large difference between these suppliers as far as colour TV is concerned and a moderate or large mutual difference in the markets for radios and grammophones and tape recorders. As far as monochrome TV is concerned there is a small mutual difference only between the 4 largest suppliers. The development in $L_4$ indicates an increasing mutual difference between the suppliers for colour TV, a smaller mutual difference for monochrome TV and grammophones and no change for radios and tape recorders.

This fairly quantitatively oriented illustration of the situation and the development may be supplemented by the following more qualitatively oriented part of the analysis. The vertically integrated and diversified multinational enterprises have strengthened their relative positions in relation to other not integrated and diversified suppliers. The former are enterprises like Philips, Standard Electric - ITT, Rank Arena and Sony, the latter are enterprises like B&O and Tandberg. In 1973 there were 6 important and independent suppliers on the Danish market two of which, B&O and Tandberg, are not integrated and diversified. The two medium-sized (according to Danish standards) independent Danish producers and suppliers Arena and Eltra have been bought by The Rank Organisation and Sony, respectively. I.e. some 30 per cent of the Danish radio industry measured in turnover was under foreign control in 1973.

The development in the retail outlet has been characterized by an increasing concentration of the turnover of actual and voluntary chains within the radio specialist shops. In 1973 the 6 largest chains had about 55 per cent of the total retail turnover. The development in the distribution of the trade's products has been characterized by a very modest shift away from the traditional radio specialist shops and an almost consistent adherence to the resale price-maintenance system. The main reason why this situation can be maintained is the approval of the Monopolies Authorities of the selective distribution within the trade.

## The expected future development in concentration and competition within the Danish radio industry and on the Danish market for the products of the radio industry.

### Concentration and competition within the Danish radio industry.

The Danish radio industry has based its growth on steadily increasing exports of mainly widely differentiated products for special segments of customers in a large number of recipient countries. In 1973 60 per cent of the Danish production was exported as against 40 per cent in 1968. Therefore, the future development will depend to a large extent on the development in the demand in these countries, the commercial intercourse with these countries and the development in the capabilities of the Danish radio industry to carry on a continuous product development and on the development in the Danish costs of production relative to the development for the other suppliers in the individual recipient countries. The dependency of the Danish radio industry of the domestic market has diminished substantially during the period. In 1968 60 per cent of the Danish production was sold in the domestic market as against 40 per cent in 1973. The structural difference between the prices of imported products and the Danish prices ex producer renders probable that this development will continue and it is also to be anticipated especially that a change towards a prohibition from the Monopolies Authorities against selective distribution will further precipitate this development to the detriment of the relatively more expensive Danish products and to the detriment of enterprises with a relatively weak financial power. The decline in the number of Danish-owned and independent enterprises, the relatively modest number of producers within the trade, and the above-mentioned circumstances as to the development in sales make any prediction about future developments in concentration among the producers extremely uncertain. The circumstance that the main part of the producers have specialized in differentiated products to small segments of markets in many different countries indicates a relatively unchanged situation with respect to concentration. On the other hand circumstances like the increasing influence of the large, integrated and diversified multinationals on the Danish enterprises, both directly through acquisitions as well as indirectly through their steadily growing share of the Danish market, indicate the conclusion that it is impossible to make any positive isolated evaluation of the development in the Danish producer concentration.

## The expected future development in concentration and competition on the Danish market for products of the Danish radio and TV industry.

The development up till now in concentration has been characterized by a slight fall in the share of the 4 largest enterprises of the Danish market with the exception of the product group colour TV, however, which has experienced an increasing concentration and an increase in the potential domination power of the two largest enterprises. Over the period, $L_4$ has been high and increasing on the market for colour TV. The position of the Danish suppliers has deteriorated during the period partly because of the increasing market share of the large multinationals, partly by these buying up Danish producers. These development trends will probably continue. As far as concentration is concerned, however, the share of the market pertaining to the 4 largest suppliers has been stabilized. The attitude of the Monopolies Authorities towards the problem of a continued selective distribution of the products of the trade is an important uncertain factor in connection with this prediction. If this right is abolished, we may expect a rapid change in the distribution structure towards other channels of distribution than the traditional specialist shops and an increased price competition in the retail outlet as a whole. This development may also result in a rapid change of the competitive conditions between the suppliers and in the supplier concentration on the market. The specified direction and extent of this development in concentration is difficult to predict. The only conclusion which seems reasonably safe to draw is that the development will be to the detriment of the financially weakest Danish producers and to the producers which have a large share of the Danish market with relatively expensive products compared to other suppliers.

The Danish industry for electric household appliances

Summary main conclusions with respect to the development in concentration and competition 1968-1973 and the expected future development.

During the period 1968-1973 there have been 9 to 1o enterprises which could be included in the trade. During the period as a whole the total number of employees in these enterprises have grown from 1867 to 285o or by 38 per cent; over the same period the turnover and wage costs of the trade's enterprises have grown by 129 per cent and 137 per cent, respectively. The development over the period has been irregular with a vigorous growth in activity measured for all three variables from 1968 to 1969 and a following fall followed by a slow increase from 1971 to 1973.

Because of the modest number of enterprises in the trade, the development has been strongly characterized by the development in the largest enterprises of the trade.

The three largest Danish producers of the trade produce and supply non-competing articles, i.e. electric articles for the treatment of hair, vacuum cleaners, and cookers, respectively.

As a whole the trade has been characterized by large direct exports. They constitute 75 to 8o per cent of the total production of its own goods and services.

The total value added constitutes almost 5o per cent of the turnover and the wage costs almost 25 per cent of the turnover. The relative value added has been falling and the relative wage costs increasing from 1968 to 1971.

The development in the domestic production, the Danish market, imports and exports has assumed a special character for each main product group of the market.

As far as articles for the treatment of hair are concerned there have been vigorous fluctuations in the total volume of production, and the development has been dominated by the development in the American and British markets which have taken the main part of the Danish production. During the period the Danish market has been slightly increasing but only modest in size compared to the production.

As far as the production of vacuum cleaners is concerned there has been a stable growth in the Danish production. The share of imports of the Danish market has grown over the period (from 25 per cent to 35 per cent), and the share of the Danish production which is exported has grown from 45 per cent to 55 per cent. The imports are relatively concentrated on UK, Germany, Sweden and the Netherlands, while exports from Denmark are dispersed on many countries. The four most important markets take only 4o per cent of the exports.

The Danish production of cookers etc. has grown steadily over the period, but not sufficiently to keep up with the growing demand. As a consequence imports have grown to constituting about 3o per cent of the total Danish turnover in 1973. The main import countries are Germany and Sweden. There are no important Danish exports.

The Danish production of ventilators for domestic use has been vigorously increasing over the period, gradually obtaining an increased share of the rapidly growing Danish market.

The Danish production of mixers and whipping machines has been stable while the increased turnover has been covered by growing imports.

There has been a special development in exports and imports for each individual product group with a marked tendency to larger shares of imports and exports of the domestic market and the production, respectively. There are special development trends in the distribution of imports and exports on main areas.

The product market analyses have been accomplished for the three most important markets in which there are large Danish producers. As far as the product market for vacuum cleaners is concerned, the analysis shows a typical oligopolitical competitive structure with almost all the turnover concentrated on the 5 largest suppliers and with about 75 per cent stemming from the two largest. The most important suppliers have been the Danish enterprise A/S Fisker & Nielsen and the British A/S Hoover. The market for articles for the treatment of hair has been dominated by Carmen Clairol with a market share of more than 9o per cent of the Danish market.

Largely, the Danish market for cookers is divided between 4 independant producers whose products are offered for sale by different suppliers with the Danish enterprise Ernst Voss A/S as the largest supplier with a market share of some 5o per cent.

The competitive conditions on the market for vacuum cleaners have been characterized by the introduction of new models at regular intervals, a certain trade sliding at the retail stage and almost stable prices for the period.

The competitive conditions on the market for articles for the treatment of hair have been characterized by the development and introduction of new products with other characteristics than those already existing.

The competitive conditions on the market for cookers have been characterized by a vigorously increasing demand as a consequence of a vigorous upswing in new building and replacement of existing cookers. This vigorous demand has implied rising prices and an increased market share for foreign suppliers.

The analysis of the development in the Danish producer structure shows a vigorously increasing average size of the enterprises, although with a small average size compared to international standards. The development has been rather irregular, however, as a consequence of the fact that the development in the largest enterprise has been vigorously fluctuating.

The relative concentration measurements both show a strongly growing concentration. The two absolute concentration measurements show a growing concentration among the largest enterprises and a falling concentration among the small enterprises. $CR_4$ shows a high and growing concentration. The same applies to the Linda index, which shows, furthermore, a relatively large difference between the largest and second largest enterprises.

The qualitative analyses of the structure of Danish suppliers and producers shows, coupled with the analyses of the individual markets and the development in conditions for exports and imports, that the future structure development and the future development in the competitive conditions in the trade cannot be determined on a basis of an isolated consideration of the structure development so far and the development on the Danish market in isolation. The structural development in the trade is primarily dependent on the development in the relative compeitive powers of the Danish producers towards foreign enterprises as to exports as well as on the domestic market.

The three largest Danish producers in the trade are each o them dependent on a very narrow assortment of products. Typically, the foreign suppliers on the Danish market produce and offer for sale a much wider range of electric household appliances and in some cases other products, and they belong to firms possessing a considerably large financial capacity than the Danish enterprises. Especially, this applies to the Swedish Electrolux and the German AEG.

These circumstances coupled with the foreign acquisitions of Danish Enterprises, such as the acquisition by the Electrolux group of small Danish suppliers of electric household appliances point toward a situation where the competitive conditions on the Danish market will to a larger extent be characterized by large multinationals as suppliers of a full range of electric household appliances, and to a situation where the potential domination power of these companies will increase. It seems reasonable to avoid any precise predictions as to the structure of Danish producers and ownership of the production enterprises left in Denmark, because the development is closely connected with the development in competitiveness and ownership in less than 5 enterprises, which are relatively small compared to their competitors.

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Delimitation of Enterprises and Firms Within A Trade

To delimit the enterprises of the trade the same principles have been applied as those applied by the Danish National Bureau of Statistics at the making up of Industristatistik (Industrial Statistics). Cf. for instance Industrial statistics 1971, Statistiske Meddelelser (Statistical Information) 1974, 3.

This delimitation has been chosen in order to be able to use the surveys and results of the official industrial statistics to the largest extent possible as a starting point and basis for comparisons.

The enterprises in a trade are delimited according to the following lines:

(1) An enterprise is understood as a local unit exercising an economic activity. If a local unit exercises several important activities and there are no possibilities of registering any distinction between them, the activities are registered as a unit and the main activity forms the basis of the classification of the unit in the trade.

(2) Only enterprises with at least 6 workers or salaried employees are considered industrial enterprises.

(3) Only enterprises obtaining the main part of their value added through productive activities are considered industrial enterprises.

(4) Only enterprises whose turnover is based mainly on the final products mentioned in section I for each of the industries are included in the industry. Final products are those goods or services which are supplied to others.

The firms of a trade are delimited along the following lines:

A firm is understood as a corporation aggregate exercising one or several economic activities within one or several local units. Thus, a firm may comprise one or more enterprises. In a trade are included firms whose main activities fall within the production of the final products mentioned in section I for each of the industries.

Sources of Information and Data Material

The present study is based on available public statistics.

The main sources are:

Statistisk Årbog - various volumes (Statistical Yearbook)
Statistiske efterretninger - various volumes (Statistical information)
Industristatistik - 1968-71 (Industrial statistics - not yet available for 1972 and 1973)
Varestatistik - various volumes (Product Statistics)
Udenrigshandelsstatistik - various volumes (Foreign Trade Statistics)

These official sources have been supplemented by material from trade journals etc. Sources are stated where they have been applied.

Before 1973 Danish firms had no obligation to publish their accounts except for the few companies quoted on the Stock Exchange. This fact has posed difficulties as to the collection of information about the firms from available sources. It has been necessary, therefore, to use other methods to procure information about the individual firms, including interviews supplemented by estimated calculations.

THE DANISH RADIO AND TV INDUSTRY - ISIC 3731

# I Delimitation of Final Products In the Radio and TV Industry

The final products of the trade can be characterized largely as consumer devices for the reproduction of pictures and/or sounds.

The final products are the main products groups:

(1) radio sets
(2) TV sets
(3) grammophones
(4) tape recorders and reproducers
(5) accessories for the main product groups (1)-(4)

The following is a specification of the detailed contents of the main product groups stating which product groups are included in the main product groups according to Varestatistik (Product Statistics) for the industry and Udenrigshandelsstatistikken (the Foreign Trade Statistics).

The above delimitation of the final products of the trade to consumer devices for the reproduction of pictures and sounds only poses certain problems as to delimitation towards two other groups of products, which with regard to production have connections with the consumer devices, especially as far as small and medium-sized enterprises are concerned. The problems arise in connection with delimitation towards professional devices for the reproduction of pictures and sounds and components used in connection with finished devices.

In those cases where an enterprise produces both consumer devices as well as professional devices, the classification must be based on an estimate.

In principle, a consumer device may be looked upon as made up of a number of components, and it is to some extent a matter of opinion when it is a final product. In such cases the classification of the enterprise must be based on an estimate.

Specification of main product groups

(Indicated by BTN product number according to foreign trade statistics and product statistics).

Radio Sets

| | import | export | product statistics | |
|---|---|---|---|---|
| | 1968-69 | 1970- | 1968-69 | 1970- |
| Battery-powered car radios | 85.15.421 | 85.15.430 | do. | do. |
| Battery receivers under 1 kg each | 422 | 441 | 85.15.4248 | 85.15.4443 |
| Battery receivers over 1 kg each | 423 | 442 | | |
| Mains receivers:<br>complete without cabinets | 451 | 451 | do. | |
| complete with built-in grammo-<br>phone or tape recorder | 452 | 452 | do. | |
| Others | 453 | 453 | do. | |

TV sets

| | import | export | product statistics | |
|---|---|---|---|---|
| | 1968-69 | 1970- | 1968-69 | 1970- |
| Chassis for TV sets:<br>for colour TV sets | 85.15.551 | 85.15.561 | 85.15.5518 | 85.15.561 |
| for monochrome TV | 552 | 85.15.591 | | 85.15.591 |
| Combined TV sets and<br>radio sets, etc. | 553 | - | 85.15.553 | - |
| Complete TV sets:<br>Colour TV sets | 554 | 85.15.562 | do. | |
| Monochrome TV sets | 555 | 85.15.592 | do. | |

do. = same BTN number as import and export

BTN = Brussels Trade Nomenclature as used in the Danish trade statistics

Amplifiers

| | import | export | product statistics |
|---|---|---|---|
| | 1968- | | 1968- |
| Low-frequency amplifiers also combined with loudspeakers and microphone | 85.14.300 | do. | do. |

Grammophones

| | import | export | product statistics | |
|---|---|---|---|---|
| | 1968-69 | 1970- | 1968-69 | 1970- |
| Grammophone chassis (without cabinet) | 92.11.101 | 92.11.191 | do. | |
| Record players and record changers | 102 | 92.11.199 | do. | |
| Accessories for the above | 13.100 | 92.13.100 | do. | 92.13.1001<br>92.13.1009 |
| Other grammophones | 92.11.109 | 92.11.111<br>119 | do. | |

Tape Recorders

| | import | export | product statistics | |
|---|---|---|---|---|
| | 1968-69 | 1970- | 1968-69 | 1970- |
| Dictaphones also combined with sound reproducer | 92.11.201 | 92.11.201 | do. | |
| Tape recorders and reproducers | 202 | 92.11.203<br>92.11.209 | do. | |
| Magnetic video and audio tape recorders and reproducers for TV | 902 | 92.11.700 | do. | |
| Other related articless | 909 | 92.11.900 | do. | |
| Accessories for the above articles | 13.900 | 92.13.900 | 92.13.990 | do. |

do. = same BTN number as import and export

Magnetic Tapes

| | import | export | product statistics | |
|---|---|---|---|---|
| | 1968-69 | 1970- | 1968-69 | 1970- |
| Tapes and wire ready for recording | 92.12.901 | 92.11.903<br>92.11.904 | do. | |
| Other ready for sound recording | 909 | 92.11.909 | do. | |
| Other sound recorders than records and matrices | 400 | 92.11.401<br>92.11.409 | do. | |

do. = same BTN number as import and export

# II General Trends and Structural Development 1968-73 Within the Radio and TV Industry

## II-1 General Trends 1968-73

The main features for the development of the radio and TV industry 1968-73 are comprised by table II-1-a.

The total turnover for the enterprises in the trade has increased from 418 million Dkr in 1968 to 946 million Dkr in 1973. This corresponds to an annual average growth rate in turnover of 17,6 per cent.

The total turnover includes turnover of the industry's own goods and services and turnover of goods transacted.

The turnover of the industry's own goods and services has increased at an annual growth rate of 14,6 per cent in the period 1968 to 73. It appears then that this part of the turnover has increased at a relatively smaller rate than the total turnover. This also appears from the fact that the turnover of the industry's own goods and services has fallen from 81 per cent of the total turnover in 1968 to 71 per cent in 1973.

The average growth rate in the turnover of the industry's own goods and services of 14,6 per cent proceeds as a result of an annual average growth rate in the produced amount of 17,6 per cent and an annual average fall in prices of 2,5 per cent.

The development just described also appears for each individual year from table II-1-a.

The increase in the volume transacted has been above lo per cent each year with an absolute maximum increase of 28 per cent in 1972.

The average fall in prices of 2,5 per cent is a result of a fall in prices of 6 per cent i 1971 and 7 per cent in 1973. The other years, the prices have been stable.

Table II-1-b shows the development in the production index. The production index indicates changes in the physical production caused by changes either in the utilization of the factors of production or a changed productivity.

The index has been made up as the production value in real terms less the value of the consumed raw materials, semi-manufactured goods, fuel, etc., also in real terms, i.e. an index for value added in real terms. The index shows an annual increase of 12 per cent for the period as a whole in the efficiency in the utilization of the resources. A vigorous rationalization has taken place, especially in 1970.

The turnover of the radio and TV industry is characterized by vigorous but relatively stable seasonal fluctuations. This is illustrated in figure II-1-a.

Table II-1-a

The Radio and TV Industry. Development in turnover, production, prices and volumes

| Variable | unit \ year | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | Annual average growth rate 1968-73 |
|---|---|---|---|---|---|---|---|---|
| 1. Total turnover | million Dkr | 418,7 | 519,8 | 627,9 | 703,5 (714,6) | 875,8 | 946,2 | 17,6% |
| 2. Turnover of own goods and services | million Dkr | 340,5 | 401,4 | 452,5 | 496,0 (507,1) | 619,3 | 670,8 | 14,6% |
| 3. 2 in percentage of 1 | per cent | 81 | 77 | 72 | 71 | 71 | 71 | |
| 4. Index for total turnover 1968=100 | | 100 | 124 | 150 | 168 | 209 | 225 | 17,6% |
| 5. Index for turnover of own goods and services 1968=100 | | 100 | 118 | 133 | 146 | 182 | 197 | 14,6% |
| 6. Volume index for turnover of own goods and services 1968=100 | | 100 | 118 | 131 | 152 | 192 | 225 | |
| 7. Price index for turnover of own goods and services 1968=100 | | 100 | 100 | 102 | 96 | 95 | 88 | ÷ 2,6% |
| 8. Change in percentage in 5 from previous year (Δ nominal turnover) | per cent | - | 18 | 13 | 12 | 22 | 8 | 14,6% |
| 9. Change in percentage in 6 from previous year (Δ real turnover) | per cent | - | 18 | 11 | 16 | 26 | 17 | 17,6% |
| 10. Change in percentage in 7 from previous year (Δ price) | per cent | - | 0 | + 2 | ÷ 6 | ÷ 0 | ÷ 7 | ÷ 2,5% |

Notes to table 1:

The turnover of the industry's own goods and services includes invoiced sales of the enterprise's own products (including sale of goods manufactured by other enterprises by contract) and invoiced earnings for hire work and repair and mounting work for other enterprises.

The total turnover includes, furthermore, invoiced sales of goods transacted.

The turnover figures are stated as net figures, i.e. less taxes and invoiced discounts.

The volume index for the turnover is stated in 1968 prices, i.e. with 1968=100. The basis for the index calculation is the turnover for the industry's own goods and services.

In 1971 the survey sample of firms forming the basis for the tabulation was changed. This implies a correction of the turnover amounts by +11,1 million Dkr. The adjusted figures are stated in parenthesis.

Source for table 1: Statistiske Efterretninger - various volumes.

Table II-1-b

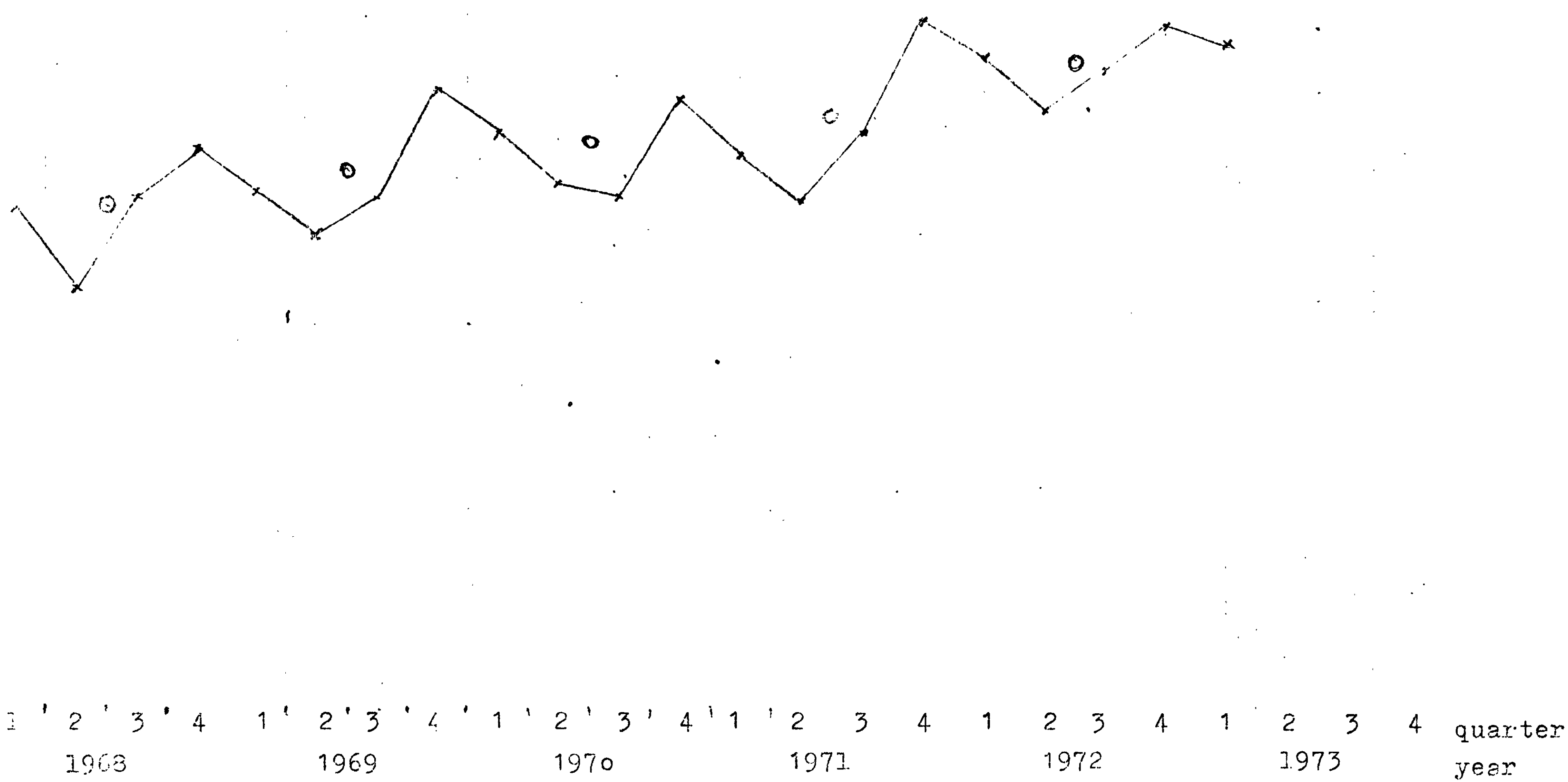
The Radio and TV Industry. Development of Value Added
1968-1973

| variable / year | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| Production index (value added) 1968=100 | 100 | 97 | 125 | 139 | | |
| Change in relation to previous year | | ÷ 3% | 29% | 11% | | |
| Average 1968-71 | | + 12% | | | | |
| Estimate for 1972/73 | | | | | + 12% p.a. | |

Figure II-1-a

**Volume index for the radio and TV industry 1968=100**

log scale



## II-2 The Development in the Production of the Radio and TV Industry of a Number of Important Products

The period 1968-73 has experienced an average growth in the turnover of the radio and TV industry's own products of 14,6 per cent.

Table II-2-a gives an illustration of the development of the production composition organized in important product groups.

The largest single product groups are radios, colour TV sets, monochrome TV sets, tape recorders and grammophones. During the period, the total domestic production of these products has had a constant share of 72 to 74 per cent of the turnover of the radio and TV industry's own goods and services. This suggests that the relative importance of the radio and TV products for the firms in the radio and TV industry has changed only slightly during the period.

During the period, however, there has been a shift of production from monochrome TV to colour TV. The colour TV production has increased at an annual average growth rate of 50 per cent from about 7 per cent of total production i 1968 to 26 per cent in 1973. In return, the production of monochrome TV has fallen at an average rate of 25 per cent per year from 20 per cent of total production of goods and services to about 3 per cent in 1973.

The production of radios has grown at an average growth rate of about 16,5 per cent, i.e. a little more than the average growth rate of 14,6 per cent, while the production of tape recorders and grammophones represents a relatively falling share of the total production with annual growth rates of about 10 per cent.

Table II-2-a

The Radio and TV Industry. Development in Production Composition - Own Products and Services

| | unit | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | Average growth rate 1968-73 |
|---|---|---|---|---|---|---|---|---|
| 1. Total turnover | million Dkr | 418,7 | 519,8 | 627,9 | (703,5) 714,6 | 875,8 | 946,2 | 17,6% |
| 2. Turnover of own goods and services | million Dkr | 340,5 | 401,4 | 452,5 | (496,0) 507,1 | 619,3 | 670,8 | 14,6% |
| Turnover of main product groups of own goods and services | million Dkr | | | | | | | |
| 3. Radio | | 81,9 | 87,7 | 105,5 | 115,0 | 135,2 | 175,0 | 16,5% |
| 4. Colour TV | million Dkr | 23,0 | 55,1 | 82,5 | 110,0 | 178,0 | 176,0 | ca.50% |
| 5. Monochrome TV | million Dkr | 67,0 | 63,9 | 50,6 | 45,1 | 26,5 | 22,0 | - 25 % |
| 6. Tape recorders | million Dkr | 31,2 | 36,7 | 33,2 | 34,7 | 31,4 | 48,2 | 9% |
| 7. Grammophones | million Dkr | 44,7 | 47,2 | 53,0 | 56,2 | 74,9 | 72,9 | 10,5 |
| 8. Σ 3-7 | million Dkr | 247,8 | 290,6 | 324,8 | 361,0 | 446,0 | 494,1 | 15% |
| 3 in percentage of 2 | per cent | 24 | | | | | 26 | |
| 4 in percentage of 2 | per cent | 7 | | | | | 26 | |
| 5 in percentage of 2 | per cent | 20 | | | | | 3 | |
| 6 in percentage of 2 | per cent | 9 | | | | | 7 | |
| 7 in percentage of 2 | per cent | 13 | | | | | 11 | |
| 8 in percentage of 2 | per cent | 72 | 72 | 72 | 72 | 72 | 74 | |

## II-3 The Development In the Supply of the Danish Market With a Number of Important Products From the Radio and TV Industry

The development in the Danish market for the most important products manufactured by the radio and TV industry is shown in table II-3-a.

In 1968 the total domestic turnover of the 7 largest product groups totalled 286,6 million Dkr. During the period the domestic turnover increased at an annual average growth rate of 23 per cent. In 1973 it amounted to 810,6 million Dkr.

In 1968 the largest single product was monochrome TV sets followed by radios, tape recorders and grammophones.

During the period the relative importance of the individual products has changed substantially. In 1973 colour TV had become the predominant product followed by radios, tape recorders and monochrome TV.

The growth rates of the individual markets show that the development in colour TV sets has been very distinctive with a growth rate in turnover of 83 per cent and in the volume transacted of 100 per cent. The growth rates for the turnover of tape recorders and radios have been 20 per cent and 16 per cent, respectively.

During the period as a whole the product group monochrome TV has experienced an average fall in turnover, both as to volume as well as nominally. Up to 1971 the turnover was fairly stable, then falling.

The turnover of amplifiers shows an irregular picture during the period with an average growth rate of 33 per cent.

During the period the market for magnetic tapes has been steadily increasing with a growth rate of 17.5 per cent.

Table II-3-a

The Radio and TV Industry. Development in Turnover In the Danish Market For the 7 Most Important Product Groups.

| | unit | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | Growth rate 1968-73 |
|---|---|---|---|---|---|---|---|---|
| 1. Radio sets | million Dkr | 73 | 95,6 | 119,9 | 95,2 | 104,5 | 151,6 | 16% |
| Radio sets | 1000 pieces | 237 | 273 | 321 | 258 | 262 | 366 | 9% |
| 2. Monochrome TV | million Dkr | 82 | 72 | 73 | 89 | 55 | 61 | - 6% |
| Monochrome TV | 1000 pieces | 90 | 77 | 76 | 99 | 66 | 77 | - 3% |
| 3. Colour TV | million Dkr | 15 | 51 | 99 | 152 | 265 | 350 | 88% |
| Colour TV | 1000 pieces | 3,8 | 15,4 | 32,8 | 49,8 | 85,1 | 119,5 | 100% |
| 4. Grammophones | million Dkr | 31,6 | 39,0 | 48,2 | 47,9 | 58,9 | 37,7 | 1968-72: 17 per cent fall in 73 |
| 5. Tape recorders | million Dkr | 55,9 | 78,3 | 100,7 | 109,8 | 105,9 | 138,8 | 20% |
| 6. Amplifiers | million Dkr | 3,5 | 1,1 | -4,0 | 10,9 | 11,2 | 14,0 | 33% |
| 7. Magnetic tapes | million Dkr | 25,6 | 29,7 | 38,1 | 43,7 | 38,1 | 57,4 | 17,5% |
| Σ 1 - 7 | million Dkr | 286,6 | 366,7 | 474,9 | 548,5 | 638,6 | 810,6 | |
| Index 1968 = 100 | 1968=100 | 100 | 128 | 166 | 191 | 223 | 283 | 23% |
| Growth in percentage of previous year | per cent | | 28 | 30 | 15 | 17 | 27 | |

The turnover is stated as sales ex works + imports (C.I.F.) - exports (F.O.B.)

## II-4 The Development In Retail Turnover Through Radio and TV Shops

The development studied above under II-3 in the supply of the Danish market with products manufactured by the radio and TV industry is based on statements of the industry's sales of its own products and import and export statistics. This implies that the estimates for the individual years may differ form the actual turnover because of changes in stocks at importers, wholesalers and retailers.

In the following the development in the supply of the Danish market with products manufactured by the radio and TV industry is illustrated by the development in the retail turnover through the radio and TV shops which constitute the actual radio trade. As these shops have a very large share of the total retail turnover, this method of calculation should give a fairly safe picture of the turnover for the individual years.

Table II-4-a gives a survey of the total number of pieces sold to consumers.

Table II-4-b gives a survey of the total turnover in Dkr (retail prices).

In table II-4-c the relative share of the turnover of the individual device groups are calculated and

table II-4-d gives a calculation of the relative development for the individual groups of devices in terms of the previous year.

For the period as a whole these surveys show the same main trends in development as those found in section II-3.

For an over-all illustration of the development in the retail turnover, table II-4-e states the development in the index for the turnover of the radio and TV shops in volume and Dkr and the index for the development in consumer prices.

The nominal average growth rate for the retail turnover has been 19,5 per cent, the real turnover has increased by an annual average of 17,5 per cent. The consumer index has shown an average price increase of 2 per cent per year.

Table II-4-a

Sales to Consumers (Pieces) 1968-72

| | 1968 pieces | 1969 pieces | 1970 pieces | 1971 pieces | 1972 pieces |
|---|---|---|---|---|---|
| Monochrome TV | 75000 | 79000 | 74000 | 86000 | 77500 |
| Colour TV | 3700 | 13500 | 27000 | 46000 | 72500 |
| Stationary radios | 79800 | 89000 | 86000 | 100000 | 100000 |
| Transportable radios | 125000 | 130000 | 150000 | 145000 | 165000 |
| Tape record. spool/spool | | | | 50000 | 60000 |
| Tape record. cassette | 82000 | 105000 | 155000 | 150000 | 160000 |
| Grammophones | 80000 | 109000 | 94000 | 95000 | 82500 |
| Loudspeakers in cab. | - | - | - | 195000 | 200000 |
| Car radios | 27000 | 27000 | 27000 | 25000 | 30000 |

Table II-4-b

Retail Turnover in million Dkr 1968-1972

| | 1968 | 1969 | 1970 | 1971 | 1972 |
|---|---|---|---|---|---|
| | million Dkr | | | | |
| Monochrome TV | 157 | 167 | 166 | 182 | 161 |
| Colour TV | 27 | 90 | 179 | 309 | 498 |
| Stationary radios | 141 | 129 | 143 | 177 | 180 |
| Transportable radios | 65 | 65 | 83 | 84 | 101 |
| Tape record. spool/spool | | | | | 105 |
| Tape record. cassette | 98 | 125 | 165 | 196 | 131 |
| Grammophones | 37 | 59 | 77 | 77 | 66 |
| Loudspeakers in cabinets 1) | | 53 | 77 | 90 | 90 |
| Car radios | 20 | 21 | 24 | 23 | 25 |
| Total devices | 545 | 709 | 914 | 1138 | 1357 |
| Accessories for TV 2) | 29 | 30 | 37 | 40 | 47 |
| Accessories for tape recorders and tapes | 27 | 32 | 32 | 36 | 56 |
| Records and recorded tapes | 85 | 105 | 120 | 144 | 160 |
| Grand total | 686 | 876 | 1103 | 1358 | 1620 |

1) Loudspeakers included under Stationary radios

2) Including antennas

Table II-4-c

Retail Sales (to Consumers)
Amounts Distributed In Percentage For Groups of Devices

| | 1968 | 1969 | 1970 | 1971 | 1972 |
|---|---|---|---|---|---|
| | | | per cent | | |
| Monochrome TV | 29 | 24 | 18 | 16 | 12 |
| Colour TV | 5 | 13 | 20 | 27 | 37 |
| Staionary radios | 26 | 18 | 16 | 16 | 13 |
| Transportable radios | 12 | 9 | 9 | 7 | 7 |
| Tape recorders | 18 | 18 | 18 | 17 | 17 |
| Grammophones | 7 | 8 | 8 | 7 | 5 |
| Loudspeakers in cabinets 1) | | 7 | 8 | 8 | 7 |
| Car radios | 3 | 3 | 3 | 2 | 2 |
| | 100% | 100% | 100% | 100% | 100% |

1) Loudspeakers included under Stationary radios

Table II-4-d

Index For Retail Turnover With Previous Year = 100 (Amounts)

| | 1968<br>67:100 | 1969<br>68:100 | 1970<br>69:100 | 1971<br>70:100 | 1972<br>71:100 |
|---|---|---|---|---|---|
| Monochrome TV | 111 | 106 | 99 | 110 | 88 |
| Colour TV | 385 | 333 | 199 | 173 | 161 |
| Stationary radios | 132[1)] | 129[1)] | 111 | 124 | 102 |
| Transportable radios | 107 | 100 | 128 | 101 | 120 |
| Tape recorders | 111 | 128 | 132 | 119 | 120 |
| Grammophones | 109 | 159 | 131 | 100 | 86 |
| Loudspeakers in cabinets | - | - | 145 | 117 | 100 |
| Car radios | 100 | 105 | 114 | 96 | 109 |
| Total groups of devices | 118 | 130 | 129 | 125 | 119 |
| Accessoriesfor TV | 107 | 103 | 123 | 108 | 118 |
| Accessories for tape recorders and tapes | 123 | 119 | 100 | 113 | 156 |
| Records and recorded tapes | 110 | 124 | 114 | 120 | 111 |
| Grand total | 117 | 128 | 126 | 123 | 119 |

1) Loudspeakers under Stationary radios

Accessories for TV: TV tables and antennas.

Accesories for tape recorders: Microphones, connectors and unrecorded tapes.

Records and recorded tapes: Recorded tapes mainly music cassette tapes.

Table II-4-e

Index for Retail Turnover Through Radio and TV Shops

| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| 1968 = 100 | 100 | 119 | 149 | 181 | 207 | 242 |
| Increase in terms of previous year | | + 19% | + 25% | + 21% | + 14% | + 17% |
| | | Average for the period 19,5 per cent | | | | |

Index for Volume Turnover Through Radio and TV Shops

| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| Indeks 1968 = 100 | 100 | 123 | 152 | 177 | 197 | 222 |
| Increase in terms of previous year | | + 23% | + 24% | + 16% | + 11% | + 13% |
| | | Average for the period 17,5 per cent | | | | |

Consumer Price Index for Radio,TV,etc.

| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| Index value 1964 = 100 | 128 | 123 | 126 | 131 | 135 | 139 |
| Converted into 1968 = 100 | 100 | 96 | 98 | 102 | 105 | 109 |
| Increase in terms of previous year | | - 4% | + 2% | + 2% | + 3% | + 4% |
| | | Average for the period 2 per cent | | | | |

## II-5 The Development in the Imports of the Products of the Radio and TV Industry

The main features for the development in imports of the most important products of the radio and TV industry and for these product groups as a whole will appear from table II-5-a.

The development is characterized by a vigorous increase in imports in relation to the development on the Danish market.

The annual average growth rate for imports has been 36 per cent, while the Danish market for the corresponding 5 main product groups has grown at an average growth rate of 23,5 per cent.

This difference in growth rates has implied that the imports of the 5 main product groups, totalling 44 per cent of the supply of the Danish market in 1968, amounted to a share of 72 per cent of the total supply in 1973.

The above comments do not include the market for magnetic tapes. This market is supplied 100 per cent through imports, and there is no independent Danish production.

As far as the development in the individual product markets is concerned, it appears that the market for radio sets shows a slightly irregular trend with regard to the share of imports of the Danish market. At the end of the period the imports totalled 68 per cent of the total market, while the share was slightly smaller at the beginning of the period.

The development in colour and monochrome TV is characterized by a vigorous increase in the share of imports from 36 per cent and 30 per cent, respectively, in 1968 to 70 per cent and 73 per cent, respectively, in 1973.

As far as grammophones are concerned, the share of imports of the domestic market has also doubled during the period from 35 per cent in 1968 to 71 per cent in 1973. The development is especially distinctive from 1972 to 1973.

With regard to tape recorders, the share of imports of the Danish market has grown from 70 per cent to 85 per cent.

The main conclusion for all markets as a whole is that imports constitute an increasingly larger part of the supply of the Danish market with radio and TV products.

Thus, Danish firms have been exposed to a steadily growing competition from foreign suppliers and they have not been able to keep their position on the market. Their market share has decreased from 56 per cent in 1968 to 28 per cent in 1973, i.e. a halving of their share of the market.

The supply from the Danish firms has increased by an annual average of 7,5 per cent, while imports have grown by 36 per cent per year. The total market has grown by 23,5 per cent per year.

Table II-5-a

The Radio and TV industry. Development In Imports

| Product group | The Danish market in million Dkr | | Imports in million Dkr | | Average growth rate 1968-73 for: | | Share of imports of the Danish market | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1968 | 1973 | 1968 | 1973 | The Danish market % per year | Imports % per year | 19- 68 | 69 | 70 | 71 | 72 | 73 |
| 1. Radio sets | 73,0 | 151,6 | 33,6 | 96,6 | 16 | 23,5 | 52 | 38 | 38 | 69 | 68 | 63 |
| 2. Colour TV | 14,9 | 350,5 | 5,4 | 247,1 | 88 | 114 | 36 | 40 | 52 | 61 | 59 | 70 |
| 3. Monochrome TV | 81,9 | 60,5 | 24,7 | 44,1 | - 6 | 12,5 | 30 | 39 | 56 | 63 | 71 | 73 |
| 4. Grammophones | 31,6 | 37,7 | 11,0 | 26,6 | 2 | 19,5 | 35 | 35 | 43 | 46 | 44 | 71 |
| 5. Tape recorders | 55,9 | 138,9 | 38,9 | 118,3 | 20 | 25 | 70 | 74 | 84 | 83 | 87 | 95 |
| 6. Magnetic tapes | 25,6 | 57,4 | 26,2 | 61,5 | 17,5 | 18,5 | | | 100 | | | |
| Σ 1 - 5 | 257,3 | 739,2 | 113,6 | 532,7 | 23,5 | 36 | 44 | | | | | 72 |
| Turnover of Danish firms in the market | 143,7 | 206,5 | | | | | | | | | | |
| Growth rate for the turnover of Danish firms in the market 1968-73 | | 7,5% | | | | | | | | | | |

## II-6 The Development In Exports of the Products Manufactured By the Radio and TV Industry

The main features of the development in the products manufactured by the radio and TV industry are given in table II-6-a.

As far as the 5 main groups of devices are concerned the development has been characterized by a vigorous increase in exports. The average growth rate for all groups of devices as a whole has been 23 per cent per year. As the total production has increased by an annual average of 15 per cent during the same period it means that the sales of the Danish industry to the Danish market have grown at a smaller rate than the production. During the period the growth in sales on the Danish market of these main groups of devices has been 8,5 per cent. The period has seen a growth in the share of exports of the total domestic production from 42 per cent in 1968 to 58 per cent in 1973.

Thus, the main part of the production increase which has taken place during the period has been exported. During the period the Danish radio and TV industry has doubled its production of these groups of devices and almost trebled its exports, so that the export markets took nearly 60 per cent of the production in 1973 as against 40 per cent in 1968.

The development for the individual groups has differed. As far as radio sets are concerned about 70 per cent of the production was exported in 1971-73 as against 52 per cent in 1968. In the period 1968-69 the share of exports was considerably lower - 38 per cent - corresponding to the fact that in those two years the Danish products had a relatively large part of the domestic market.

With regard to colour TV sets, the vigorous domestic demand has caused a fall in the share of exports of the vigorously growing production to a share of exports of 41 per cent in 1973.

As far as the stagnant production of monochrome TV sets is concerned, the share of exports has been fluctuating and unstable with a share of exports of 15 to 39 per cent during the period.

Grammophones have had a fairly stable share of exports of about 46 to 56 per cent during the period with a vigorous increase to 85 per cent in 1973.

As far as tape recorders are concerned, the share of exports has grown from about 45 per cent to about 55 per cent during the period.

Table II-6-a

The Radio and TV Industry. Development In Exports

| | Danish production million Dkr | | Exports million Dkr | | Annual average growth rate in percentage 1968-73 in the industry | | | Share of exports of the Danish production in percentage | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product group | 1968 | 1973 | 1968 | 1973 | Production | Exports | Sales on domestic market | 68 | 69 | 70 | 19-71 | 72 | 73 |
| 1. Radio sets | 81,9 | 175,0 | 42,5 | 120,0 | 16,5 | 23 | 7 | 52 | 38 | 38 | 69 | 68 | 68 |
| 2. Colour TV | 23,0 | 176,0 | 13,5 | 72,6 | 50 | 40 | 61 | 58 | 45 | 42 | 46 | 40 | 41 |
| 3. Monochrome TV | 67,0 | 22,0 | 9,9 | 5,5 | - 25 | -12,5+) | -28 | 15 | 32 | 37 | 27 | 39 | 25 |
| 4. Grammophones | 44,7 | 72,9 | 24,1 | 61,8 | 10,5 | 21 | 23++) | 54 | 46 | 48 | 54 | 56 | 85 |
| 5. Tape recorders | 31,2 | 48,2 | 14,2 | 27,6 | 9 | 14,5 | 4 | 45 | 45 | 50 | 45 | 55 | 57 |
| Σ 1 - 5 | 247,8 | 494,1 | 104,2 | 287,5 | 15 | 23 | 8,5 | 42 | | | | | 58 |

+) Irregular development during the period

++) Growth rate 1968-72: 23 per cent. Vigorous fall in 1973

## II-7 The Development In Prices of the Production of the Danish Radio and TV Industry, Imports and Exports

Table II-7-a gives a survey of the development in prices in the domestic production in prices ex producer, import and export prices (C.I.F. and F.O.B., respectively) for a number of important groups of articles.

In connection with table II-1-a, we saw that there has been an average fall in prices ex producer of 2,5 per cent during the period.

An analysis of the development in prices during the period within individual product groups shows a slight fall in prices for monochrome TV, colour TV and battery receivers above 1 kg. The import prices for the groups of articles mentioned do not show any substantial changes during the period, while the Danish prices ex producer for the whole production are slightly falling by about 2 to 3 per cent during the period.

The prices obtained for that part of the Danish production which is exported are stable as far as TV sets are concerned and growing for battery receivers.

Thus, the part of the Danish production sold in the Danish market has been sold at prices which have fallen at a higher rate than the average fall in prices ex producer.

Part of the explanation for this development is found in table II-7-b. This table gives a comparison of the price structure between import prices, prices ex producers for the total Danish production and export prices for that part of the Danish production which is exported.

For nearly all groups of articles, this comparison shows a very distinctive difference in the price level for the 3 prices.

During the period as a whole, the import prices have been substantially below the prices ex producers for the Danish production.

Likewise, the prices obtained for that part of the Danish production which is exported are considerably above the import prices within corresponding groups of articles.

Thus, the Danish market has been characterized by competition from relatively cheaper imported articles.

This has forced the Danish producers to lower their prices more than corresponds to the fall in prices of imported articles.

This price difference is also an explanation of the vigorous increase in the share of imports on the Danish market, illustrated above, from about 40 per cent in 1968 to about 70 per cent in 1973.

The other circumstance which clearly appears from the information stated in table II-7-b is that there is a substantial difference between the products supplied by the Danish firms and those which are imported. The Danish products are of a higher quality and have more special applications than the main part of imported products which implies that these products obtain higher unit prices both in the domestic market as well as in the export markets.

When comparing the price level for the 3 prices - average prices ex producer, average import prices and average export prices - one must make the reservation that typically the products in the three situations have reached different stages in the chain of distribution, and therefore price differences must be expected.

Typically, the import prices will be higher than the export prices for uniform products, because imports are stated in C.I.F. prices while exports are stated in F.O.B. prices. It is also typical that the producer's domestic sales will obtain higher prices ex producer than exports, because the producer on his domestic market will have a larger share of the distribution costs on the domestic market than on foreign markets, where such costs are paid by importers or agents.

Even when these circumstances are taken into consideration it seems that the price relations which have been found are so evident that there seems to be no reason to make any reservations as to the above conclusions concerning the price conditions on the Danish market and the competitive position of the Danish producers.

Table II-7-a

The Radio and TV Industry. Development In Prices Ex Producer, Import and Export Prices - Current Prices

| year | Monochrome TV | | | Colour TV | | |
|---|---|---|---|---|---|---|
| | ex producer | export | import | ex producer | export | import |
| 1968 | 1.100 | 956 | 736 | 3.833 | 3.321 | 2.878 |
| 1969 | 1.014 | 936 | 812 | 3.670 | 3.132 | 2.486 |
| 1970 | 1.053 | 941 | 858 | 3.586 | 3.395 | 2.556 |
| 1971 | 1.071 | 926 | 806 | 3.548 | 3.293 | 2.716 |
| 1972 | 1.061 | 906 | 738 | 3.708 | 3.449 | 2.729 |
| 1973 | 1.000 | 948 | 718 | 3.320 | 3.358 | 2.805 |
| Annual average change in percentage 1968-73 | - 2,0% | - 0% | - 0,5% | - 3,0% | + 0% | - 0,5% |

Table II-7-a

The Radio and TV Industry. Development In Prices Ex Producer. Import and Export Prices - Current Prices

| year | Radio with grammophone or tape recorder | | | Radio without grammophone or tape recorder | | |
|---|---|---|---|---|---|---|
| | ex producer | export | import | ex producer | export | import |
| 1968 | 793 | 1.126 | 349 | 681 | 664 | 419 |
| 1969 | 842 | 1.378 | 340 | 729 | 670 | 459 |
| 1970 | 858 | 830 | 471 | 826 | 776 | 470 |
| 1971 | 851 | 589 | 593 | 796 | 749 | 540 |
| 1972 | 1.373 | 1.325 | 605 | 793 | 776 | 620 |
| 1973 | 1.419 | 1.355 | 628 | 872 | 811 | 630 |
| Annual average change in percentage 1968-73 | + 12,5% | + 4% | + 12,5% | + 5% | +4% | 8,5% |

Table II-7-a

The Radio and TV Industry. Development In Prices Ex Producer, Import and Export Prices - Current Prices

| year | Battery receivers > 1 kg | | | Battery receivers for cars | | |
|---|---|---|---|---|---|---|
| | ex producer[x)] | export | import | ex producer | export | import |
| 1968 | 323 | 355 | 192 | | | 154 |
| 1969 | 330 | 324 | 197 | | | 17o |
| 1970 | 302 | 386 | 200 | | | 166 |
| 1971 | 269 | 357 | 253 | | | 213 |
| 1972 | 248 | 466 | 226 | | | 225 |
| 1973 | 279 | 501 | 199 | | | 236 |
| Annual average change in percentage 1968-73 | - 3,0% | 7% | + 0,5% | | | 9% |

x) All Danish battery-powered radio receivers are considered to be > 1 kg

Table II-7-a

The Radio and TV Industry. Development In Prices Ex Producer, Import and Export Prices - Current Prices

| year | | | | Battery receivers < 1 kg | | |
|---|---|---|---|---|---|---|
| | ex producer | export | import | ex producer | export | import |
| 1968 | | | | | | 68 |
| 1969 | | | | | | 64 |
| 1970 | | | | | | 64 |
| 1971 | | | | | | 69 |
| 1972 | | | | | | 70 |
| 1973 | | | | | | 66 |
| Annual average change in percentage 1968-73 | | | | | | - 0% |

Table II-7-b

part 1.

The Radio and TV Industry. The Price Structure of the Danish Production, Exports and Imports of Important Groups of Devices.
Index average import price = 100

| year | Monochrome TV | | | Colour TV | | | Radios without grammophone or tape recorder | | |
|---|---|---|---|---|---|---|---|---|---|
| | ex producer | export | import | ex producer | export | import | ex producer | export | import |
| 1968 | 149 | 129 | 100 | 133 | 115 | 100 | 163 | 158 | 100 |
| 1969 | 124 | 115 | 100 | 148 | 126 | 100 | 159 | 146 | 100 |
| 1970 | 123 | 110 | 100 | 140 | 132 | 100 | 176 | 165 | 100 |
| 1971 | 133 | 114 | 100 | 131 | 121 | 100 | 147 | 139 | 100 |
| 1972 | 143 | 122 | 100 | 136 | 126 | 100 | 128 | 125 | 100 |
| 1973 | 139 | 132 | 100 | 118 | 120 | 100 | 138 | 129 | 100 |

| year | Radios with grammophone or tape recorder | | | Battery receivers 1 kg | | |
|---|---|---|---|---|---|---|
| | ex producer | export | import | ex producer | export | import |
| 1968 | 227 | 322 | 100 | 168 | 184 | 100 |
| 1969 | 247 | 405 | 100 | 168 | 164 | 100 |
| 1970 | 182 | 176 | 100 | 151 | 193 | 100 |
| 1971 | 144 | 99 | 100 | 106 | 141 | 100 |
| 1972 | 227 | 219 | 100 | 110 | 206 | 100 |
| 1973 | 225 | 216 | 100 | 139 | 250 | 100 |

## II-8 Development In Distribution of Exports and Imports On the Main Areas, EEC, EFTA and Other Countries

With a view to illustrating the main features in the distribution of exports and imports on main areas and the development in this distribution, the products of the trade have been divided into two main groups and the development isillustrated for these two main groups.

The two product groups are:

(1) Radio and TV sets and recorders, etc. BTN 85.15.
(2) Tape recorders and grammophones, etc. BTN 92.11.

(The import information comprises mainly tape recorders and grammophones only; because of a less detailed specification in the foreign trade statistics the export information comprises a number of other products such as dictaphones, TV recorders and reproducers).

It must be noted that the analyses of product markets in section V give a more detailed specification of the development on important export and import countries for each individual main product group.

(1) Radio and TV sets BTN 85.15.

The main data for the illustration of the distribution of imports and exports are given by tables II-8-a and b. It appears from those tables that the vigorously increasing exports have had a largely unchanged relative distribution on main areas during the period with about 62 per cent to EFTA countries, 29 per cent to EEC countries and 9 per cent to other countries.

As far as imports are concerned there has been a substantial shift towards an increased share of imports from EFTA countries. Their share of imports grew from 55 per cent to 74 per cent during the period, while the share of the EEC countries fell from 35 per cent to 17 per cent. The share of other countries has been stable around 9 per cent.

(2) Grammophones and tape recorders, etc.

The exports comprising BTN 92.11. A+B present no shifts between the individual main areas during the period. About 62 per cent is exported to EFTA countries, 25 per cent to EEC countries and the rest to other countries. (Table II-8-c). In contrast, there has been a shift in imports from EFTA countries towards other countries. (Table II-8-d).

Table II-8-a

Industry: The Radio and TV Industry. Contents: Distribution of Exports On Areas.

Product Group: Radio and TV Sets and Recorders, Radio Telegraphy Equipment, Radio Navigation Equipment, Radar, etc. BTN 85.15.

| year | Total exports million Dkr | To: EFTA countries million Dkr | EEC countries million Dkr | Others million Dkr | |
|---|---|---|---|---|---|
| 1968 | 217 | 136 | 59 | 22 | |
| 1969 | 261 | 159 | 79 | 23 | |
| 1970 | 311 | 196 | 87 | 27 | |
| 1971 | 366 | 221 | 107 | 38 | |
| 1972 | 420 | 270 | 110 | 41 | |
| 1973 | | | | | |
| | % | % | % | % | |
| 1968 | 100 | 63 | 27 | 10 | |
| 1969 | 100 | 61 | 31 | 8 | |
| 1970 | 100 | 63 | 28 | 9 | |
| 1971 | 100 | 61 | 29 | 10 | |
| 1972 | 100 | 64 | 26 | 10 | |
| 1973 | | | | | |

Table II-8-b

Industry: The Radio and TV Industry. Contents: Distribution of Imports On Countries of Origin.

Product Group: Radio and TV sets. BTN 85.15c

| year | Customs tariff per cent | Total imports million Dkr | From: EFTA countries million Dkr | EEC countries million Dkr | Others million Dkr |
|---|---|---|---|---|---|
| 1968 | 22.5 | 86 | 47 | 30 | 9 |
| 1969 | 20.7 | 116 | 64 | 43 | 9 |
| 1970 | 19.8 | 186 | 122 | 50 | 14 |
| 1971 | 18.9 | 248 | 172 | 58 | 19 |
| 1972 | 18.0 | 306 | 227 | 51 | 29 |
| 1973 | | | | | |
| | | % | % | % | % |
| 1968 | | 100 | 55 | 35 | 10 |
| 1969 | | 100 | 55 | 37 | 8 |
| 1970 | | 100 | 65 | 27 | 8 |
| 1971 | | 100 | 69 | 23 | 8 |
| 1972 | | 100 | 74 | 17 | 9 |
| 1973 | | | | | |

Table II-8-c

Industry: The Radio and TV Industry. Contents: Distribution of Exports On Areas.

Product Group: Radios and grammophones etc., dictaphones, TV recorders and reproducers. BTN 92.11 A + B.

| year | Total exports million Dkr | To: EFTA countries million Dkr | EEC countries million Dkr | Others million Dkr | |
|---|---|---|---|---|---|
| 1968 | 26 | 17 | 6 | 3 | |
| 1969 | 27 | 16 | 7 | 4 | |
| 1970 | 28 | 18 | 7 | 3 | |
| 1971 | 33 | 20 | 8 | 4 | |
| 1972 | 38 | 24 | 10 | 4 | |
| 1973 | | | | | |
| | % | % | % | % | |
| 1968 | 100 | 66 | 23 | 11 | |
| 1969 | 100 | 59 | 26 | 15 | |
| 1970 | 100 | 64 | 25 | 11 | |
| 1971 | 100 | 61 | 25 | 13 | |
| 1972 | 100 | 63 | 27 | 10 | |
| 1973 | | | | | |

Table II-8-d

Industry: The Radio and TV Industry. Contents: Distribution of Imports On Countries of Origin

Product Group: Tape recorders and grammophones etc. BTN 92.11.B

| year | Customs tariff per cent | Total imports million Dkr | From: EFTA countries million Dkr | EEC countries million Dkr | Others million Dkr | |
|---|---|---|---|---|---|---|
| 1968 | 18.0 | 38 | 26 | 8 | 4 | |
| 1969 | 16.4 | 53 | 35 | 9 | 8 | |
| 1970 | 15.6 | 86 | 51 | 16 | 18 | |
| 1971 | 14.8 | 93 | 49 | 19 | 25 | |
| 1972 | 14.0 | 92 | 37 | 25 | 30 | |
| 1973 | | | | | | |
| | | % | % | % | % | |
| 1968 | | 100 | 69 | 21 | 10 | |
| 1969 | | 100 | 68 | 17 | 15 | |
| 1970 | | 100 | 60 | 19 | 21 | |
| 1971 | | 100 | 53 | 20 | 27 | |
| 1972 | | 100 | 40 | 27 | 33 | |
| 1973 | | | | | | |

## II-9 Summary of the Analysis of the Development of the Danish Radio and TV Industry During the Period 1968-73

During the period 1968-73 the Danish radio and TV industry has had an annual average growth rate in turnover of 17,6 per cent. The turnover of the industry's own goods and services has increased by 14,6 per cent.

This indicates that the industry has concentrated its production to a larger extent and supplemented its assortment by dealing in manufactured goods from other firms.

The turnover in terms of volume has grown at an annual growth rate of 17,6 per cent, while the prices have fallen at an average rate of 2,5 per cent during the period.

The average growth rate of value added in real terms has been 12 per cent per year, i.e. a substantial increase in the productivity and efficiency of the firms in their utilization of the factors of production.

During the period, the 5 main product groups, radios, colour TV sets, monochrome TV sets, tape recorders and grammophones - have constituted a constant share of 72 to 74 per cent of the turnover of the radio and TV industry, but there has been a vigorous shift in the ratio between the product groups. The production of monochrome TV sets has been reduced, while the production of colour TV sets has been steadily growing at a substantial rate, so that colour TV had become the most important single product group in the industry in 1973 followed by radios, which, relatively, have had a growing importance during the period. Tape recorders and grammophones are no.s 4 and 5 in the hierarchy of important product groups. Their relative shares of the production have been slightly falling, however, during the period.

The Danish market for the main groups of devices has grown during the period at an annual average growth rate of 23 per cent, i.e. the market has almost trebled during the period. The main factor behind this increase is an annual growth rate of 88 per cent in the turnover of colour TV sets. This increase coincides with the fact that the turnover of monochrome TV sets has decreased by 6 per cent per year, so that the turnover of colour TV sets was 6 times the turnover of monochrome TV sets in 1973. The other product markets have shown steady increases of 15 to 20 per cent per year.

The Danish retail turnover through the radio trade has increased at a slightly smaller growth rate during the period, i.e. a growth rate of 19,5 per cent in turnover and an increase in the volume transacted of 17,5 per cent per year.

During the period the consumer prices as a whole have increased by 9 per cent, while the prices ex producer as far as the Danish production is concerned have fallen by 12 per cent, and the import prices for TV sets have not changed while they have grown for radios. For all product groups as a whole, it must be assumed that the price for both imported products and products manufactured by Danish firms has been falling.

During the period there has been a vigorous shift in the Danish production through increased specialization in relatively expensive products. During the period as a whole the market share of the Danish radio and TV producers for the main groups of devices has been reduced from 56 per cent to 28 per cent. In return, the Danish radio and TV producers have increased their exports from 42 per cent of total production in 1968 to 58 per cent in 1973. The main motive power behind this development has been a specialization in production of relatively better and more expensive products with a more limited potential in the individual markets. This development is reflected in the price structure for the Danish production, exports and imports. During the period as a whole the Danish market has been characterized by the presence of imported products at relatively lower prices. These products have taken a steadily growing share of the Danish market, and they have caused a pressure on the prices charged by the Danish producers with the result that these prices have experienced a relative fall in relation to import prices and in relation to the prices obtained for the exports of the Danish producers. The Danish producers have adjusted themselves to this development by specialising the production in products of high quality which can obtain higher prices, but which also have the possibility of a limited dispersion in the individual markets. This development reflects itself in an annual average growth rate of the production of 15 per cent, of exports of 23 per cent and of the part which is sold in the domestic market of 8,5 per sent during the period 1968-73.

Compared to international standards the volume of exports from the Danish radio and TV industry must be characterized as modest in comparison with markets such as Great Britain, Germany, etc.

The Danish production of TV sets is also modest compared to international standards.

## III General Trends and Structural Development in Number of Enterprises, Employment, Wages and Turnover 1968-73

### III-1 Development in Number of Enterprises

Table III-1-a gives a survey of the number of enterprises in the radio and TV industry.

During the period the total number of enterprises in the trade has been very constant, viz. between 18 and 21. The size of the enterprises indicates that there has been no substantial shift in the relative sizes of the enterprises. Most enterprises are small - only two have constantly had more than 500 employees during the period.

Table III-1-a

The Radio and TV Industry. Number of Enterprises Distributed According to Number of Employees

| year | total number of enterprises | Number of employees per enterprise: 6 - 9 | 10 - 19 | 20 - 49 | 50 - 99 | 100 - 199 | 200 - 499 | 500 or more | Total number of employees in enterprises distributed according to number of employees++): 6 - 49 | 50 or more | total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Antal virksomheder | | | | | | | | | |
| 1968 | 18 | 2 | 4 | 3 | 3 | 1 | 2 | 3 | 152 | 3.653 | 3.805 |
| 1969 | 19 | 1 | 4 | 5 | 1 | 3 | 2 | 3 | 201 | 4.143 | 4.344 |
| 1970 | 21 | 2 | 1 | 8 | 2 | 3 | 3 | 2 | 265 | 4.451 | 4.716 |
| 1971 | 19 | 1 | 4 | 4 | 1 | 5 | 2 | 2 | 193 | 4.044 | 4.237 |
| 1972 | 19 | 0 | 5 | 4 | 0 | 5 | 2 | 2 | 185 | 4.315 | 4.500 |
| 1973 | 19 | 0 | 5 | 4 | 0 | 5 | 3 | 2 | 185 | 5.015 | 5.200 |

Source: 1968-71 Industristatistik

+) 1972 and 73: Own estimates

++) exclusive of employees in branches geographically divided from the main enterprise such as sales offices.

## III-2 Development in Employment, Wages and Turnover

The total number of employees in the enterprises of the trade has developed from nearly 4,000 in 1968 to a little more than 5,000 in 1973.

It appears from table III-2-a that approx. 30 per cent of those employed are salaried employees. It also appears that approx. 60 per cent of the labour force are women.

Table III-2-a also gives a survey of the development in total wage costs for the trade and the total number of man hours. When reading the table one must remember that it is based on two different classifications of enterprises in the radio and TV industry, as the priciples of classification were changed in 1971 from ISIC 1958 to ISIC 1968. This change makes immediate comparisons between the total figures for the period difficult.

To present a more distinct impression of the development trends, table III-2-b gives a survey of the relative development from year to year based on the same enterprises for both years. This survey shows that the period as a whole has seen a growth in the total number of man hours in spite of the fact that both 1970 and 1971 saw a fall in the total number of man hours within the radio and TV industry. As the radio and TV industry employs a high percentage of women working short time, the number of man hours is a better demonstration of the development in employment than the number of employees measured in number of persons.

The change in total wage costs shows a wage increase of 15 to 22 per cent per year for all enterprises. There has also been an annual increase in time rate of wages of approx. 10 to 20 per cent.

Table III-2-c gives a survey of the development in the average size of the enterprises with regard to turnover of own goods and services, wage costs and employment. If we disregard the change in methods of classification for delimitation of the trade in 1971, this survey shows an increase in the average size of the enterprises with regard to number of employees from 214 in 1968 to 248 in 1972, and with regard to average wage costs from 5,211 in 1968 to 9,297 in 1972.

This relatively more vigorous increase in wage costs than in employment is the result of a vigorous increase in average wages per employee. This circumstance is also shown by table III-2-c.

The increase in the average turnover per enterprise has been from approx. 19 million Dkr per enterprise in 1968 to approx. 29.5 million Dkr in 1972.

The relationship between the development in wages, employment and turnover is illustrated in table III-2-d, from which it appears that wage costs in percentage of turnover of own goods and services have increased from about 27 to 28 per cent at the beginning of the period to about 32 per cent at the end of the period corresponding to the different average growth rates (table III-2-c) in employment, wage costs and turnover per enterprise.

Table III-2-e gives a survey of the development in turnover per employee. It has increased by an average of 8.5 per cent per year during the period.

Table III-2-a

The Radio and TV Industry. Development in Employment, Number of Enterprises and Wage Costs 1968-73

| year | Total number of employees +) | Total wage costs 1000 Dkr | Number of enterprises | Salaried employees and owners | Workers | Women hereof | Total number of man hours 1000 hours | Employment index for number of man hours 197o=1oo | 1971=1oo |
|---|---|---|---|---|---|---|---|---|---|
| 1968 | 3.859 | 93.8oo | 18 | 1.o83 | 2.776 | 1.575 | 5.2o1 | 95 | |
| 1969 | 4.421 | 114.886 | 19 | 1.199 | 3.222 | 1.882 | 5.945 | 1o9 | |
| 197o | 4.77o | 132.399 | 21 | 1.4o1 | 3.369 | 1.925 | 5.468 | 1oo | |
| 1971 | 4.313 | 151.5o2 | 19 | 1.339 | 2.974 | 1.65o | 5.28o | 97 | |
| 1971 xx) | 4.8o5 | 168.939 | 24 | 1.542 | 3.263 | | 5.776 | | 1oo |
| 1972 xx) | 5.219 | 195.244 | 21 | 1.61o | 3.6o9 | | 6.331 | | 11o |
| 1973 xx) | | | | | | | | | |

+) Owners and salaried employees at the end of the month of November plus the average number of workers at the end of each month of the year(inclusive of personnel in external branches).

++) New classification in the trade designation of the official statistics based on ISIC 1968 of the United Nations: Trade designation 38.321.

Table III-2-b

The Radio and TV Industry. Development in Employment, Wage Costs and Time Rates Illustrated By the Relative Change From Year to Year for the Same Enterprises

| year | Change in percentage in total number of man hours in terms of previous year<br>per cent | Change in percentage in wage costs in terms of previous year<br>per cent | Change in percentage in time rates in terms of previous year x)<br>per cent |
|---|---|---|---|
| 1968 | | | + 11,2 |
| 1969 | + 14,7 | + 22 | + 11,5 |
| 197o | ÷ 9,o | + 15 | + 11,2 |
| 1971 | ÷ 3,o | + 15 | + 13,5 |
| 1972 | + 1o | + 16 | + 9,9 |
| 1973 | | | + 2o,4 |

x) based on the development in time rates in the electronic trade as a whole.

Table III-2-c

The Radio and TV Industry. Average Number of Employees, Average Wage Costs and Average Turnover per Enterprise

| year | Number of enterprises | Average number of employees per enterprise | Average wage costs per enterprise 1000 Dkr | Average turnover per enterprise of own goods and services 1000 Dkr | Average wages per employee Dkr |
|---|---|---|---|---|---|
| 1968 | 18 | 214 | 5.211 | 18.916 | 24.350 |
| 1969 | 19 | 232 | 6.046 | 21.126 | 26.060 |
| 1970 | 21 | 221 | 6.304 | 21.548 | 28.524 |
| 1971 | 19 | 227 | 7.973 | 26.105 | 35.123 |
| 1971x) | 24 | 200 | 7.039 | 21.129 | 35.195 |
| 1972 | 21 | 248 | 9.297 | 29.490 | 37.487 |
| 1973 | | | | | |
| Annual growth rate in percentage 1968-72 | | 3% | 12,5% | 9,5% | 9% |

x) Changed classification of enterprises in the surveys from the National Bureau of Statistics - from ISIC 1958 to ISIC 1968 of the UN

Table III-2-d

The Radio and TV Industry. Development in the Ratic Between Turnover and Wage Costs

| year | Wage Costs in percentage of turnover |
|---|---|
| 1968 | 27 |
| 1969 | 28 |
| 197o | 29 |
| 1971 | 33 |
| 1971 | 3o |
| 1972 | 32 |
| 1973 | |

Table III-2-e

The Radio and TV Industry. Development in Turnover per Employee

| year | Turnover per employee 1000 Dkr | Turnover per employee. Change in percentage in terms of previous year |
|---|---|---|
| 1968 | 88 | |
| 1969 | 91 | + 3,5 |
| 197o | 95 | + 4,4 |
| 1971 | 115 | + 21,1 |
| 1971x) | 1o6 | |
| 1972 | 119 | + 12,3 |
| 1973 | 12o | |
| Average growth rate for the period | | 8,46 |

x) Changed classification of enterprises

# IV The Development In Concentration Within the Radio and TV Trade

## IV-1 Introduction

In section III we looked at the development in total number of enterprises and their relative size. We shall further illustrate the development by a number of different measurements for concentration each pointing out different aspects of the concentration.

For a more detailed explanation of the individual concentration measurements we refer to the introduction to appendix A and B. Appendix A contains main tables for the respective indices.

## IV-2 The Development in the Relative Concentration Measurements

If we compare the development in the two relative concentration measurements, coefficient of variation and the Gini coefficient, they show different development courses during the period 1968-73. (Cf. figures IV-2-a and b and appendix A, table 2). The coefficient of variation shows an increasing concentration for all three variables, while the Gini coefficient shows a decreasing concentration with respect to turnover and employment and only a slightly increasing concentration with respect to wage costs.

With this difference between the two methods of measurement for the relative concentration it is hardly possible to say anything unequivocal about the development in the relative concentration. There are, furthermore, vigorous fluctuations in the relative concentration measurements as far as turnover is concerned during the period. These fluctuations may be due to the development around Arena, among others, whose production plant burnt down at that time.

The average concentration measured by the Gini coefficient is lying for the period as an average in the interval between 0.72 and 0.74 for all three variables. As the limits for the Gini coefficient are from 0 with equally sized enterprises and towards 1 with increasing differences between the enterprises, it is possible on the basis of the size of the Gini coefficient to draw the conclusion that the enterprises are very unequal as to size with respect to all three variables.

The average value of the coefficient of variation is situated for all three variables in the interval 2.1 to 2.3. Compared with the extreme values for equal and very unequal enterprises of 0.4 and 4.4 this index indicates a relatively medium spreading between the enterprises.

If we compare the three variables mutually both concentration measurements show a slight trend towards the variable turnover showing a lower concentration than the other two variables. This is presumably due to the fact that the small enterprises have a greater tendency to supplement the turnover of own goods and services with traded goods.

Figure IV-2-a Development in Variation Coefficient

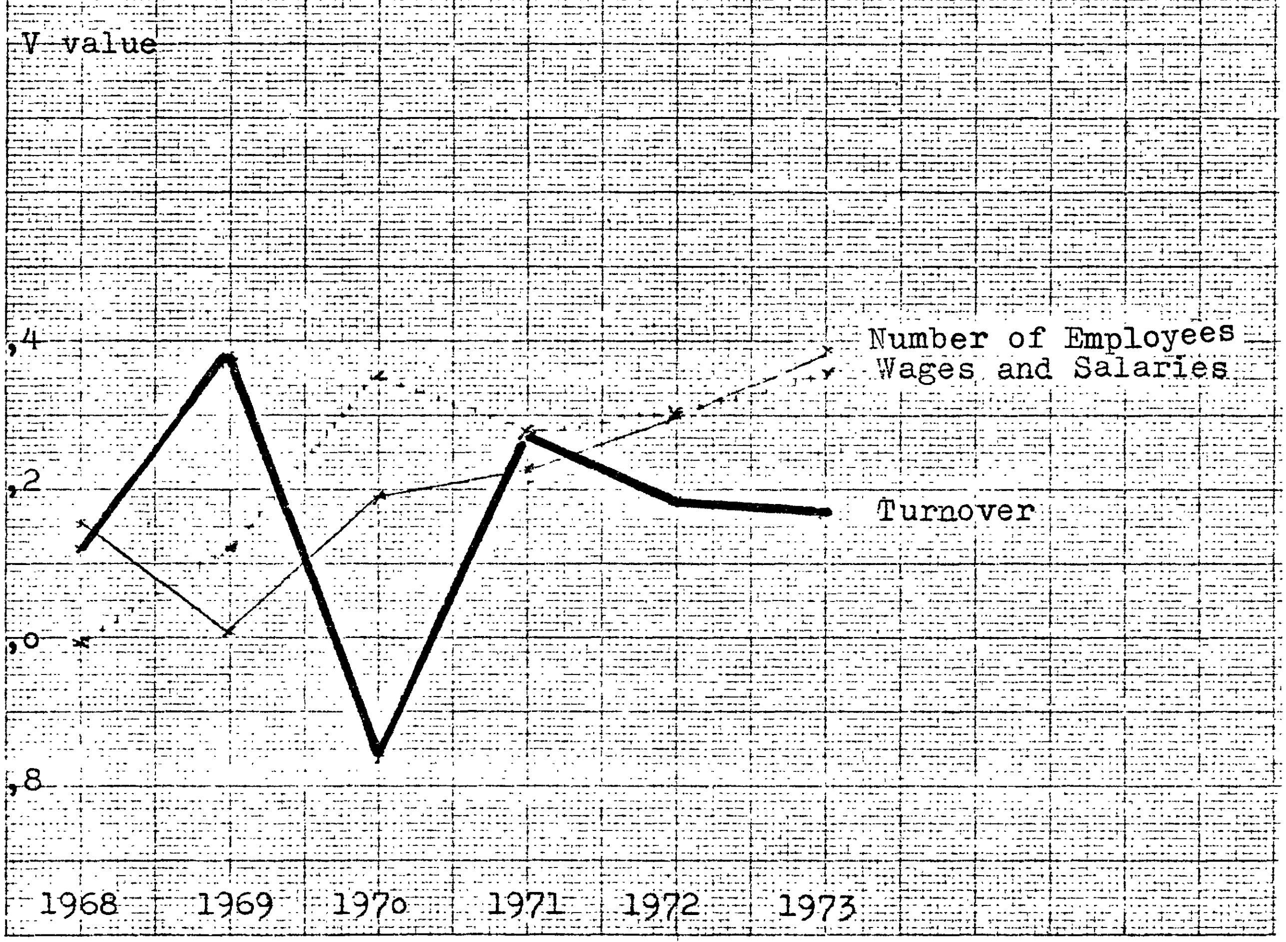
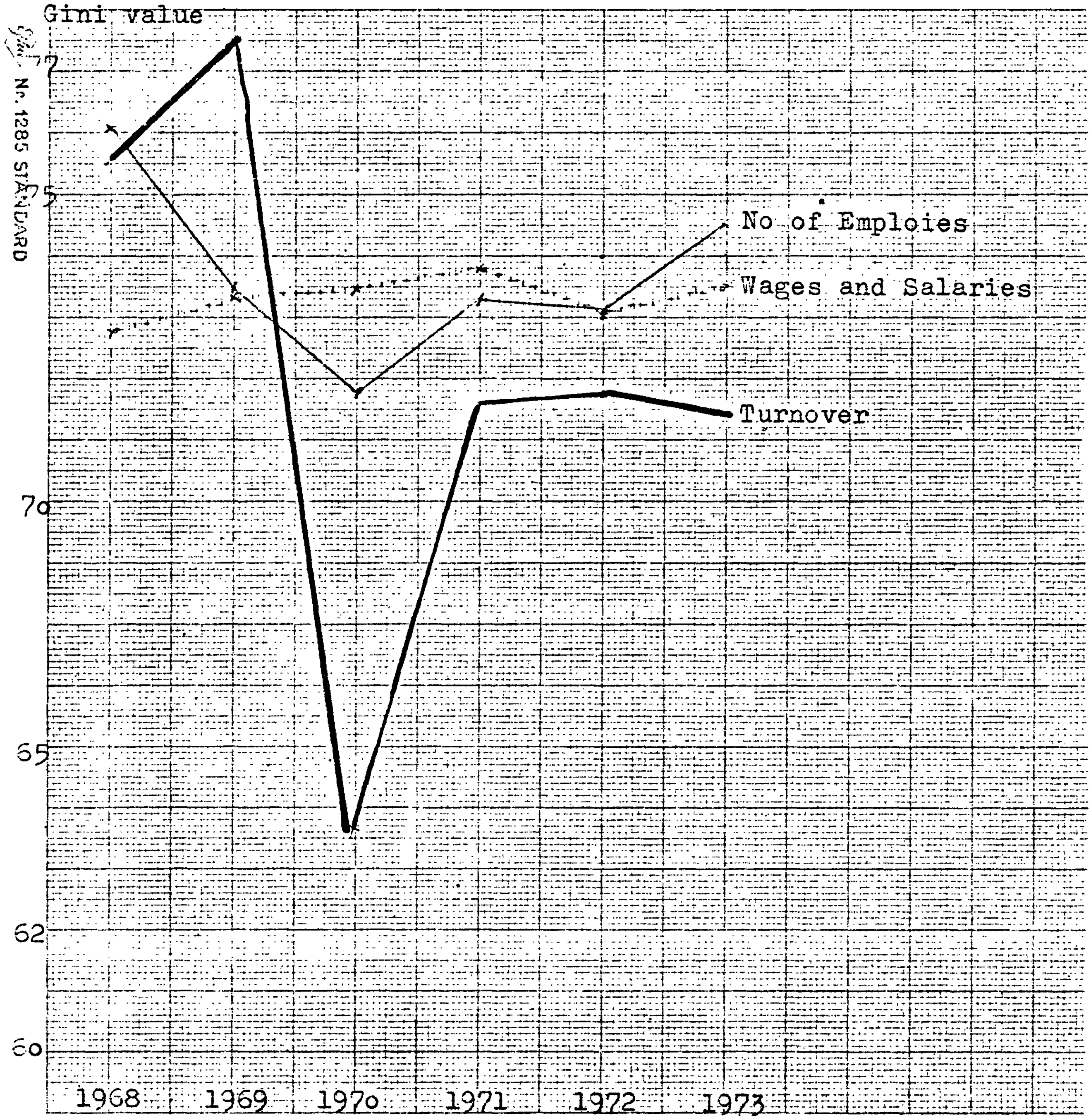


Figure IV-2-b Development in the Gini koefficient



## IV-3 The Development in Absolute Concentration Measurements

Like the development in the relative concentration measurements the two indices for absolute concentration

H = Herfindahl-Hirschman index x) and
E = Entropi index xx)

show different developments for the period, (cf. figures IV-3-a and b and appendix A, table 2).

As far as turnover is concerned, the H index indicates a lower concentration, while the E index indicates a higher concentration. Thus, there are no clear trends towards increased concentration with respect to turnover. The difference between the two indices results from the fact that the E index weights the small enterprises more than the H index.

As far as employment is concerned, both indices indicate an increased concentration, greatest, however, among the large enterprises. The concentration as to wage costs among the large enterprises shows via the H index an increased concentration, while the E index, which attaches more importance to the small enterprises, shows trends in the opposite direction.

It seems to be difficult to draw meaningful conclusions as to special trends in the concentration development on the existing basis, when we also take into consideration that the period has presented a vigorous fluctuation in the index values, especially with respect to turnover.

The absolute H value is situated for all three variables in the interval 300 to 310 and the E values in the interval 75 to 80 without pronounced differences between the three variables.

The E index value is situated approximately in the midst of the two extreme values for E. The H value lies between the middle point for the extreme values and the lower extreme values,

---

x) The lower limit for the H index is $\frac{1000}{n}$ and the greater the difference is between the enterprises, the more will H approach 1000.

xx) The lower limit for the E index is 100 x (-log n) and the more equal the enterprises become, the more will E approach 0. In contrast to the H index, the E index attaches more importance to the development for the small enterprises.

thus indicating a relatively equal structure.

Figure IV-3-a :Development in the Herfindahl-Hirschmann index

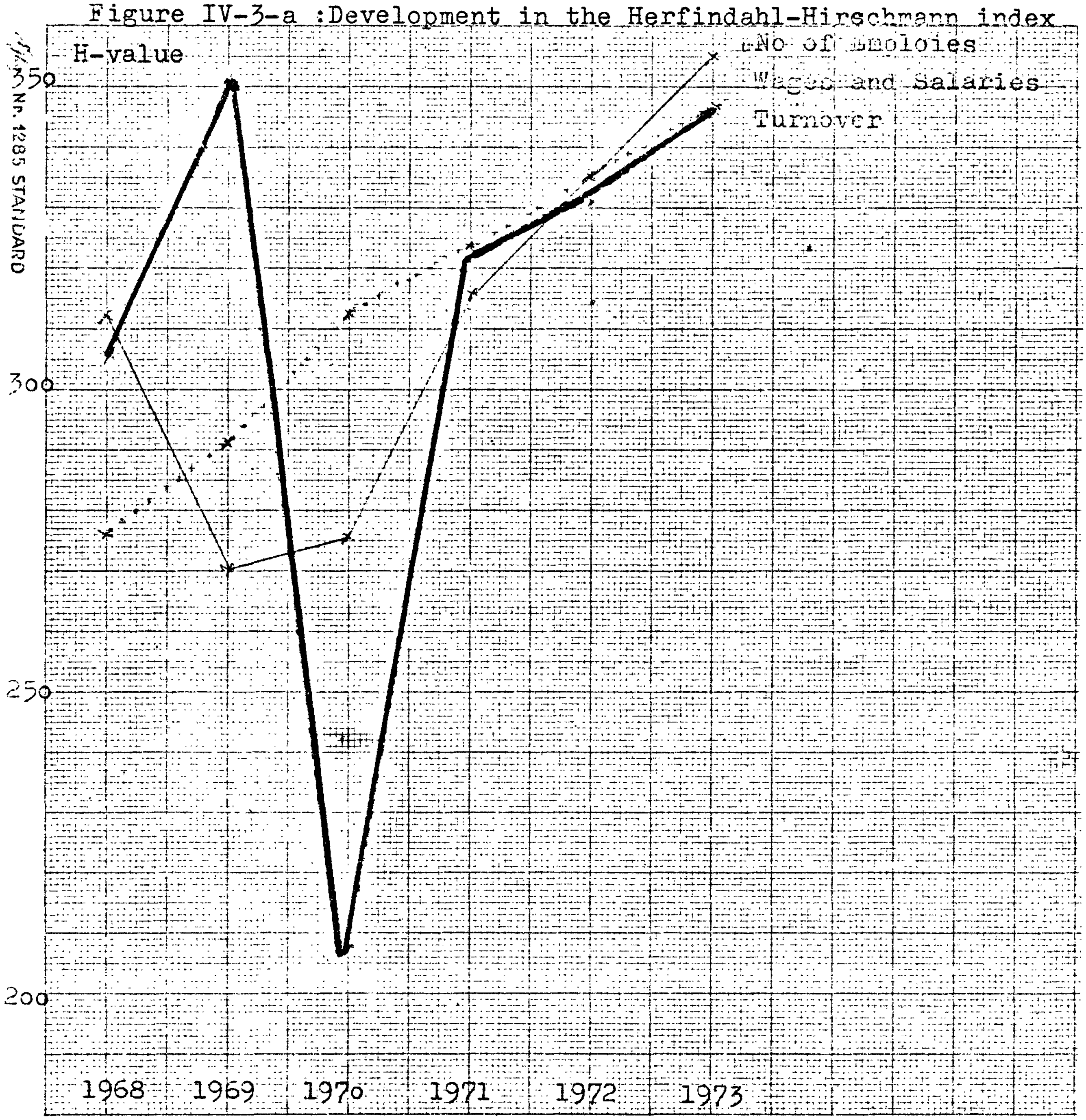
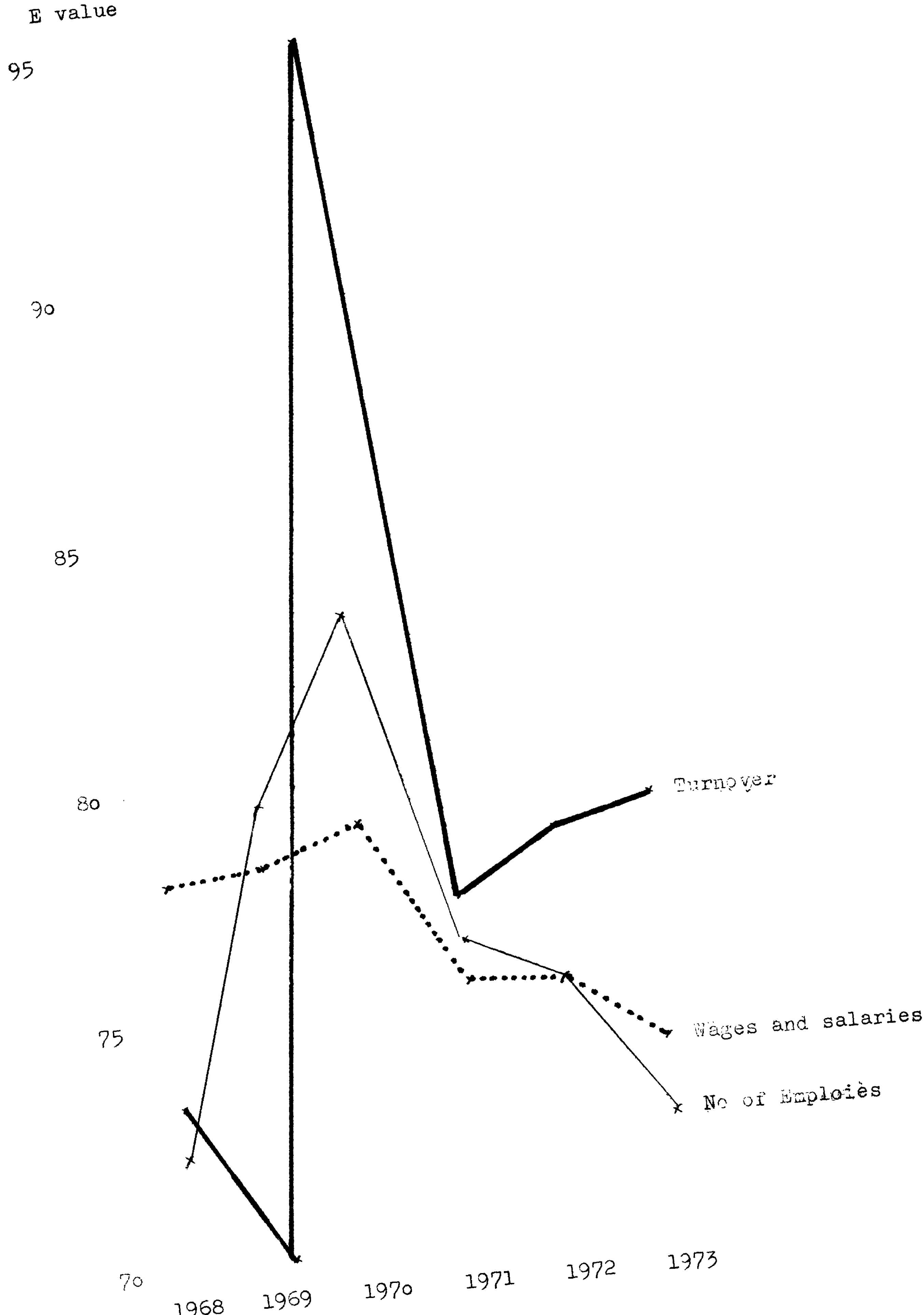


Figure IV-3-b:Development in the Entropie index



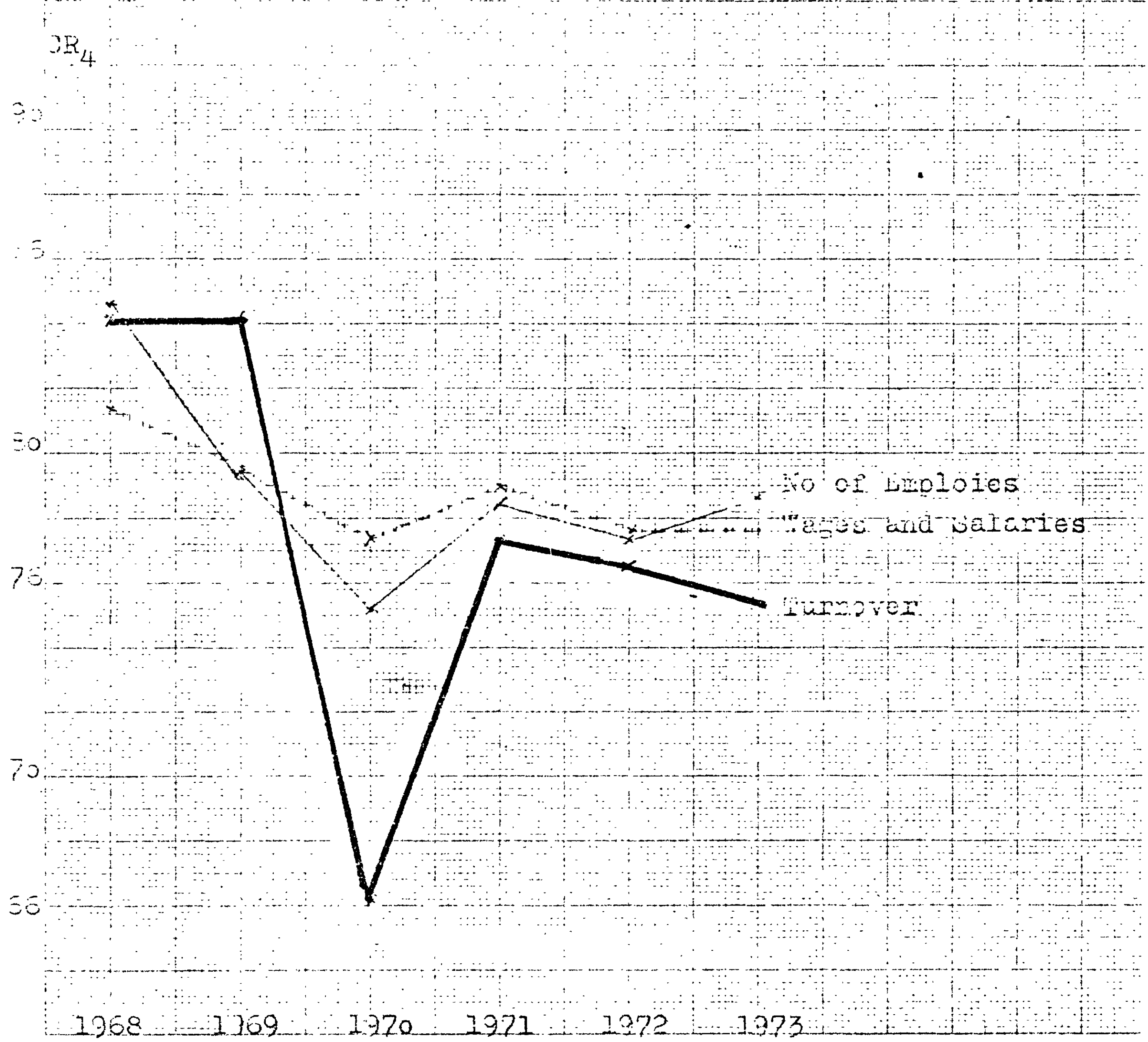
## IV-4 The Development in Concentration Index and Linda Index

### IV-4-a The Development in Concentration Index

The development in the concentration index is shown in figure IV-4-a and in appendix A, table 3.

The development in the concentration index shows that the shares of the four largest enterprises of the the respective variables have fallen fairly parallel during the period from about 83 per cent to about 77 per cent. The fall has been a little more pronounced for turnover than for the other two variables. The development has been steady during the period; specially noteworthy is a vigorous fall in concentration as to turnover in 1970. This is due to the fact that the second largest producer had no production of his own during much of the year because of a fire.

Figure IV-4-a :Development in the Concentration Index $CR_4$



## IV-4-b The Development in the Linda Index.

The Linda-index is calculated on the basis of the whole population of enterprises in the radio and TV industry.

At the beginning of the period the maximum Linda values for all 3 variables are placed in the interval 1.7 to 2.0 and are steadily increasing during the period to about 2.7. During the period as a whole the maximum Linda values for all variables are $L_2$. (Cf. table 3, p.1-3 and figure IV-4-a.) Thus, the period has seen a clear stengthening of the position which the leading enterprise has in relation to the other producers. The high Linda values are also a demonstration of a very strong concentration around the largest enterprise with respect to both turnover, employment as well as wage bill.

This does not necessarily indicate, however, that the Danish market which is relatively open and dominated by imports is characterized by a similar dominance. For a more detailed exposition of the situation in the individual product markets, we refer to section V: Analyses of product markets.

At the beginning of the period, the minimum values of the Linda index are about 0.9 and at the end of the period about 0.7. (Cf. table 3, p. 1-3, table 4 and figure IV-1-b.) Thus, at the end of the period, there was a smaller relative difference as a whole between the largest enterprises of the trade, $n_m^x$, than at the beginning of the period. The most pronounced feature of the minimum values of the Linda index is, however, that they are relatively high in proportion to the theoretical minimum for the minimum values of about 0.1 (at $n_m$=10). These high values are synonymous with a large relative difference between the predominant enterprises in the trade.

As a whole the $L_s$ values for the period are placed in the interval 1.0 and 1.4 for all three variables, and within this interval they are slightly increasing. (Cf. table 4, p.1 and 2.) These two circumstances again emphasize the relatively high and through the period increasing producer concentration, especially characterized by the concentration around a single predominant enterprise.

Figure IV-4-a

Development of the LINDA-Index:Maximum value.

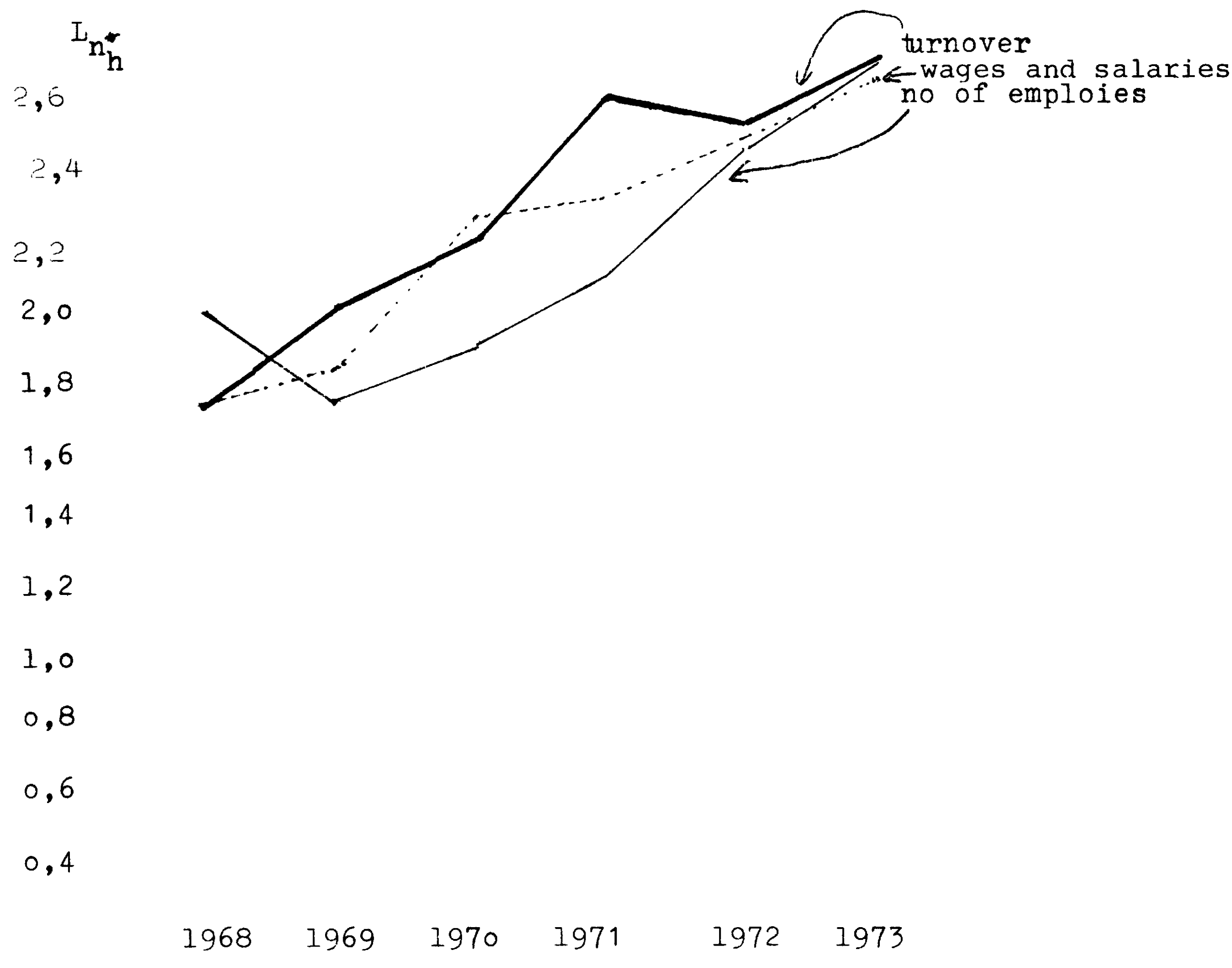
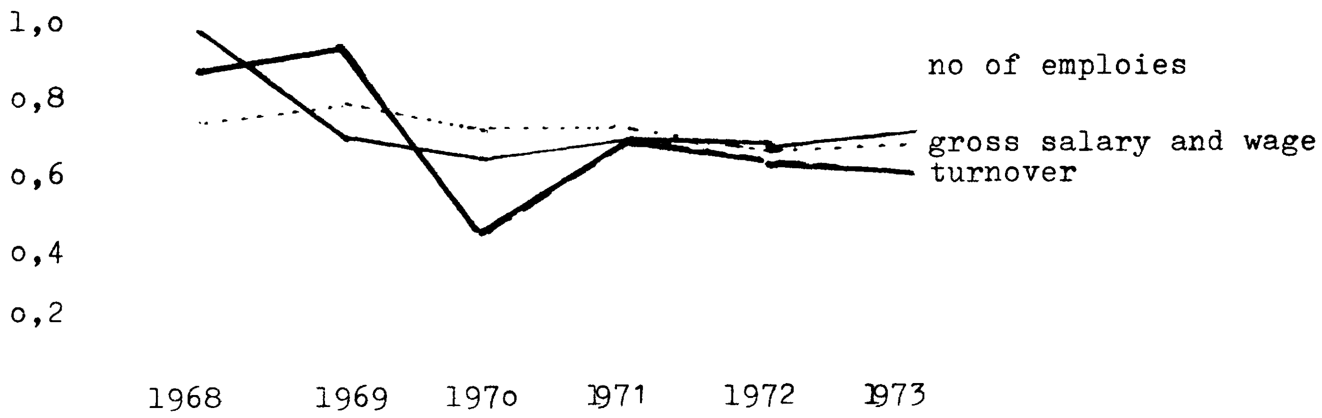


Figure IV-4-b

Development of the LINDA-index:minimum value



## IV-5 Qualitative Estimate of the Development In Concentration and Competitive Conditions, Including the Relationship To the Retail Trade

The qualitative estimate includes the following main points:

(a) Vertical integration and diversification for the largest Danish producers and suppliers of the trade.
(b) Financial and personal ties between these enterprises, including financial concentration.
(c) The development in foreign investments.
(d) Survey of important acquisitions of enterprises.
(e) Activities of multinational enterprises in the trade.

The section is arranged in such a way that these points are described in connection with a characterization of the most important producers and suppliers. After this exposition there is a survey of important points which have no natural connection with any of these enterprises.

Large Danish producers are understood as enterprises with more than 500 employees.

During the period, this involves the following 3 enterprises:

Bang og Olufsen Aktieselskab,
Rank Arena A/S and
Eltra.

Important suppliers are understood as enterprises with a substantial share of at least one product market or a not immaterial share of several product markets. (Cf. section V).

During the period, this involves the following enterprises:

Philips,
ITT/Standard Electric,
Tandberg.

Bang & Olufsen Aktieselskab

B&O is the absolutely predominant Danish producer in the trade with a turnover in 1973 of 478 million Dkr, exports of 251 million Dkr and about 3,000 employees.

B&O has a substantial share of the Danish market within the product groups: radio sets, TV sets and grammophones. During the period, their share of these markets has been falling from some 40 per cent to about 30 per cent measured as share of turnover in pieces, (cf. section V). B&O's share of turnover in Dkr has been somewhat higher, because their prices are higher than the average prices of the market.

B&O is not vertically integrated with other firms, neither with respect to purchasers, nor with respect to suppliers. It may be added, however, that B&O uses a large number of components manufactured by others in connection with their production of TV and radio sets. This results in a state of dependence on the producers of these components, including Philips, the other important supplier on the Danish market. With respect to supply these two companies have cooperated during the period through the company Philips-Bofa, but this cooperation has stopped. B&O is not vertically integrated with the distribution stages. It must be mentioned, however, that B&O maintains a selective distribution by virtue of an exemption from the Danish Monopolies Act.

B&O has no activities of any importance outside the radio and TV trade.

B&O is a Danish-owned joint stock company with a share capital of 12 million Dkr in 1972 (no. 38,303 in the Danish register of companies).

The number of shareholders does not exceed 10 and the holding of shares is strongly centered around the family of the owner.

The company has co-ownership with:

(1) Handelsaktieselskabet af 2o. dec. 1930.
This company is a trading and financing company with the same domicile as B&O. Its capital totals 2 million Dkr and the number of shareholders does not exceed 10.

(2) Scandinavian Radio Television Company.
This company has the object of carrying on trade and production. The share capital totals 1 million Dkr. The Board of Directors is identical with B&O's Board of Management. B&O acquired the company in 1969.

Scandinavian Radio and Television Company has the sister company:
Skandinavisk Radio og Television - RTC

Rank Arena A/S

The company was established in 1970 with the object of carrying on production, sale and leasing of radio and TV sets, etc. The establishment took place when the Rank Organisation Ltd., London, (share capital 30 million £ and approx. 30,000 employees) acquired the former Danish-owned company ARENA. The vendor was Hede Nielsen A/S. (This firm has a share capital of 30 million Dkr and main activity within the production of oxygen and acetylene).

During the whole period the company has been the second largest Danish producer. The number of employees has been relatively constant during the period, about 500 to 600, while the turnover has been modest compared to the total development in the trade, viz. from about 60 million Dkr to about 90 million Dkr.

The acquisition by the Rank Organisation meant no change in turnover and employment, but the production has been divided among the various places of production, so that the Danish company produces mainly TV sets.

After the acqisition the company acts as supplier of the whole range of products of the Rank Organisation in Denmark, and it also has agencies for a number of other products. Before the acquisition, Arena had a market share of 10 to 20 per cent for radio and TV sets. After the acquisition their share of the Danish market has decreased vigorously for these product groups. As far as the other product groups are concerned, they have a modest share of the total market.

Eltra

At the beginning of the period, Eltra was number three as to size of the Danish producers with about 500 employees and a turnover of a little less than 50 million Dkr. During the period, the enterprise has gradually liquidated its own production, acting to a wider extent as importer and agent for foreign producers. Of important agencies may be mentioned, among others, the Normende agency within TV (market share during the period 5 to 7 per cent) and the agency for the Japanese company SONY within radio sets and tape recorders (with market shares of 5 to 9 per cent and about 25 per cent, respectively).

This development stopped in the spring of 1974, when Sony acquired the Eltra company which had been on Danish hands until then.

Philips

The Philips combine has no important production of finished goods within the radio and TV field in Denmark. In return they have a substantial production of TV components which are mainly exported.

Philips is an important supplier on the Danish radio and TV market with market shares between 25 and 40 per cent on the product markets analysed in section V. During the period Philips has strengthened their position on the market; they have especially increased their share of the vigorously expanding market for colour TV.

Philips' production is offered for sale under several different names such as Philips, DUX, Pope, Conserton, etc.

The Philips combine as such is characterized by full vertical integration through all stages of production in connection with radio and TV. As far as integration with the distribution stages in Denmark is concerned, there is no formal vertical integration, but by virtue of its important position Philips is an enterprise with a substantial influence on the retail stage. The more definite structure of the Philips company in Denmark appears from the information given below for the parent company Philips Industri og Handels A/S. It appears from this that the company's activities in Denmark are diversified and include such fields as electric articles, production of components and telecommunication.

Philips Industri og Handels A/S
No. 24,905 in the Danish register of companies.
Founded: 1927 under the name Philips Radio, which was changed to the present name in 1954. Latest articles of association 29th March 1973.
Object: Production and trade and economic participation in ohter joint stock companies or enterprises with full or limited responsibility.
The company produces/sells: Tv components, professional TV measuring equipment, electromedical equipment and lighting fittings.

Subsidiary companies: Insotrac A/S. Strandlodsvej 2A, 2300 København S. Share capital 50,000 Dkr. Of this the parent company owns 50,000 Dkr = 100 per cent of the capital. (Forwarding).

A/S Axel S chou. Strandlodsvej 4, 2300 København S. Share capital 1,500,000 Dkr. Of this the parent company owns 1,500,000 Dkr = 100 per cent of the capital. (Financing).

Dansk Røntgen-Teknik A/S. Strandlodsvej 4, 2300 København S. Share capital 1,000,000 Dkr. Of this the parent company owns 1,000,000 Dkr = 100 per cent of the capital.

Nordisk Glødelampe-Industri A/S. Hørkær 13-15, 2730 Herlev. Share capital 1,000,000 Dkr. Of this, the parent company owns the majority. (Electric articles).

Aktieselskabet af 20. januar 1966. Strandlodsvej 4, 2300 København S. Share capital 750,000 Dkr. Of this the parent company owns 750,000 Dkr = 100 per cent of the capital.

Share capital: 75 million Dkr. The shares are not freely transfereable and presumably owned by Philips, the Netherlands.

Sister companies: Philips - Philips Lampe - Philips Radio - Philips Grammofonindustri - Repax - Finax - ABC Grammofon - Miniwatt Aktieselskab for Elektroniske Komponenter - Philips Elapparat - Philips-Electrologica - Philips Elektronik-System - Philips Telekommunikation - Philips Service.

Number of shareholders: does not exceed 10.

Number of employees: as per 1st January 1973: 1,627.

During the period 1968-72, the turnover of the company has grown from 312 million Dkr to 715 million Dkr, total gross assets from 176 million Dkr to 450 million Dkr and net proceeds from 6 to some 12 million Dkr.

Philips is the most important multinational supplier within the trade.

ITT/Standard Electric

This supplier which markets its products under several brands, among others ITT and Schraub-Lorenz, has had a steadily increasing share of the Danish market for radio and TV during the period, and in 1973 it had a share of about 10 per cent of the markets mentioned. The company has no important production of its own in Denmark, but to some extent, it has small Danish enterprises as sub-suppliers of cabinets, radios, loudspeakers, etc. The enterprise is vertically integrated with foreign producers of finished goods and components.

During the period the activities in Denmark have been organized in different ways, at the beginning of the period in the companies ITT Komponent and ITT Norden. With the acquisition of Kristian Kirks Telefonfabrikker in 1972 (until then a Danish-owned telephone factory) the structure of the company was changed, so that the two above-mentioned companies are now sister companies of the parent company Standard Electric A/S. This company produces and sells telephone and radio material. The share capital totals 25 million Dkr distributed on 3 shareholders, and the shares are not freely negotiable. The total number of employees was as per 1st January 1973 1300 persons.

Tandberg

The Tandberg products are produced by the Norwegian firm Tandberg. The enterprise is an independent, not vertically integrated firm whose products have had modest shares of the Danish market in most fields, e.g. the radio and TV markets. On the market for tape recorders, however, Tandberg has had a market share of about 25 per cent during the first part of the period and about 20 per cent at the end of the period. The enterprise has had a specially strong position for large spool recorders.

Apart from the circumstances which were pointed out during the exposition of the individual enterprises, the following may be mentioned for illumination of the points a to e of the introduction.

re (a) The vertically integrated and diversified enterprises have strengthened their positions relative to other suppliers. This applies to Philips, Standard Electric - ITT, Rank Arena and Sony seen in relation to other not integrated and diversified suppliers such as B&O and Tandberg.

re (b) In 1973 there were 6 important and independent firms on the Danish market with substantial shares of the market.

re (c) Through the mentioned acquisitions of enterprises an increased part of the Danish radio and TV industry has come under foreign control. In 1973 about 30 per cent of the industry's production was under foreign control.

re (d) The most important foreign acquisitions of enterprises have been the acquisition of Arena by the Rank Organisation and the acquisition of Eltra by Sony.

re (e) The most important multinational enterprises within the field are:
Philips
Standard Electric - ITT
The Rank Organisation and
Sony.

The Conditions of the Retail Stage and Between Producers and the Retail Stage

The Danish retail turnover of radio and TV articles is mainly concentrated around the approx. 700 specialist shops of the radio trade. The number of shops has been fairly constant during the period and so has the relative share of turnover of the specialist shops. A few attempts from marginal suppliers on the Danish market, e.g. Finnish, to use other channels of distribution have not been very successful. The retail stage maintains a high level of service and as a rule observes the recommended prices fixed by the suppliers.

The development in the retail stage has also been characterized by a vigorous increase in the part of the turnover which goes through the chains proper as well as 'improper'. In 1973 the 6 largest of these chains had about 55 per cent of the total turnover of the trade as aginst 30 to 40 per cent in 1968.

The approval from the Monopolies Authorities of the fact that the producers maintain a selective distribution and the suppliers' and the specialist shops' common interest in the matter has contributed to the maintenance of the recommended prices fixed by the suppliers - a circumstance which distinguishes the Danish market from a number of other European markets.

This matter is emphasized in this connection because a development towards increased price competition might seriously distort the competitive conditions between the suppliers in favour of suppliers of relatively cheaper products and in favour of the financially strongest suppliers.

# V Analyses of Product Markets

## V-1 Introduction

The analyses for the product markets have been accomplished for the following groups of devices:

| | | |
|---|---|---|
| Radio sets | section | V-2 |
| Monochrome TV | - | V-3 |
| Colour TV | - | V-4 |
| Grammophones | - | V-5 |
| Tape recorders | - | V-6 |

These groups of devices comprise almost the total sales of consumer devices on the Danish market. The development in turnover of the product groups as a whole was illustrated in sections II-3 and II-4. These two sections also presented a survey of the relative shift in the ratio between the individual groups of devices during the period 1968-73.

The analyses of the product markets have the aim of giving a more specific illustration of the competitive development in the individual markets.

It will be attempted to reach this goal by assigning the following contents to each of the 5 analyses of the product markets:

(1) A survey of the total number of enterprises/firms acting as suppliers in each individual market.

(2) A survey of the development in turnover for the group of devices stated as domestic production at prices ex producer less exports at F.O.B. prices plus imports at C.I.F. prices. This survey disregards movements in stocks at the retail and wholesale stages.

(3) A survey of the main suppliers in the individual markets and the development in their relative shares of the market. As a rule, the market shares are stated on the basis of the retail turnover in pieces.

(4) An illustration of the development in concentration on the market elucidated by the development in $C_4$ and $L_4$ during the period. $C_4$ and $L_4$ are calculated mainly on the basis of the retail turnover in pieces.

(5) A general characterization of circumstances important for the competitive conditions on the market, including among other things international competition, competition from substitution articles and new products, trends in foreign trade and other important technological and commercial trends.

V-2 Analysis of the Product Market for Radio Sets

The main data for the illustration of the development in the Danish market for radio sets are given in tables V-2 -a, b, c, and d.

The number of suppliers has increased during the period from some 20 to some 30. A large part of these suppliers has only a small turnover of relatively specialized devices compared to the total size of the market.

The total turnover in the market for radios has doubled during the period corresponding to an annual average growth of 15 per cent. In 1973 the total turnover amounted to a little less than 140 million Dkr.

The main suppliers on the market have been B&O and Philips. The share of B&O of the market has been falling during the period, but the enterprise is still the most important single supplier. During the period the Philips combine has had a steadily growing market share, being the second largest supplier in 1973. During the period ITT has gained a growing share of the market, while ARENA discontinued producing and supplying radio sets in 1972-73 after having experienced a falling market share. The development for the other main suppliers will appear form table V-2-b.

As a whole the concentration on the market has been slightly falling during the period. $C_4$ shows a slight fall during the period. The period has also seen an equalization of the size differences between the 4 largest suppliers. The average $L_4$ value was for first 3 years 0.90 and for the last 3 years 0.76.

Thus, both indices indicate a slight fall in concentration.

This development and the fact that the level of concentration as a whole has been low, $C_4$ has an average value of 73 and $L_4$ an average value of .83 for the period, and the fact that one/two of the enterprises included in the 4 largest enterprises have been replaced leads to the conclusions that the Danish radio market may be characterized by a low and falling concentration and as a market with a relatively keen competition between the suppliers.

These conclusions are also emphasized by the change in the position of the Danish suppliers in the radio market. During the period the share of the Danish producers of the Danish market has fallen from 48 per cent to 32 per cent, and that part of the Danish production of radio sets which is exported has grown from 52 per cent of total production in 1968 to 68 per cent in 1973 (cf. tables II-6-a and II-5-a, respectively).

The main explanation of this development is the differences as to price and assortment structure between the Danish suppliers and the foreign suppliers. It appears from table II-7-b that the import prices as a whole have been substantially lower than the prices charged by the Danish producers during the period. In broad outline the policy of the Danish producers during the period may be characterized by the fact that they have launched an assortment of relatively expensive and specialized devices intended to appeal to small segments of a market only. Therefore, they have had to find several markets and forgo larger and larger shares of the Danish market.

As a whole the Danish market has been characterized by an increasing degree of international competition, and large international combines like ITT and Philips have gained a substantial share of the Danish market for radio sets during the period.

It appears from table V-2-c that a steadily increasing part of the imports originate in Japan and Finland, while Germany has lost her predominant role as supplier of the Danish market. Imports are characterized for that matter by the fact that they come from many different countries.

The geographical distribution of and development in exports appear from table V-2-d. In accordance with the above mentioned, exports are distributed on a large number of countries.

The development in prices for radio sets is illustrated by table II-7-a. It appears from this table that prices for radio sets have been steadily rising during the period with annual average growth rates of 4 to 12 per cent. This does not apply to battery receivers, however. This development is connected with a vigorous shift in the quality of radio sets.

The sales of monophonic radio sets have been stagnant during the period, the whole increase in turnover originates in stereophonic radios without built-in loudspeakers.

Table V-2-a

The Radio and TV Industry. Product Group: Radio Sets exclusive of Radios for Cars. Contents: Number of Suppliers, Total Turnover, $C_4$, $L_4$.

| year | Number of suppliers | Total turnover x) million Dkr | $C_4$ | $L_4$ |
|---|---|---|---|---|
| 1968 | 26 | 68,2 | 79 | o,78 |
| 1969 | 21 | 9o,6 | 72 | 1,o4 |
| 197o | 23 | 115,5 | 74 | o,88 |
| 1971 | 32 | 88,4 | 71 | o,78 |
| 1972 | 32 | 97,8 | 7o | o,67 |
| 1973 | 32 | 138,8 | 7o | o,84 |
| Average growth rate 1968-73 | | 15% | | |

x) At prices ex producer or import prices C.I.F. and not adjusted for changes in stocks.

Table V-2-b

The Radio and TV Industry. Product Group: Radio Sets exclusive of Radios for Cars. Contents: The Market Shares of the Individual Suppliers.

| Suppliers: | Market share in per cent | | | | | |
|---|---|---|---|---|---|---|
| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
| B & O | 49 | 40 | 40 | 35 | 32 | 30 |
| Philips/Pope | 10 | 17 | 19 | 20 | 20 | 25 |
| ITT | 5 | 6 | 7 | 7 | 10 | 10 |
| Eltra/Sony | 7 | 7 | 7 | 9 | 8 | 5 |
| Arena | 13 | 7 | 5 | 4 | 2 | |
| Tandberg | 6 | 8 | 8 | 7 | 7 | 5 |
| Other small suppliers | 10 | 15 | 14 | 18 | 21 | 25 |
| Total retail turnover i pieces = | 100% | 100% | 100% | 100% | 100% | 100% |

Table V-2-c

The Radio and TV Inudstry. Imports of Radio Sets Distributed on Country of Origin with a Share of More Than 10 per cent of Total Imports

| | 1968 | | 1969 | | 197o | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total imports | 33,6 | loo | 4o,8 | loo | 54,9 | loo | 59,6 | loo | 56,9 | loo | 96,6 | loo |
| from: Finland | 4,5 | 13 | 3,7 | 9 | 9,5 | 17 | 12,1 | 2o | 12,1 | 21 | 21,6 | 22 |
| Norway | 3,5 | 1o | 4,9 | 12 | 5,1 | 9 | 6,4 | 11 | 4,5 | 8 | 7,4 | 8 |
| Japan | 3,2 | 1o | 4,6 | 11 | 7,9 | 14 | 9,4 | 16 | 15,5 | 27 | 23,4 | 24 |
| West Germany | 11,8 | 35 | 16,o | 39 | 14,6 | 27 | 11,5 | 19 | 6,4 | 11 | 14,9 | 15 |
| Sweden | 6,o | 18 | 1,4 | 3 | 2,5 | 5 | 4,6 | 8 | 4,8 | 8 | 4,5 | 5 |

Table V-2-d

The Radio and TV Industry. Exports of Radio Sets Distributed On Recipient Countries With a Share of More Than 10 per cent of Total Exports

| | 1968 | | 1969 | | 197o | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total exports | 42,5 | loo | 32,9 | loo | 4o,5 | loo | 78,8 | loo | 91,5 | loo | 12o,o | loo |
| to: UK | 5,8 | 14 | 3,o | 9 | 4,4 | 11 | 19,1 | 24 | 24,3 | 27 | 43,6 | 36 |
| West Germany | 5,3 | 12 | 6,9 | 21 | 8,7 | 22 | 14,3 | 18 | 2o,1 | 22 | 18,5 | 15 |
| Sweden | 11,8 | 28 | 6,1 | 19 | 12,o | 3o | 14,8 | 19 | 13,o | 14 | 7,3 | 6 |

V-3 Analysis of the Product Market for Monochrome TV

Main data for the illustration of the development in the Danish market for monochrome TV are given by table V-3-a. The export and import development for monochrome as well as colour TV is illustrated by tables V-3-c and d.

The number of suppliers on the market has been steadily increasing during the period from about 14 in 1968 to 22 in 1972. The main part of these suppliers has had a small share of the turnover only on the market, however.

The total turnover on the market of monochrome TV has fallen by an annual average of 6 per cent during the period. The fall in turnover has taken place mainly in 1972 and 73, however. In 1973 the market had a total turnover of 61 million Dkr in ex producer/C.I.F. prices.

During the period the most important suppliers in the market have been B&O, Philips, ITT and Arena.

During the period the Danish producers B&O and Arean/Rank have had a steadily falling share of the market while Philips and ITT have had a steadily increasing share.

The development in the market shares of the most important suppliers appears from table V-3-b.

As a whole the concentration on the market has been falling. $C_4$ has fallen from 81 in 1968 to 73 in 1973, and the development in $L_4$ indicates a greater equality between the 4 largest suppliers.

Thus, both indices indicate a falling concentration. The absolute level of concentration on the market for monochrome TV is moderate with approx. 75 per cent of the turnover distributed on 4 relatively equal suppliers. These circumstances indicate that the market for monochrome TV is characterized by a relatively keen competition. This characteristic may also be supported by a reference to the change in the position of the Danish producers in the Danish market. During the period the Danish producers have had to renounce on a substantial share of the Danish market to imported devices. These devices have been able to gain a relatively larger part of the market by virtue of the fact that they have been relatively cheaper than the devices produced in Denmark. At the same time, however, the Danish producers have succeeded in exporting a steadily growing part of their production. During the period as a whole there has been a vigorous fall in the production of monochrome TV sets to the advantage of the production of colour TV sets. The vigorous foreign competition at slightly falling prices and at a substantially lower price level than the price level for the Danish products has resulted in an annual average fall in Danish prices ex producer of 2 per cent.

(The development in imports, exports and price conditions is illustrated in tables II-5/6/7-a and 7-b.)

Table V-3-a

The Radio and TV Inustry. Product Group: Monochrome TV. Contents: Number of Suppliers, Total Turnover, $C_4$, $L_4$.

| year | Number of suppliers | Total turnover x) million Dkr | $C_4$ | $L_4$ |
|---|---|---|---|---|
| 1968 | 14 | 82 | 81 | o,66 |
| 1969 | 18 | 72 | 82 | o,55 |
| 197o | 17 | 73 | 77 | o,51 |
| 1971 | 22 | 89 | 77 | o,46 |
| 1972 | 22 | 55 | 75 | o,57 |
| 1973 | | 61 | 73 | o,49 |
| Growth rate 1968-71 | | ÷ 6% | | |

x) Production at prices ex producer less exports F.O.B plus imports C.I.F.

Table V-3-b

The Radio and TV Industry. Product Group: Monochrome TV. Contents: The Market Shares of the Individual Suppliers

| Suppliers: | Market shares i per cent 1968 | 1969 | 197o | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| B & O | 35 | 33 | 3o | 28 | 28 | 27 |
| Philips/Pope | 18 | 19 | 21 | 24 | 26 | 24 |
| ITT | 8 | 1o | 1o | 12 | 12 | 12 |
| Arena | 2o | 2o | 16 | 13 | 9 | 1o |
| Tandberg | 4 | 5 | 5 | 6 | 6 | 6 |
| Eltra/Nordmende | 6 | 7 | 7 | 6 | 5 | 5 |
| Other smaller suppliers | | | 1o | | | |
| Total retail turnover in pieces = | 1oo% | 1oo% | 1oo% | 1oo% | 1oo% | 1oo% |

Table V-3-c

The Radio and TV Industry. Exports of TV sets Distributed On Recipient Countries With More Than 10 per cent of Total Exports.

| | 1968 | | 1969 | | 197o | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total exports | 24,o | 1oo | 45,o | 1oo | 53,6 | 1oo | 62,9 | 1oo | 81,9 | 1oo | 78,2 | 1oo |
| to: UK | 1,4 | 6 | 2,o | 4 | 9,2 | 17 | 21,3 | 34 | 32,5 | 4o | 44,o | 56 |
| Norway | 2,4 | 1o | 3,o | 7 | 3,7 | 7 | 4,8 | 8 | 16,1 | 2o | 11,3 | 14 |
| Sweden | 12,8 | 54 | 25,4 | 57 | 29,o | 54 | 22,7 | 36 | 19,5 | 24 | 8,9 | 11 |
| Austria | 3,6 | 15 | 6,9 | 15 | 5,1 | 9 | 6,2 | 1o | 9,o | 11 | 6,9 | 9 |

Table V-3-d

The Radio and TV Industry. Imports of TV Sets Distributed on Countries With More Than 10 per cent of Total Imports

| | 1968 million Dkr | 1968 % | 1969 million Dkr | 1969 % | 197o million Dkr | 197o % | 1971 million Dkr | 1971 % | 1972 million Dkr | 1972 % | 1973 million Dkr | 1973 % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total imports | 3o,6 | loo | 49,6 | loo | 93,1 | loo | 149,6 | loo | 198,4 | loo | 291,1 | loo |
| from: Sweden | 8,1 | 26 | 18,o | 36 | 36,9 | 4o | 52,9 | 35 | 84,o | 42 | 117,5 | 41 |
| Austria | 4,o | 13 | 6,o | 12 | 8,7 | 9 | 21,3 | 14 | 31,7 | 16 | 56,8 | 2o |
| West Germany | 6,1 | 2o | 8,6 | 17 | 7,7 | 8 | 13,5 | 9 | 15,o | 8 | 31,o | 11 |
| Norway | 8,o | 26 | 11,1 | 22 | 2o,3 | 22 | 2o,3 | 14 | 16,7 | 8 | 31,3 | 11 |

## V-4 Analysis of the Product Market for Colour TV

Main data for the illustration of the development in the Danish market for colour TV are given in tables V-4-a and b. The import and export development for monochrome and colour TV is illustrated by tables V-3-c and d.

At the beginning of the period, the market for colour TV was modest, because there were only few programmes in colour. During the period the number of hours in which it is possible to watch programmes in colour, has been steadily increasing.

During the period the market for colour TV sets has been substantially expanding. The annual average growth rate for the market has been 88 per cent. In 1973 colour TV was the most important single product group within the radio and TV field with a total turnover of 350 million Dkr in prices ex producer. At the same time, the number of suppliers has doubled from 11 in 1968 to 22 in 1973.

During the whole period the main suppliers have been B&O and Philips. These two enterprises together have had 60 to 70 per cent of the total market during the period as a whole. At the beginning of the period B&O had the largest share, and at the end Philips had the largest share. The development for the other suppliers will appear from table V-4-b. It will be seen that ITT and Tandberg (Norwegian) have gained a steadily increasing share of the market during the period, while Danish or former Danish producers like ARENA and Eltra/Normende have had a declining share. During the period as a whole the concentration on the market measured in terms of $C_4$ has been approx. 80 - a relatively high concentration. In addition, $L_4$ has been about or above 1 during the whole period. This indicates a high concentration within the group of the 4 largest enterprises. The absolute concentration on the market measured in terms of $C_4$ has been relatively constant during the period, while the relative concentration among the 4 most important suppliers has been increasing.

The market as a whole has been characterized by an increasing degree of international competition. Imports cover an ever larger part of the supply of the Danish market (table II-5-a).

In 1968 imports constituted 36 per cent of the supply of the market; in 1973 it constituted 73 per cent. During the same period, the Danish producers' exports of colour TV sets increased from 13 to 73 million Dkr (table II-6-a). Because of vigorously growing sales on the domestic market the relative share of exports of the Danish production has fallen, however.

The price structure on the market has been characterized by the fact that the average prices for imported devices have been substantially lower than the Danish prices ex producer. In addition, import prices have been slightly falling (table II-7-a). These two circumstances have implied an annual average fall in the Danish prices ex producer of 3 per cent during the period. In spite of this development there is still a substantial price difference between the prices charged by the Danish producers and the prices of imported products. Part of this price difference may be explained by the fact that the Danish production which is modest compared to international standards has aimed to a certain extent at the development of products with special style and quality features designed for more quality conscious and less price conscious segments in the market.

Table V-4-a

The Radio and TV Industry. Product Group: Colour TV. Contents: Number of Suupliers, Total Turnover, $C_4$, $L_4$.

| year | Number of suppliers | Total turnover million Dkr | $C_4$ | $L_4$ |
|---|---|---|---|---|
| 1968 | 11 | 15 | 77 | o,98 |
| 1969 | 1o | 51 | 78 | o,97 |
| 197o | 15 | 99 | 79 | 1,o8 |
| 1971 | 2o | 152 | 79 | 1,1o |
| 1972 | 2o | 265 | 77 | 1,24 |
| 1973 | | 35o | 8o | 1,27 |
| Average growth rate 1968-73 | | 88% | | |

Table V-4-b

The Radio and TV Industry. Product Group: Colour TV. Contents: The Market Shares of the Individual Suppliers

| Suppliers: | Market shares in per cent 1968 | 1969 | 197o | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| B & O | 35 | 32 | 3o | 3o | 28 | 26 |
| Philips/Pope | 28 | 32 | 36 | 37 | 38 | 42 |
| ITT | 2 | 3 | 5 | 7 | 7 | 8 |
| Arena | 9 | 9 | 7 | 5 | 3 | 3 |
| Tandberg | | 1 | 1 | 3 | 3 | 4 |
| Eltra/Normende | 5 | 5 | 6 | 5 | 3 | 2 |
| Other smaller suppliers | 21 | 18 | 15 | 13 | 18 | 15 |
| Total retail turnover in pieces = | 1oo% | 1oo% | 1oo% | 1oo% | 1oo% | 1oo% |

## V-5 Analysis of the Product Market for Grammophones

Main data for the development on the Danish market for grammophones are given in tables V-5-a, b, c, and d.

During the period the number of suppliers has grown from 14 to 18. The main part of these suppliers is of small importance, however, in relation to the total turnover of the market. During the period the total turnover of grammophones has grown at an average growth rate of 17 per cent for the period 1968-72. 1973 saw a fall in turnover. This fall coincides with a vigorous increase in the turnover of radios with built-in grammophones and/or tape recorders. This probably does not indicate a real fall in the development in the sales of grammophones of the order indicated by the figures, but rather a change towards other combinations of sound reproducers. It must be noted in this connection, however, that the development for grammophones has been characterized by a more and more advanced technique and distribution for tape recorders which have made these popular alternatives to grammophones.

The two most important suppliers in the market have been B&O and Philips. Both these two enterprises have had slightly falling market shares. Garrard/Arena has had a fairly constant share of the market, while the market share of Lenco has been steadily increasing. At the beginning of the period there was a large absolute concentration on the market with $C_4$ at about 90 and a relatively large concentration among the 4 largest suppliers with $L_4$ larger than 1. During the period, both concentration measurements decrease and the concentration has fallen from being high to being relatively moderate.

Because of the great differences as to quality between different grammophones there has been made no attempt to illustrate the development of price conditions. For a further characteristic of the competitive conditions on the Danish market it may be emphasized that the market for grammophones like the markets for the other groups of products is characterized by a vigorous increase in the international competition. It appears from table II-6-a that the share of exports of the Danish production has grown from 54 per cent in 1968 to 85 per cent in 1973. In the intervening period it has been stable, constituting 50 to 55 per cent. During the same period imports have grown from covering 35 per cent of the Danish market to covering 71 per cent. The development has also been strongest here in 1973 (table II-5-a).

Table V-5-a

The Radio and TV Industry. Product Group: Grammophones. Contents: Number of Suppliers, Total Turnover, $C_4$, $L_4$.

| year | Number of suppliers | Total Turnover x) million Dkr | $C_4$ | $L_4$ |
|---|---|---|---|---|
| 1968 | 14 | 31,6 | 88 | 1,36 |
| 1969 | 13 | 39,o | 93 | 1,oo |
| 197o | 12 | 48,2 | 88 | o,81 |
| 1971 | 18 | 47,9 | 83 | o,79 |
| 1972 | 18 | 58,9 | 81 | o,76 |
| 1973 | | 57,7 | 78 | o,75 |
| Average growth rate 1968-72 | | 17 per cent fall in 1973 | | |

x) Calculated as production at prices ex producer less exports F.O.B. plus imports C.I.F.

Table V-5-b

The Radio and TV Industry. Product Group: Grammophones. Contents: The Market Shares of the Individual Suppliers

| Suppliers: | Market shares in per cent 1968 | 1969 | 197o | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| B & O | 43 | 4o | 35 | 33 | 32 | 3o |
| Philips/Pope | 35 | 37 | 32 | 3o | 29 | 29 |
| Garrad/Arena | 5 | 6 | 6 | 6 | 6 | 6 |
| Lenco | 5 | 1o | 15 | 14 | 14 | 13 |
| Other smaller suppliers | | | | | | |
| Total retail turnover in pieces = | 1oo% | | | | | 1oo% |

Table V-5-c

The Radio and TV Industry. Exports of Grammophones Distributed on Recipient Countries With More Than 10 per cent of Total Exports

| | 1968 | | 1969 | | 197o | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total exports | 24,1 | 1oo | 21,7 | 1oo | 25,4 | 1oo | 3o,4 | 1oo | 41,9 | 1oo | 61,8 | 1oo |
| to: Sweden | 6,2 | 26 | 4,6 | 21 | 5,2 | 2o | 5,1 | 17 | 6,4 | 15 | 3,4 | 6 |
| UK | 4,5 | 19 | 4,1 | 19 | 5,9 | 23 | 14,o | 46 | 13,4 | 32 | 21,7 | 35 |
| France | 1,5 | 6 | 2,1 | 1o | 1,9 | 7 | 3,1 | 1o | 3,4 | 8 | 3,9 | 6 |

Table V-5-d

The Radio and TV Industry. Imports of Grammophones Distributed on Countries of Origin With a Share of More Than 10 per cent of Total Imports

| | 1968 | | 1969 | | 197o | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total imports | 11,o | loo | 13,5 | loo | 2o,6 | loo | 22,1 | loo | 25,9 | loo | 26,6 | loo |
| from: UK | 2,6 | 24 | 3,o | 22 | 2,5 | 12 | 3,7 | 17 | 4,9 | 19 | 3,9 | 15 |
| The Netherlands | 3,2 | 29 | 3,8 | 28 | 7,8 | 38 | 7,9 | 36 | 6,5 | 25 | 4,7 | 18 |
| USA | 1,9 | 17 | 1,7 | 13 | 2,2 | 11 | 2,9 | 13 | 2,8 | 11 | 3,o | 11 |
| Switzerland | 1,o | 9 | 1,8 | 13 | 4,1 | 2o | 4,3 | 19 | 3,5 | 14 | 4,6 | 17 |
| West Germany | 1,3 | 12 | 1,6 | 12 | 3,5 | 17 | 1,8 | 8 | 2,7 | 1o | 4,o | 15 |

## V-6 Analysis of the Product Market for Tape Recorders

The main data for the market for tape recorders are given by tables V-6-a, b, c, and d. The number of suppliers has grown during the period from 15 to 18. As to turnover, most of these are of less importance however.

During the period, the turnover of tape recorders has been vigorously increasing at an annual growth rate of 20 per cent from 56 million Dkr in 1968 to 139 million Dkr in 1973. One of the main explanations of this vigorous development is the appearance of cassette tape recorders at relatively low prices and with a relatively simple operation together with a growing supply of recorded cassette tapes. These circumstances have implied that cassette tape recorders have become a competitive alternative to grammophones.

In this analysis cassette tape recorders and spool tape recorders are dealt with together. It must be noted, however, that the calculations of market shares are based on the retail turnover in Dkr, because calculations based on pieces would present great distortions because of the price differences between cassette tape recorders and spool tape recorders. During the period the most important suppliers have been Philips, Eltra/Sony, Tandberg, B&O and Arena/AKAI. The most important have been the three first mentioned.

The development in $C_4$ shows that the market shares of the 4 largest suppliers have been falling during the period from about 90 per cent of the market to 80 per cent. $L_4$ displays a somewhat irregular course. In broad outline this is due to the fact that this concentration measurement is rather sensitive to fluctuations in the relative size of the smallest of the four enterprises. In broad outline, the market has been concentrated on 3 fairly equally sized enterprises and therefore the other suppliers have had a relatively small importance.

The share of imports of the Danish market has grown from 70 per cent in 1968 to 85 per cent in 1973. The share of exports of the Danish production has grown from 45 per cent in 1968 to 57 per cent in 1973 (cf. table II-5-a and table II-6-a, respectively).

Like the markets for the other groups of products, the Danish market for tape recorders is also characterized by a growing international competition with the difference, however, that the foreign suppliers had a predominant influence already at the beginning of the period. The original suppliers from 1968 have lost a substantial share of the market to Japanese products, however.

The vigorous growth in the market for tape recorders has resulted in a vigorous increase in the market for magnetic tapes. There are no Danish producers of magnetic tapes. The development in imports and their distribution on countries of origin is illustrated in table V-6-e. The bulk of imports comes from West Germany, USA and the Netherlands. The main suppliers on the Danish market have been Philips (import from the Netherlands), 3M (import from USA) and Agfa and BASF (import from Germany).

Table V-6-a

The Radio and TV Industry. Product Group: Tape Recorders$^{xx)}$. Contents: Number of Suppliers, Total Turnover, $C_4$, $L_4$.

| year | Number of suppliers | Total turnover$^{x)}$ million Dkr | $C_4$ | $L_4$ |
|---|---|---|---|---|
| 1968 | 15 | 55,9 | 89 | o,7o |
| 1969 | 16 | 78,3 | 9o | o,71 |
| 197o | 18 | 1oo,7 | 88 | o,9o |
| 1971 | 18 | 1o9,8 | 84 | 1,76 |
| 1972 | 18 | 1o5,9 | 85 | 1,14 |
| 1973 | | 138,8 | 77 | o,84 |
| Average growth rate nominally | | 2o% | | |

x) Production at prices exproducer plus imports C.I.F. less exports F.O.B.

xx) Cassette as well as spool.

Table V-6-b

The Radio and TV Industry. Product Group. Tape Recorders x). Contents: The Market Shares of the Individual Suppliers

| Suppliers: | Market shares in per cent | | | | | |
|---|---|---|---|---|---|---|
| | 1968 | 1969 | 197o | 1971 | 1972 | 1973 |
| B & O | 5 | 5 | 4 | 2 | 1 | 3 |
| Philips/Pope | 31 | 32 | 33 | 35 | 36 | 37 |
| ITT | 1 | 1 | 2 | 2 | 2 | 2 |
| Eltra/Sony | 3o | 28 | 26 | 25 | 26 | 27 |
| Tandberg | 23 | 25 | 25 | 22 | 2o | 18 |
| Arena/AKAI | | | | | 3 | 5 |
| Other smaller suppliers | | | | | | |
| Total retail turnover in pieces = | 1oo% | 1oo% | 1oo% | 1oo% | 1oo% | 1oo% |

x) Cassette as well as spool.

Table V-6-c

The Radio and TV Industry. Exports of Tape Recorders Distributed on Recipient Countries With More Than 10 per cent of Total Exports

| | 1968 | | 1969 | | 197o | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total exports | 14,2 | loo | 16,6 | loo | 16,6 | loo | 15,5 | loo | 17,4 | loo | 27,6 | loo |
| to: UK | 2,4 | 17 | 2,o | 12 | 2,6 | 16 | 2,9 | 19 | 4,4 | 25 | 6,7 | 24 |
| West Germany | 1,2 | 8 | 1,3 | 7 | 1,7 | lo | 2,2 | 14 | 1,7 | lo | 2,9 | lo |
| Norway | 1,o | 7 | 1,4 | 8 | 1,7 | lo | o,9 | 6 | 1,3 | 7 | 2,6 | 9 |
| Sweden | 3,o | 21 | 4,o | 24 | 4,1 | 25 | 3,1 | 2o | 2,5 | 14 | 3,7 | 13 |

Table V-6-d

The Radio and TV Industry. Imports of Tape Recorders Distributed On Countries of Origin With More Than 10 per cent of Total Imports

| | 1968 million Dkr | % | 1969 million Dkr | % | 197o million Dkr | % | 1971 million Dkr | % | 1972 million Dkr | % | 1973 million• Dkr | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total imports | 38,9 | loo | 58,2 | loo | 84,1 | loo | 9o,6 | loo | 91,9 | loo | 118,3 | loo |
| from: Japan | 2,8 | 7 | 8,6 | 15 | 18,3 | 22 | 23,4 | 26 | 3o,3 | 33 | 47,1 | 4o |
| The Netherlands | 1,2 | 3 | 2,3 | 4 | 6,1 | 7 | 7,8 | 9 | 11,8 | 13 | 16,2 | 14 |
| Austria | 8,5 | 22 | 14,1 | 24 | 23,1 | 27 | 23,3 | 26 | 15,1 | 16 | 22,8 | 19 |
| West Germany | 5,7 | 15 | 7,4 | 13 | 6,7 | 8 | 6,2 | 7 | 1o,7 | 12 | 8,9 | 8 |
| Norway | 11,6 | 3o | 14,8 | 25 | 18,5 | 22 | 16,1 | 18 | 1o,6 | 12 | 14,3 | 12 |

Table V-6-e

The Radio and TV Industry. Imports of Magnetic Tapes Distributed on Countries of Origin With More Than 10 per cent of Total Imports

| | 1968 million Dkr | 1968 % | 1969 million Dkr | 1969 % | 197o million Dkr | 197o % | 1971 million Dkr | 1971 % | 1972 million Dkr | 1972 % | 1973 million Dkr | 1973 % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total imports | 26,2 | loo | 3o,4 | loo | 39,7 | loo | 46,o | loo | 44,7 | loo | 61,5 | loo |
| from: West Germany | 13,8 | 53 | 12,o | 39 | 19,o | 48 | 17,6 | 38 | 19,2 | 43 | 25,7 | 42 |
| USA | 3,8 | 15 | 6,3 | 21 | 6,4 | 16 | 9,3 | 2o | 7,8 | 17 | 1o.9 | 18 |
| The Netherlands | 2,1 | 8 | 3,o | 1o | 3,8 | 1o | 4,6 | 1o | 4,2 | 9 | 7,7 | 13 |
| UK | 2,3 | 9 | 3,5 | 12 | 2,7 | 7 | 3,2 | 7 | 4,2 | 9 | 3,9 | 6 |

THE DANISH INDUSTRY FOR ELECTRIC HOUSEHOLD APPLIANCES - ISIC 3722

# I Delimitation of Final Products of the Inustry For Electric Household Appliances

In broad outline, the final products of the trade may be characterized as electric articles for use in private households, less such products, however, where the largest part of the value added in the production originates in the production of parts of the product other than its electric components.

The final products of the trade comprise the following main product groups:

(1) Vacuum cleaners and polishers.
(2) Mixers and whipping machines and other electric articles for the preparation of food.
(3) Ventilators, range hoods and similar articles for domestic use.
(4) Electric articles for the treatment of hair.
(5) Cookers and hot-plates.
(6) Sundry smaller articles such as irons, coffee machines, toasters and warming cupboards.

The following is a specification of the detailed contents of these main product groups stating which product groups are included in the main product groups according to Varestatistik and Udenrigshandelsstatistikken.

As the principles for the grouping of products of the official statistics were changed in 1970, there are sepcifications for the period 1968-69 and for the period 1970-73.

In relation to the above, it must be mentioned that refrigerators, washing machines and automatic dish-washers are excluded, because typically these articles obtain the largest part of the value added in connection with the production of the non-electric parts of the products.

According to production technique, the final products may be divided into two main product groups.

Group 1-3 comprises the so-called electromechanical articles while group 4-6 comprises the so-called electrothermal articles.

Vacuum cleaners/polishers plus accessories

| | import export | product statistics |
|---|---|---|
| | 1968- | 1968- |
| Vacuum cleaners | 85.06.100 | 85.06.100 |
| Polishers | 200 | 200 |
| Accessories for vacuum cleaners | 910 | 910 |
| Accessories for polishers | 990 | 990 |

Ventilators for domestic use

| | import export | | product statistics | |
|---|---|---|---|---|
| | 1968-71 | 1972- | 1968-71 | 1972- |
| Ventilators with range hood | 85.06.401 | 85.06.410 | 85.06.401 | 85.06.410 |
| Other ventilators for building-in | 402 | 491 | 402 | 491 |
| Other ventilators | 409 | 499 | 409 | 499 |

Mixers and whipping machines plus devices for the preparation of food

| | import export | product statistics |
|---|---|---|
| | 1968- | 1968- |
| Mixers and whipping machines with motors under 200 watt | 85.06.303 | 88.06.3018 |
| Mixers and whipping machines with motors over 200 watt | 304 | |
| Other devices for the preparation of food | 309 | 3090 |

Devices for the treatment of hair

| | import export | | product statistics | |
|---|---|---|---|---|
| | 1968-70 | 1971- | 1968-71 | 1971- |
| Hair driers | 85.12.301 | 85.12.311 | 85.12.301 | 85.12.311 |
| Other devices for hair-drying | 302 | 319 | 302 | 319 |
| Others | 309 | 390 | 309 | 390 |

Cookers etc.

| | import export | | product statistics | |
|---|---|---|---|---|
| | 1968-71 | 1972- | 1968-71 | 1972- |
| Cookers | 85.12.501 | 85.12.510<br>520 | 85.12.501 | 85.12.510<br>520 |

## II Production of Electric Household Appliances ISIC 3722

### Main features of General Trends and Structural Development During the Period 1968-73

### II-1 Development in Number of Enterprises, Employment, Turnover and Wage Costs

The main features of the development during the period are given by table II-1-a.

During the period 1968-73 there have been only about 10 enterprises which can be included in the trade, and during the period there has been a constant number of enterprises in the trade of 9 to 10. Only two of these have had a constant number of more than 500 employees.

In contrast to the number of enterprises in the trade, the development in employment shows great fluctuations. From 1968 to 1969 the number of employees doubled from 1,867 to 3,704. There is a slight fall in employment from 1969 to 1970, and in the following year a vigorous reduction in employment by about 1000 persons. 1972 and 73 saw a slight increase in the employment.

The development in turnover follows more or less the same pattern as that described above for employment with a vigorous increase in 1973, however. The development in total wage costs is characterized by a considerable growth in average wages per employee during the period.

The vigorous fluctuations stated above in employment, wage costs and turnover in the trade are due mainly to the development in the largest enterprise of the trade. In 1968/69 this enterprise which was established in the mid-sixties, experienced a considerably vigorous increase in demand for its main product, a specially constructed set of curlers. The demand was specially large on the American market and resulted in very large exports from this enterprise. It exported almost all its production. During 1970 and 71 the turnover of these curlers fell substantially, and as the enterprise did not have other products at that moment of any importance, it had to make substantial reductions.

The conditions for the other enterprises in the trade have been by far more stable than for the above-mentioned enterprise.

According to product assortment the other enterprises may be divided into:

- producers of articles for the treatment of hair, where the above-mentioned enterprise is completely predominant.
- producers of vacuum cleaners, including a predominant enterprise with a constant number of more than 500 employees.
- producers of electric cookers, including a medium-sized enterprise with about 200 employees through the main part of the period.

All other enterprises within the trade are small in proportion to the above-mentioned enterprises both with respect to absolute size as well as with respect to supply of the Danish market with the product category in question.

Table II-1-b gives a more detailed illustration of the size structure of the enterprises of the trade and its development during the period.

Table II-1-a

Production of Electric Household Appliances. Development in Number of Enterprises, Employment, Turnover and Wage Costs For the Trade

| Variable | unit | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|---|
| Number of enterprises | pieces | 10 | 9 | 10 | 10 | 9 | 9 |
| Number of employees | number of persons | 1,867 | 3,704 | 3,446 | 2,334 | 2,375 | 2,580 |
| Total turnover | million Dkr | 220 | 437 | 391 | 344 | 392 | 505 |
| Total wage costs | million Dkr | 50 | 105 | 105 | 85 | 92 | 119 |
| Index for: | | | | | | | |
| Number of employees | 1968=100 | 100 | 198 | 184 | 125 | 127 | 138 |
| Total turnover | 1968=100 | 100 | 198 | 177 | 156 | 178 | 229 |
| Total wage costs | 1968=100 | 100 | 209 | 209 | 169 | 183 | 237 |

Table II-1-b

Production of Household Appliances. The Size of the Enterprises In the Trade Illustrated by Number of Employees

| | Number of persons employed | | | | | | | Total number of enterprises | Total number of employees for enterprises with | | Total number of employees |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6-9 | 10-19 | 20-49 | 50-99 | 100-199 | 200-499 | 500 or more | | 6-49 employees | 50 or more employees | |
| year | | | Number of enterprises | | | | | | | | |
| 68 | - | 2 | 3 | 1 | 2 | - | 2 | 10 | 174 | 1,670 | 1,844 |
| 69 | - | 1 | 3 | 1 | - | 2 | 2 | 9 | 137 | 3,541 | 3,678 |
| 70 | - | 2 | 2 | 2 | 1 | 1 | 2 | 10 | 105 | 3,325 | 3,430 |
| 71 | - | 2 | 3 | 1 | 1 | 1 | 2 | 10 | 135 | 2,184 | 2,319 |
| 72 | - | 2 | 2 | 1 | 1 | 1 | 2 | 9 | 75 | 2,300 | 2,375 |
| 73 | - | 2 | 2 | 1 | 1 | 1 | 2 | 9 | 75 | 2,565 | 2,580 |

## II-2 Production of Electric Household Appliances

### Development in volume transacted, prices, value added and the structure of costs and earnings in the trade

It appears from table II-2-a that the total turnover of the trade has more than doubled during the period. The development in turnover has been characterized by an irregular growth, however, with relatively large turnover in 1969-70 and in 1973.

By far the largest part of the turnover of the trade, about 75 per cent is sold directly to foreign countries.

It is also characteristic that the turnover of the trade's own goods and services constitutes a large share of the total turnover, viz. between 85 and 95 per cent during the period.

It appears from table II-2-b that the value added by the production is about 50 per cent and by the turnover of commodities about 23 per cent. The total value added is about 45 to 50 per cent of the production value plus the trade turnover.

The share of wage costs of the production value plus the trade turnover is slightly increasing during the period 1968 to 1971 while the remaining amount falls correspondingly.

Table II-2-c gives a survey of the development in turnover, prices and value added of the trade in real terms. It appears that prices have been rising during the period. In 1973 the prices were 43 per cent higher than the prices in 1968. The development has been characterized by a vigorous price increase from 1968 to 69 and a moderate price increase the other years.

The production index shows a doubling of the value added of the trade in real terms from 1968 to 69 and from then a vigorous fall pari passu with the fall in turnover.

The index for volume transacted shows that in 1973 the volume transacted was 57 per cent larger than in 1968, but still smaller, however, than in 1969. The development in volume transacted coupled with price increases has resulted in an increase in total turnover of 124 per cent during the period.

As the fluctuations in turnover fall on articles for the treatment of hair primarily, and as the index for value added has close correlation with the fluctuations in turnover, it is reasonable to assume that the vigorous fluctuations in value added in real terms ( a demonstration of the productivity in the utilization of the factors of production) are due, first and foremost, to the group articles for the treatment of hair.

Table II-2-a

Production of Electric Household Appliances

Development in turnover, turnover of own goods and services and turnover directly to foreign countries.

| | 1968 million Dkr | 1969 million Dkr | 1970 million Dkr | 1971 million Dkr | 1972 million Dkr | 1973 million Dkr |
|---|---|---|---|---|---|---|
| 1. Total turnover | 220 | 419 | 378 | 345 | 393 | 505 |
| 2. Turnover of own goods and services | 194 | 397 | 342 | 301 | 336 | 435 |
| 3. Total turnover directly to foreign countires | 106 | 308 | 264 | 226 | 251 | 338 |
| | % | % | % | % | % | % |
| Turnover of own goods and services in percentage of total turnover (2 in percentage of 1) | 88 | 95 | 90 | 87 | 85 | 86 |
| Turnover directly to foreign countries in percentage of turnover of own goods and services (3 in percentage of 2) | 55 | 78 | 78 | 75 | 75 | 78 |

Table II-2-b

Production of Electric Household Appliances

Development in value added, wage costs and remaining amount. 1968-71.

| | 1968 % | 1969 % | 1970 % | 1971 % |
|---|---|---|---|---|
| Value added by production in percentage of total production value | 53,2 | 50.1 | 47.5 | 48.7 |
| Value added by trade in percentage of trade turnover | 21.0 | 25.3 | 26.9 | 21.8 |
| Total value added in percentage of production value and trade turnover | 49.6 | 48.8 | 45.7 | 45.2 |
| Wage costs in percentage of production value and trade turnover | 22.9 | 23.5 | 26.0 | 26.0 |
| Remaining amount in percentage of production value and trade turnover | 26.7 | 25.3 | 19.7 | 19.2 |

Source: Industristatstik.

Table II-2-c

Production of Electric Household Appliances

Development in indices for turnover, prices, volume transacted and value added in real terms with respect to manufactured goods and raw materials, etc.

| Index for: | | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|---|
| Turnover in Dkr | 1968 = 100 | 100 | 204 | 176 | 155 | 173 | 224 |
| Prices[1)] | 1968 = 100 | 100 | 122 | 128 | 131 | 138 | 143 |
| Volume transacted | 1968 = 100 | 100 | 166 | 137 | 118 | 125 | 157 |
| Value added[2)] | 1968 = 100 | 100 | 202 | 161 | 123 | - | - |

1) Calculated as index for turnover divided by index for volume for the respective years.

2) Calculated by the National Bureau of Statistics as a double deflated index for value added.

## II-3 Development in Production, Domestic Turnover, Imports and Exports For a Number of the Most Important Products of the Trade

The following survey is an exposition of the development within the product areas most important for the Danish producers.

It concerns the following product areas arranged according to falling size of the domestic production:

(1) Articles for the treatment of hair.
(2) Vacuum cleaners and polishers.
(3) Cookers, etc.
(4) Ventilators for domestic use.
(5) Mixers and whipping machines.

Section I gives a more detailed delimitation as to what is included in the individual product areas.

For each individual product area there is a survey of the development in domestic production in prices ex producer, imports C.I.F. and exports F.O.B. and the domestic supply in similar prices.

It also presents a survey of the distribution of imports and exports on countries of origin and recipient countries, respectively, with a share of more than 10 per cent of total imports or total exports.

The main conclusion of these analyses of the individual product groups is that the Danish producers within the trade 'production of electric household appliances' operate on different markets without direct connections as to demand. There is no connection as to production, either, between the individual product groups. Therefore, there is a special development for each individual product group. Of important common features may be emphasized, however, that during the period, all product groups have been characterized by an increased international competition and that all product groups are characterized by the fact that during the whole period the Danish producers have depended either on the development in the competitive conditions on export markets or on the development in the competitive power of the imported products. This situation has been least pronounced within the product area electric cookers, etc.

The following sections give a more detailed exposition of the individual product areas.

II-3-1 Articles For the Treatment of Hair

The domestic production of articles for the treatment of hair is the most important single product group of the trade. It appears that the production has been vigorously fluctuating during the period with an absolute maximum in 1969. By far the largest part of the production has been exported; the imports are modest in proportion to the Danish consumption. During the period the Danish market as a whole has been increasing, but modest compared to the size of the production.

The development in imports distributed on important countries of origin shows that the largest part of the imports comes from West Germany (table II-3-1-b).

The development in exports, table II-3-1-c, shows that during the period as a whole USA has been the most important recipient country. From 1970 and onwards, however, UK has taken a vigorously growing share of the exports. No other recipient country has a share of more than 10 per cent of the exports.

As a whole, articles for the treatment of hair are characterized by the fact that a large Danish enterprise has a product which is sold mainly on the British and American markets.

Table II-3-1-a

Development in Production, Imports, Exports and Supply of Devices For the Treatment of Hair

| | Domestic production | Imports | Exports | Domestic consumption |
|---|---|---|---|---|
| | million Dkr | | | |
| 1968 | 125,0 | 2,4 | 113,0 | 14,4 |
| 69 | 260,0 | 3,4 | 257,5 | 5,9 |
| 70 | 196,1 | 4,3 | 187,2 | 13,2 |
| 71 | 135,0 | 4,6 | 95,6 | 41,0 |
| 72 | 148,9 | 5,4 | 134,1 | 20,2 |
| 73 | 205,0 | 10,9 | 129,7 | 86,2 |

Table II-3-1-b

Devices For the Treatment of Hair - Distribution of Imports On Important Countries of Origin

| | 1968 million Dkr | % | 1969 million Dkr | % | 1970 million Dkr | % | 1971 million Dkr | % | 1972 million Dkr | % | 1973 million Dkr | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | 2,4 | 100 | 3,4 | 100 | 4,3 | 100 | 4,6 | 100 | 5,4 | 100 | 10,9 | 100 |
| From: West Germany | 0,9 | 38 | 1,7 | 50 | 1,7 | 40 | 2,2 | 48 | 2,9 | 54 | 5,0 | 46 |
| UK | 0,7 | 29 | 0,5 | 15 | 0,5 | 12 | 0,4 | 9 | 0,3 | 6 | 0,2 | 2 |
| Switzerland | 0,3 | 12 | 0,5 | 15 | 0,5 | 12 | 0,6 | 13 | 0,4 | 7 | 2,6 | 24 |
| The Netherlands | 0,4 | 17 | 0,6 | 18 | 1,0 | 23 | 1,2 | 26 | 0,9 | 17 | 1,0 | 9 |
| France | | | | | | | | | 0,4 | 7 | 1,7 | 16 |
| Other countries | | 4 | | 2 | | 13 | | 4 | | 9 | | 3 |

Table II-3-1-c

Devices for the Treatment of Hair - Distribution of Exports On Important Recipient Countries

| | 1968 | | 1969 | | 1970 | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total | 113,0 | 100 | 257,5 | 100 | 187,2 | 100 | 95,6 | 100 | 134,1 | 100 | 129,7 | 100 |
| To: USA | 89,0 | 79 | 2o5,7 | 80 | 145,9 | 78 | 65,1 | 68 | 85,6 | 64 | 78,9 | 61 |
| UK | | | | | 8,3 | 4 | 12,4 | 13 | 26,6 | 20 | 44,1 | 34 |
| Other countries | | 21 | | 20 | | 18 | | 19 | | 16 | | 5 |

II-3-2 Vacuum Cleaners and Polishers

The domestic production of vacuum cleaners and polishers has been increasing during the period with a relatively steady growth during the period. The same applies to imports, exports and the domestic supply. The share of imports of the domestic supply has increased during the period from about 25 per cent to about 35 per cent. Likewise, the share of exports of the Danish production has grown from 45 per cent at the beginning of the period to about 55 per cent at the end, (table II-3-2-a).

The distribution of imports on countries of origin has shifted only slightly during the period (table II-3-2-b). UK is the most important supplier followed by Germany, Sweden and the Netherlands. Other countries have only a small importance. The distribution of exports on recipient countries also shows slight shifts between the individual areas during the period (table II-3-2-c). In contrast to imports, the exports are divided among many recipient countries. The four most important markets take only about 40 per cent of the exports.

Table II-3-2-a

Vacuum Cleaners and Polishers etc. - Development in Production, Imports, Exports and Domestic Supply

| | Domestic Production | Imports | Exports | Domestic Consumption |
|---|---|---|---|---|
| | million Dkr | | | |
| 1968 | 61,4 | 12,2 | 27,1 | 46,5 |
| 69 | 66,4 | 13,2 | 23,1 | 56,5 |
| 70 | 78,0 | 17,3 | 30,4 | 64,9 |
| 71 | 86,2 | 18,9 | 36,1 | 69,0 |
| 72 | 87,8 | 19,9 | 46,5 | 61,2 |
| 73 | 95,0 | 28,3 | 48,0 | 75,3 |

Table II-3-2-b

Vacuum Cleaners and Polishers - Development In Distribution of Imports on Important Countries of Origin

| | 1968 | | 1969 | | 1970 | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total | 12,2 | 100 | 13,2 | 100 | 17,3 | 100 | 18,9 | 100 | 19,9 | 100 | 28,3 | 100 |
| From: UK | 6,1 | 50 | 5,5 | 42 | 7,7 | 45 | 9,1 | 48 | 9,0 | 45 | 12,4 | 44 |
| West Germany | 1,9 | 16 | 3,1 | 24 | 3,0 | 17 | 4,1 | 22 | 3,2 | 16 | 5,6 | 20 |
| Sweden | 2,5 | 21 | 2,2 | 17 | 2,5 | 15 | 2,5 | 13 | 1,7 | 9 | 3,9 | 14 |
| The Netherlands | 1,o | 8 | 1,2 | 9 | 1,9 | 11 | 1,8 | 10 | 1,8 | 9 | 2,3 | 8 |
| Other countries | | 5 | | 8 | | 12 | | 7 | | 21 | | 14 |

Table II-3-2-c

Vacuum Cleaners and Polishers - Development In Distribution of Exports On Important Recipient Countries

| | 1968 | | 1969 | | 1970 | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total | 27,1 | 100 | 23,1 | 100 | 30,4 | 100 | 36,1 | 100 | 46,5 | 100 | 48,0 | 100 |
| to: Bel/Lux. | 1,9 | 7 | 2,2 | 10 | 4,0 | 13 | 4,1 | 11 | 7,3 | 16 | 6,8 | 14 |
| The Netherlands | 1.4 | 5 | 1,6 | 7 | 2,3 | 8 | 4,3 | 12 | 4,8 | 10 | 5,2 | 11 |
| Norway | 3,1 | 11 | 3,6 | 16 | 3,8 | 13 | 3,9 | 11 | 3,6 | 8 | 3,2 | 7 |
| Sweden | 4,5 | 17 | 2,8 | 12 | 3,6 | 12 | 2,5 | 7 | 3,1 | 7 | 3,o | 6 |
| Other countries | | 60 | | 55 | | 54 | | 59 | | 59 | | 62 |

## II-3-3 Cookers, etc.

It appears from table II-3-3-a that the domestic production of cookers, etc. has grown steadily during the period, in certain periods, however, not sufficiently to keep up with the domestic demand. Therefore, an increased part of this demand has been covered by an increase in imports. At the end of the period, the Danish production amounted to about 70 per cent of the domestic supply. The Danish exports of cookers are negligible. It appears from table II-3-3-b that the bulk of imports comes from West Germany and Sweden and a smaller part from Austria.

Table II-3-3-a

Cookers etc. - Development In Production, Imports, Exports and Domestic Supply

| | Domestic production | Imports | Exports | Domestic consumption |
|---|---|---|---|---|
| | ——— million Dkr ——— | | | |
| 1968 | 33,7 | 7,7 | 0,2 | 41,2 |
| 69 | 33,2 | 18,0 | 0,1 | 51,1 |
| 70 | 36,6 | 18,9 | 1,2 | 54,3 |
| 71 | 39,0 | 20,6 | 1,2 | 58,4 |
| 72 | 50,3 | 21,8 | 1,1 | 71,0 |
| 73 | 63,0 | 33,6 | 1,4 | 95,2 |

Table II-3-3-b

Cookers etc. - Distribution of Imports On Important Countries of Origin

| | 1968 | | 1969 | | 1970 | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total | 7,7 | 100 | 18,0 | 100 | 18,9 | 100 | 20,6 | 100 | 21,8 | 100 | 33,6 | 100 |
| From: West Germany | 4,3 | 56 | 10,8 | 56 | 11,9 | 63 | 12,2 | 59 | 11,5 | 53 | 15,5 | 46 |
| Sweden | 2,8 | 36 | 4,8 | 27 | 4,3 | 23 | 5,0 | 24 | 7,7 | 35 | 12,7 | 38 |
| Austria | 0,0 | - | 1,2 | 7 | 1,9 | 10 | 2,4 | 12 | 1,8 | 8 | 2,9 | 9 |
| Other countries | | 8 | | 10 | | 4 | | 5 | | 4 | | 7 |

## II-3-4 Ventilators For Domestic Use

Table II-3-4-a shows a vigorous increase in the Danish production of and supply with ventilators for domestic use. Exports are negligible. The share of imports of the Danish market has fallen pari passu with the increase in the Danish production and amounted to about 50 per cent of the Danish supply at the end of the period. The imports from Sweden and West Germany are most important. The vigorous development in the domestic consumption is due to a change in construction of kitchens especially in new building. The Danish production takes place in enterprises which are not included in the trade 'production of electric household appliances' because their main production falls on other products.

Table II-3-4-a

Ventilators - Development In Production, Imports, Exports and Domestic Supply

| | Domestic production | Imports | Exports | Domestic consumption |
|---|---|---|---|---|
| | million Dkr | | | |
| 1968 | 0,2 | 6,0 | 0,17 | 6,03 |
| 69 | 7,7 | 8,2 | 0,37 | 15,53 |
| 70 | 12,3 | 10,1 | 0,85 | 21,55 |
| 71 | 12,3 | 8,6 | 0,91 | 19,99 |
| 72 | 19,0 | 15,0 | 1,08 | 32,92 |
| 73 | 13,0 | 25,7 | 3,44 | 35,3 |

Table II-3-4-b

Ventialtors etc. - Imports Distributed On the Most Important Countries of Origin

| | 1968 | | 1969 | | 1970 | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total | 6,0 | 100 | 8,2 | 100 | 10,1 | 100 | 8,6 | 100 | 15,o | 100 | 25,7 | 100 |
| From Sweden | 3,9 | 65 | 5,7 | 70 | 6,8 | 67 | 5,7 | 66 | 9,1 | 61 | 17,3 | 67 |
| West Germany | 0,6 | 10 | 0,9 | 11 | 1,4 | 14 | 1,4 | 16 | 3,7 | 25 | 5,5 | 21 |
| Other countries | | 25 | | 19 | | 19 | | 18 | | 14 | | 12 |

## II-3-5 Mixers and Whipping Machines

It appears from table II-3-5-a that the Danish production has been stable during the period, while the growing domestic consumption has been covered by increased imports, which have come mainly from Germany, UK, the Netherlands and Switzerland with West Germany as the absolutely most important supplier (table II-3-5-b).

Table II-3-5-a

Mixers and Whipping Machines etc. - Production, Imports, Exports and Supply

| | Domestic production | Imports | Exports | Domestic Consumption |
|---|---|---|---|---|
| | million Dkr | | | |
| 1968 | 7,3 | 7,5 | 8,1 | 6,7 |
| 69 | 4,5 | 9,5 | 3,6 | 10,4 |
| 70 | 6,9 | 11,7 | 1,7 | 16,9 |
| 71 | 6,2 | 11,0 | 11,0 | 6,2 |
| 72 | 6,9 | 12,5 | 1,7 | 17,7 |
| 73 | 5,8 | 17,1 | 1,5 | 21,4 |

Table II-3-5-b

Mixers and Whipping Machines etc. - Development In Imports Distributed On Important Countries of Origin

| | 1968 | | 1969 | | 1970 | | 1971 | | 1972 | | 1973 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % | million Dkr | % |
| Total | 7,5 | 100 | 9,5 | 100 | 11,7 | 100 | 11,0 | 100 | 12,5 | 100 | 17,1 | 100 |
| From: West Germany | 3,9 | 52 | 5,1 | 54 | 4,6 | 40 | 6,6 | 60 | 6,2 | 50 | 8,9 | 52 |
| UK | 1,6 | 21 | 2,0 | 21 | 3,5 | 30 | 2,4 | 22 | 3,6 | 29 | 3,7 | 22 |
| The Netherlands | 1,1 | 15 | 0,9 | 10 | 1,6 | 14 | 1,3 | 12 | 1,2 | 10 | 1,5 | 9 |
| Switzerland | 0,5 | 7 | 0,5 | 5 | 1,0 | 9 | 0,3 | 3 | 1,0 | 8 | 1,7 | 10 |
| Other countries | | 5 | | 10 | | 7 | | 3 | | 3 | | 7 |

## II-4 Distribution of Imports and Exports On Main Areas

With a view to the illustration of the distribution of exports and imports on the main areas EFTA countries, EEC countries and other countries (EEC and EFTA comprising the countries associated in the respective years) the products pertaining to the trade have been divided into two main groups:

(1) Electromechanical household appliances, i.e. appliances with built-in electromotors. This group comprises BTN product group no. 85.06.

(2) Electrothermal household appliances, i.e. appliances exploiting an electrothermal effect. This group comprises BTN product group no. 85.12.

The distinction has been made because the distribution of exports and imports differs substantially for the two product groups.

II-4-1 Electromechanical Household Appliances

The geographical distribution of exports and imports appears absolutely as well as relatively from tables II-4-1-a and b, respectively.

The period does not demonstrate any development trends in the distribution of exports on the areas. During the period the EFTA area has taken a little less than 50 per cent of the exports, the EEC about one third and other countries the rest. The imports which have grown steadily during the period do not show any special development trends, either. About 55 per cent of the imports come from the EFTA area, about 40 per cent from the EEC area and the rest from other countries.

Table II-4-1-a

Product Group: Electromechanical Household Appliances with Electric Motors BTN 85.06.
Distribution of Exports On Areas. Million Dkr.

| year | Total exports | EFTA countries | EEC countries | Other countries |
|---|---|---|---|---|
| | million Dkr | | | |
| 1968 | 37 | 15 | 9 | 13 |
| 1969 | 27 | 13 | 8 | 6 |
| 1970 | 33 | 17 | 11 | 5 |
| 1971 | 49 | 19 | 14 | 17 |
| 1972 | 53 | 22 | 19 | 11 |
| 1973 | 72 | | | |
| | distribution in per cent | | | |
| 1968 | 100 | 41 | 24 | 35 |
| 1969 | 100 | 48 | 30 | 22 |
| 1970 | 100 | 52 | 33 | 15 |
| 1971 | 100 | 38 | 28 | 34 |
| 1972 | 100 | 42 | 37 | 21 |
| 1973 | | | | |

Table II-4-1-b

Product Group: Electromechanical Household Appliances With Electric Motors
BTN 85.06. Distribution of Imports On Countries of Origin. Million Dkr.

| year | Customs tariff x) | Total imports | EFTA countries | EEC countries | Other countries |
|---|---|---|---|---|---|
| | | million Dkr | | | |
| 1968 | 15,0 per cent | 28 | 16 | 11 | 1 |
| 1969 | 13,8 - | 33 | 18 | 14 | 1 |
| 1970 | 13,2 - | 41 | 24 | 15 | 2 |
| 1971 | 12,6 | 40 | 22 | 17 | 1 |
| 1972 | 12,0 - | 49 | 29 | 19 | 1 |
| 1973 | | 74 | | | |
| | | distribution in per cent | | | |
| 1968 | | 100 | 57 | 39 | 4 |
| 1969 | | 100 | 54 | 42 | 3 |
| 1970 | | 100 | 59 | 37 | 5 |
| 1971 | | 100 | 55 | 42 | 3 |
| 1972 | | 100 | 59 | 39 | 2 |
| 1973 | | 100 | | | |

x) in per cent of C.I.F. value

## II-4-2 Electrothermal Household Appliances

The geographical distribution of exports and imports appears absolutely as well as relatively from tables II-4-2-a and b.

The development in exports is dominated by the development in electric articles for the treatment of hair. The main part of the vigorously fluctuating exports has gone to other countries. EFTA countries, however, have taken a substantially growing share during the period.

The imports which are dominated by electric cookers do not show any special shifts between the areas. During the period, the EEC area and the EFTA area each supplied a little less than 50 per cent of the Danish imports.

Table II-4-2-a

Product Group: Electrothermal Household Appliances, Including Especially Devices For the Treatment of Hair, BTN 85.12. Distribution of Exports on Countries and Areas

| year | Total exports | EFTA countries | EEC countries | Other countries |
|---|---|---|---|---|
| | million Dkr | | | |
| 1968 | 120 | 21 | 5 | 93 |
| 1969 | 264 | 35 | 12 | 216 |
| 1970 | 196 | 28 | 9 | 159 |
| 1971 | 106 | 25 | 9 | 72 |
| 1972 | 145 | 40 | 10 | 95 |
| 1973 | 140 | | | |
| | distribution in per cent | | | |
| 1968 | 100 | 18 | 4 | 78 |
| 1969 | 100 | 13 | 5 | 82 |
| 1970 | 100 | 14 | 5 | 81 |
| 1971 | 100 | 24 | 8 | 68 |
| 1972 | 100 | 28 | 7 | 66 |
| 1973 | 100 | | | |

Table II-4-2-b

Product Group: Electrothermal Household Appliances, Including Especially Devices For the Treatment of Hair, BTN 85.12. Distribution of Imports on Countries of Origin

| year | Customs tariff | Total imports | FFTA countries | EEC countries | Other countries |
|---|---|---|---|---|---|
| | | million Dkr | | | |
| 1968 | 15,0 per cent | 39 | 21 | 16 | 2 |
| 1969 | 13,8 - | 63 | 30 | 31 | 2 |
| 1970 | 13,2 - | 77 | 35 | 40 | 3 |
| 1971 | 12,6 - | 89 | 42 | 45 | 2 |
| 1972 | 12,0 - | 119 | 62 | 55 | 3 |
| 1973 | | | | | |
| | | distribution in per cent | | | |
| 1968 | | 100 | 54 | 41 | 5 |
| 1969 | | 100 | 48 | 49 | 3 |
| 1970 | | 100 | 45 | 52 | 4 |
| 1971 | | 100 | 47 | 51 | 2 |
| 1972 | | 100 | 52 | 46 | 2 |
| 1973 | | 100 | | | |

# III Analyses of Product Markets

## III-1 The Danish Market for Vacuum Cleaners (85.06.100)

This product market has a pronounced oligo-political structure, where the 5 largest suppliers account for by far the prevailing part of the turnover. These 5 suppliers are:

| Name | Nationality | Market share in 1973 |
|---|---|---|
| A/S Fisker og Nielsen | Denmark | 47 per cent |
| A/S Hoover | Gr. Britain | 28 - |
| A/S AEG | West Germany | 9 - |
| A/S Electrolux | Sweden | 5 - |
| A/S Philips | The Netherlands | 5 - |

During the last couple of years, some Japanese vacuum cleaners have been offered for sale. During the period 1968-73 the market share of Fisker og Nielsen has fallen from about 68 per cent to the 47 per cent mentioned.

Table III-1, overleaf, shows the total turnover in Denmark in the individual years of the period. Furthermore, it gives an index for the development in prices, from which it appears that the average prices have been almost constant during the period in question. Finally, $L_4$ and $CR_4$ are given. The relatively high values for these two types of index reflect partly the predominant position of the Danish supplier and partly the high degree of concentration.

The competition between the enterprises is more a question of introduction of new models and policies of the dealers than of price changes.

Table III-1

Development In the Danish Market For Vacuum Cleaners 1968-73

| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| Total turnover Million Dkr | 31 | 34 | 37 | 35 | 39 | 43 |
| Index for price development | 100 | 110 | 99 | 104 | 103 | 103 |
| $CR_4$ | 94 | 94 | 95 | 94 | 93 | 88 |
| $L_4$ | 2,059 | 1.636 | 1.666 | 1.302 | 1.617 | 1.247 |

III-2 The Danish Market For Articles For the Treatment of Hair

There are 6 suppliers in this market:

| | Market share 1973 |
|---|---|
| Carmen Clairol | 95 per cent |
| Bøtker Hansen | |
| AEG | |
| Braun Electric | |
| Philips | |
| Remington | |

but the market is completely dominated by Carmen Clairol who had a market share of more than 90 per cent in 1973 and has had so during the whole period. Thus, the enterprise has an actual monopoly.

The total turnover in the market is shown in table III-2 from which it also appears how small the share of imports is. It looks as if imports will increase a great deal more in 1974 than in the previous years, however.

It appears from the table, furthermore, that sales have increased vigorously during the last 3 years. This increase is due to a pronounced change in consumer habits. People have become more interested in dressing their hair themselves, and this coupled with a new supply of hair driers, blow-wave combs and curlers has brought about the large increase in turnover.

Table III-2

Development In the Danish Market For Electric Devices For the Treatment of Hair
1968-73

| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| Total turnover million Dkr | 13 | 6 | 10 | 53 | 60 | 82 |
| Imports of this million Dkr | 1 | 1 | 1 | 1 | 1 | 3 |

## III-3 The Danish Market For Electric Cookers

At the moment there are the following suppliers:

| Name | Nationality | Market share 1973 |
|---|---|---|
| Ernst Voss A/S | Denmark | 51 per cent |
| Jennie Komfurer | - | • |
| Scan-Atlas | Denmark/Sweden | 11 per cent |
| Husquarna | Sweden | 14 per cent |
| Kockums | - | |
| Robert Bosch | West Germany | • |
| AEG | - | 18 per cent |
| BBC | - | |

Of these suppliers, Jennie Komfurer and Robert Bosch did not enter the market until 1974. BBC's cookers are manufactured by AEG and Kockums' cookers are now manufactured by Husquarna. There are, in other words, only 4 large suppliers in the market, of which Ernst Voss is completely predominant. It must be noted, furthermore, that Scan-Atlas did not really enter the market until 1974 by buying up the Danish factory SAG. During the period a Danish producer has discontinued his production.

The development in the market is given in table III-3. It appears that the total turnover has grown considerably during recent years. This is due to a vigorous increase in new building plus closing down of gas works. It must be noted, however, that the price index shows considerable increases.

The values for the two indices show partly the high degree of concentration in the market and partly the dominance of the large supplier. The fall in the $L_4$ value in 1973 is due, among other things, to the amalgamation of the production of electric cookers of the two Swedish enterprises and to the fact that their market share has grown substantially at the same time.

Table III-3

Development In the Danish Market For Electric Cookers 1968-73

| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|
| Total turnover million Dkr | 42 | 51 | 55 | 59 | 71 | 90 |
| Imports of this million Dkr | 8 | 18 | 19 | 21 | 22 | 34 |
| Price index | 100 | 91 | 104 | 114 | 119 | 132 |
| $CR_4$ | 88 | 86 | 89 | 92 | 92 | 94 |
| $L_4$ | 1.494 | 0.831 | 0.935 | 0.983 | 1.163 | 0.723 |

## IV A Qualitative Description of the Trade for Electric Household Appliances

The total number of Danish producers within the trade is modest, cf. section II. As it appeared from section III, each of the three largest producers dominate the three largest product markets. Therefore, these three Danish producers will be described in detail in this section.

Apart from the Danish producers, some German and Swedish combines play an important part, when we are to evaluate the development in both competitive conditions as well as structure within this trade. Therefore, the largest foreign combines and their behaviour will be described in detail as well.

### The Danish Producers

1. Carmen Clairol A/S - Kalundborg

This enterprise manufactures blow-wave combs, hair driers and curlers, and it has an actual monopoly on the Danish market.

The enterprise was founded 11 years ago by a single person and expanded violently until 1970, when it had about 3,000 employees and a turnover of almost 300 million Dkr. In 1971 the enterprise experienced a violent recession and at one time the number of employees was as low as about 800. Since then the enterprise has expanded again, and recently it had about 1700 employees. In september 1974 it had to dismiss 435 persons, however.

In 1969 the founder of the enterprise sold it to the American Clairol group, which is again a subsidiary company of the large combine Bristol-Meyers. Thus, the enterprise is to-day on American hands. The share capital amounts to 16,6 million Dkr which is not freely negotiable.

2. A/S Fisker og Nielsen - Copenhagen

Fisker og Nielsen is Denmark's largest and, in reality, only producer of vacuum cleaners. As it also appears from the product market analyses, the enterprise has a predominant position on the Danish market and, furthermore, equally large exports. Earlier the enterprise manufactured also motor cycles, but now it concentrates entirely on the assortment of vacuum cleaners. In 1973 the total turnover amounted to about 110 million Dkr, and the enterprise employed some 600 persons. During the period in question the development has been very stable.

The share capital of 16 million Dkr is owned mainly by the families of the founder.

3. A/S Ernst Voss - Fredericia

This enterprise is the largest producer of electric cookers in Denmark, and almost all its production falls on this product group. The enterprise does not export.

In 1969, Voss bought up the branch for electric cookers of a large Danish machine works (LK-NES) and since then, it has had a very stable development both as to turnover as well as to number of employees which is about 225 at the moment.

The enterprise is a subsidiary of the holding company A/S Glud og Marstrand. This company is owned by consul Meyer, Monaco, who also controls a number of enterprises within the textile trade.

## The Largest Foreign Combines

### 1. Electrolux

This combine is Swedish with headquarters in Stockholm. In 1972 it had a total turnover of 2,490 million Skr and 35,624 employees.

In Denmark Electrolux is represented by a sales company for vacuum cleaners and by A/S Scan-Atlas, a subsidiary which had a turnover of 235 million Dkr and 876 employees in 1973.

Earlier, Electrolux wan only represented on the Danish market for vacuum cleaners, but in 1974 the combine has begun to enlarge its assortment within the field of electric household appliances and refrigerators, etc. via Scan-Atlas. Scan-Atlas produces especially refrigerators and deep freezers, but in the spring of 1974 it bought SAG, a factory producing electric cookers, which had a market share of about 11 per cent, and Dansk Apparatfabrik, which was one of the largest Danish producers of mixers and whipping machines.

Further changes in the competitive structure on the market are to be expected, as Electrolux wishes to further enlarge its assortment to a range similar to that of AEG, for instance.

### 2. Husquarna

This combine is also one of the largest in Sweden with a turnover in 1972 of 633 million Skr and with 5,226 employees. In Denmark it offers especially electric sewing machines and electric cookers for sale.

In 1973 it took over the production of electric cookers of another Swedish combine - Kockums - thus achieving a substantial market share in Denmark.

### 3. AEG

Through its Danish subsidiary, which is a pure sales and service company, AEG-Telefunken in West Germany offers a wide range of electric household appliances and refrigerators, etc. for sale. Thus, it is represented on all three product markets described. The enterprise has had a growing market share during the whole period.

It appears from the above that the trade has seen some changes in the form of buyings and enlargements of assortment. The trend has been that the large foreign combines (apart from those mentioned above also Bosch-Siemens) have enlarged their assortments by entering adjacent product markets, while the large Danish suppliers have limited themselves to one of the large product markets.

## V A Quantitative Illustration of the Development In Concentration 1968-1973

Section II - 1 gives a brief survey over the development in the number of enterprises in the trade. This section will elaborate this survey through a more detailed exposition of the development in the concentration. This exposition will assume the character of an analysis of the development in various concentration indices, each of which emphasize different aspects of the development.
In the general introduction to the appendices, there is a detailed explanation of the various indices together with the basic tables over the different indices. It appears from appendix B, table 1 that the indices intended for the illustration of the development in concentration have been calculated on the basis of a random sampling embracing approx. 99.5 per cent of the trade as to turnover, number of employees or wage bill.

### V - 1 The Development in the average size of enterprises.

The main data for the illustration of the development in the average size of enterprises are found in appendix B, table no. 2 and are reproduced in the following survey.

| | Number of enterprises | Turnover per enterprise<br>million D.kr. | Number of employees per enterprise<br>persons | Total wage bill per enterprise<br>million D.kr. |
|---|---|---|---|---|
| 1968 | lo | 22,o | 187 | 5,1 |
| 1969 | 9 | 48,6 | 412 | 11,7 |
| 197o | lo | 39,1 | 345 | lo,6 |
| 1971 | lo | 34,4 | 233 | 8,6 |
| 1972 | 9 | 43,6 | 264 | lo,3 |
| 1973 | 9 | 56,1 | 287 | 13,3 |

In 1968 the average enterprise had 197 employees and 287 employees in 1973, the average size in 1969 being 412 employees. The development as to nominal turnover and wage bill shows a somewhat larger increase in the average size of enterprises.

### V - 2 The development in the relative concentration measurements

For all three variables a comparison of the development in the two relative concentration measurements, the coefficient of variation and the Gini coefficient, shows a vigorous increase in the relative concentration during the period 1968-1973.

The main data are found in appendix B, table No. 2.

The development for the trade has been characterized by the development in the largest enterprise of the trade, and the vigorous growth from 1968 to 1969 and the following diminution of that enterprise causes a maximum concentration in 1969/7o.

The development in the contration has been fairly uniform for all three variables, and the level of concentration is uniform for the three variables.

The absolute level of concentration, varying between 0 and 3 for the coefficient of variation and between 0 and 0.9 for the Gini coefficient, is medium or high for both methods of measurement with an absolute maximum in 1971 and with fairly the same concentration for each of the three variables.

Figure V-2-a Development in the variation coefficient

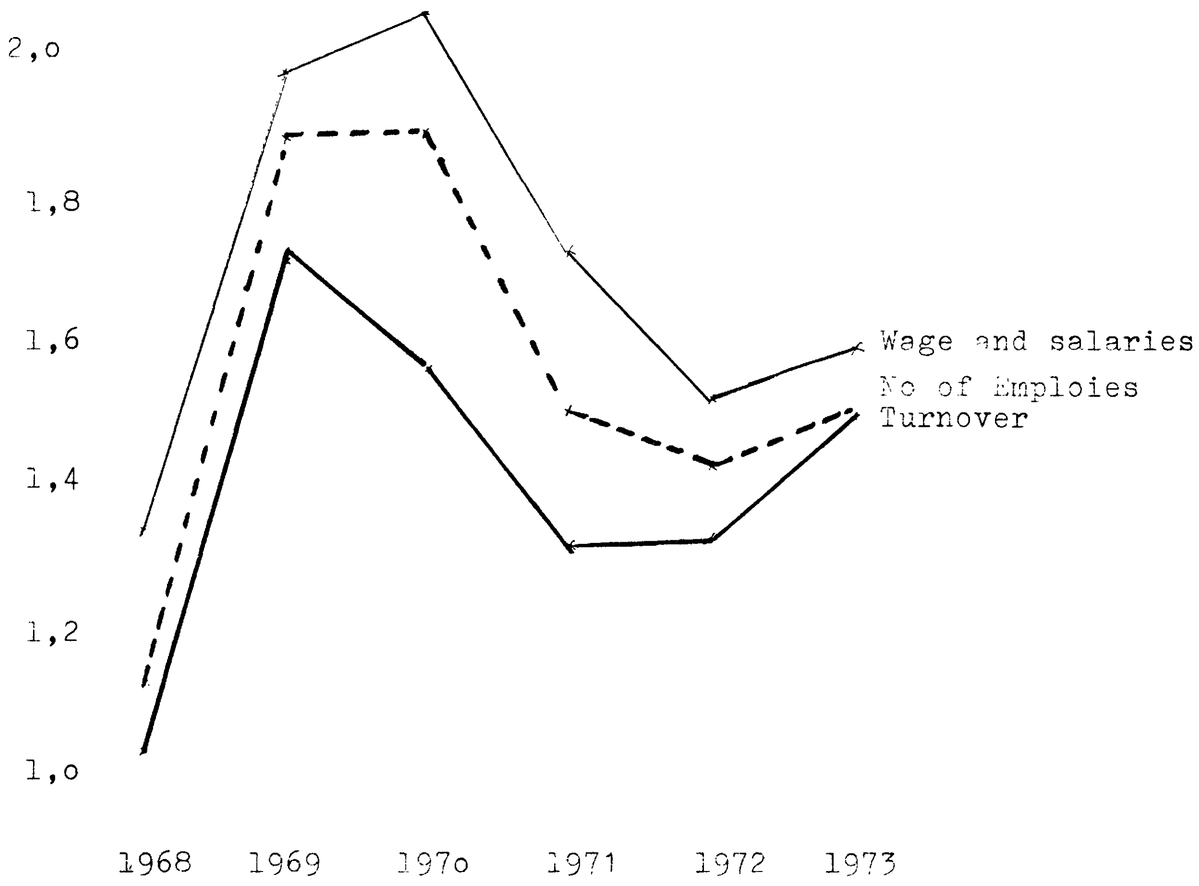
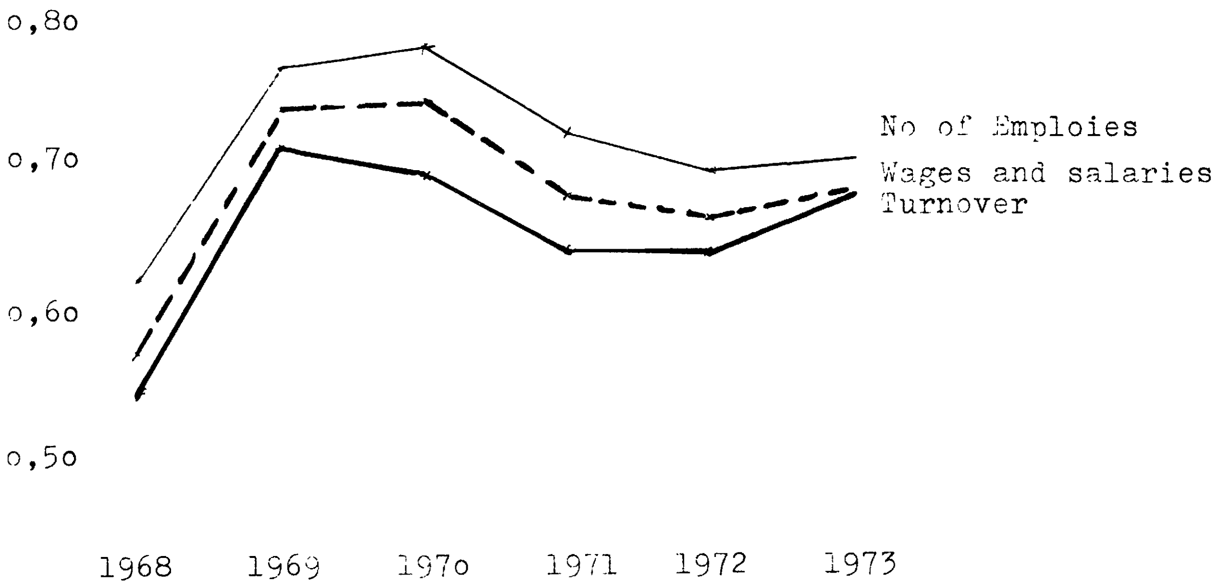


Figure V-2-b Development in the Ginicoefficient



## V-3 The development in the absolute concentration measurements.

The two methods of measurementsfor the absolute concentration, the Herfindahl-Hirschmann index[x)] and the Entropi index[xx)] show a different development in the absolute concentration.

The main data for the illustration of the development in the two indices are found in appendix B, table No. 2 and in figures V-3-a and b, respectively.

The development in the H-index attaching special importance to the larger enterprises, shows a vigorously increasing concentration, while the E-index points towards a smaller concentration among the small enterprises of the trade.

The development is parallel for all three variables.

As a whole, the level of concentration for both absolute concentration measurements is relatively moderate and fairly the same for the three variables over the period.

---

x) The upper and lower limits for the Herfindahl-Hirschmann index are looo and loo, respectively, with a population of lo enterprises.

xx) With a population of lo enterprises the upper and lower limits for the Entropi index are loo and O, respectively.

Figure V-3-a Development in the Herfindahl Hirschmann index

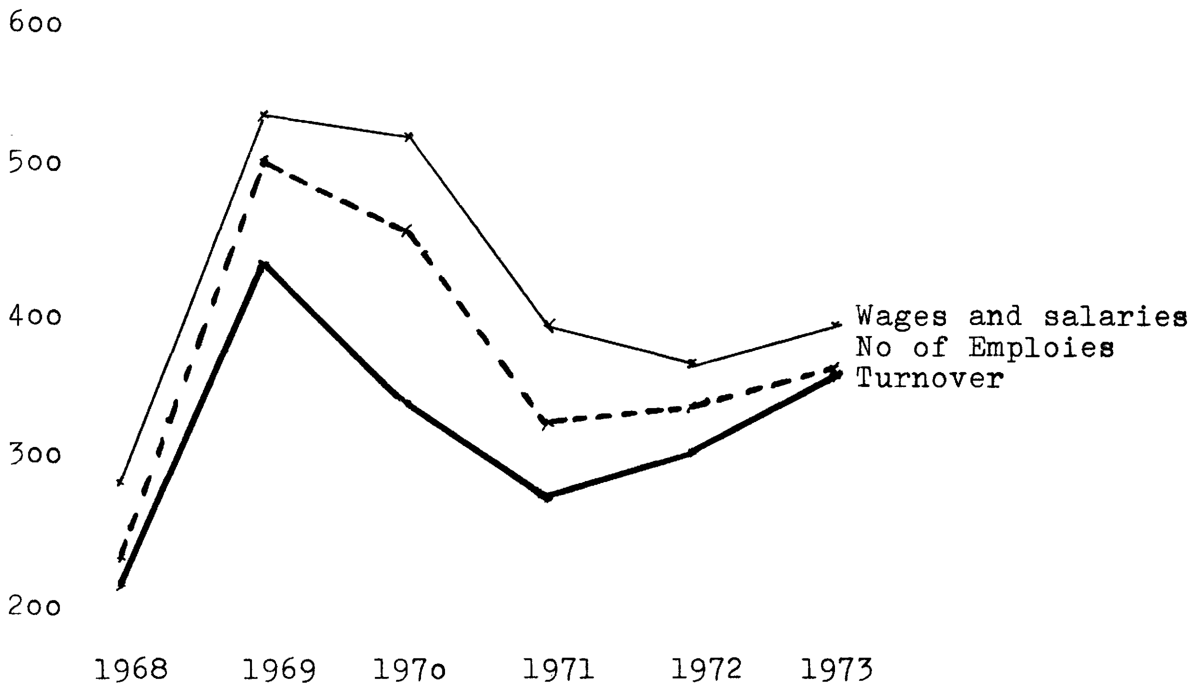
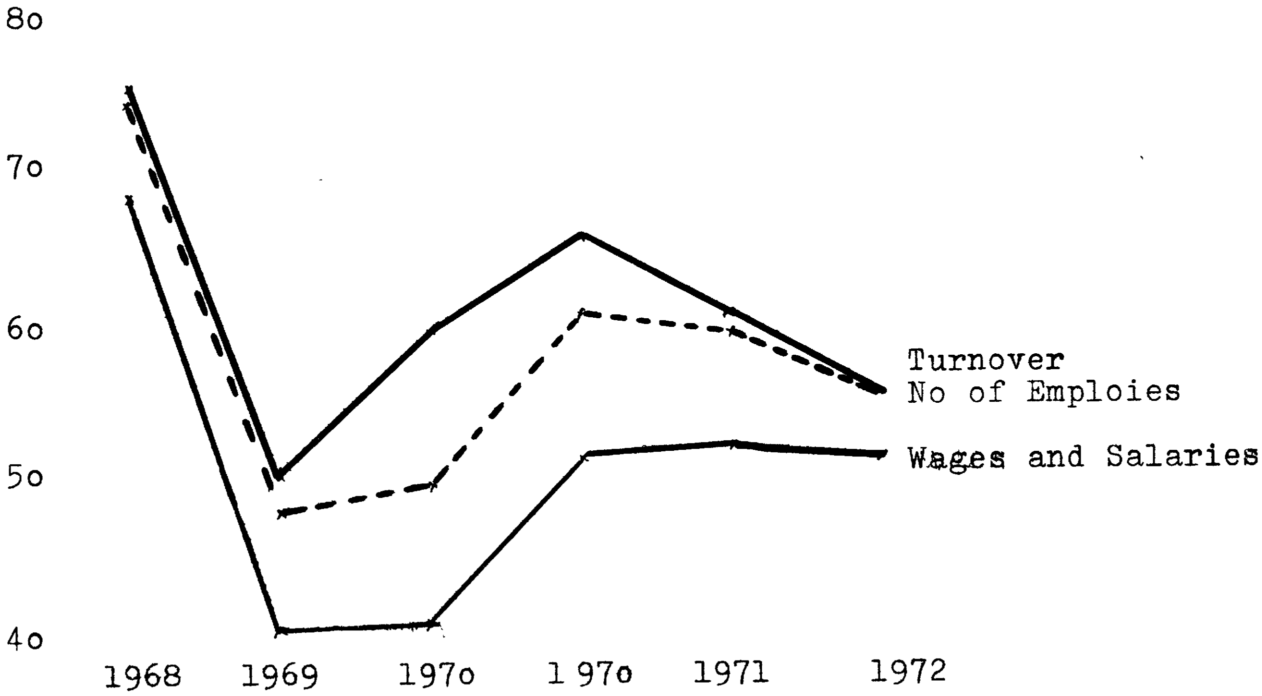


Figure V-3-b : Development in the Entropie index



V - 4 The development in the concentration index and the Linda index.

The development in these indices appears from appendix E, tables no. 3 and 4, and figures V-4-a,b and c give a survey of the development in $CR_4$ and the maximum and minimum values of the Linda index.

The development in the concentration index $CR_4$ shows for all three variables an increasing concentration from about 85 per cent in 1968 to about 95 per cent in 1973. Thus, the four largest enterprises are absolutely predominant and their relative share has grown during the period.

The development in the maximum and minimum values of the Linda index shows that the development for the three variables has been fairly uniform, being at almost the same level for the three variables.

For all years the maximum values are found at $L_2$ or $L_3$. This means that the largest relative difference between the enterprises are found among the two or three largest enterprises. The vigorous growth of the largest enterprise during the period 1968 to 1969 implies a vigorous increase in the maximum values and a following fall contemporaneous with the relative diminuation of the largest enterprise. For the period, the average of the maximum values of the Linda index is 1.4 to 1.5 which indicates a large difference between the two or three largest enterprises. This difference has been slightly increasing over the period.

The minimum values of the Linda index are found from $L_2$ to $L_6$ dependent on variable and year. In many cases the minimum values are identical to the maximum values. This circumstance points towards a structure of relatively dissimilar enterprises. The development for the period, like that of the maximum values, is characterized by vigorous fluctuations in the largest enterprises.

For the period, the average minimum values of the Linda index are 1.o to 1.2, which indicates a large relative difference between the largest enterprises. This difference has grown over the period.

Figur V -4-a

Development in the Concentration index $CR_4$

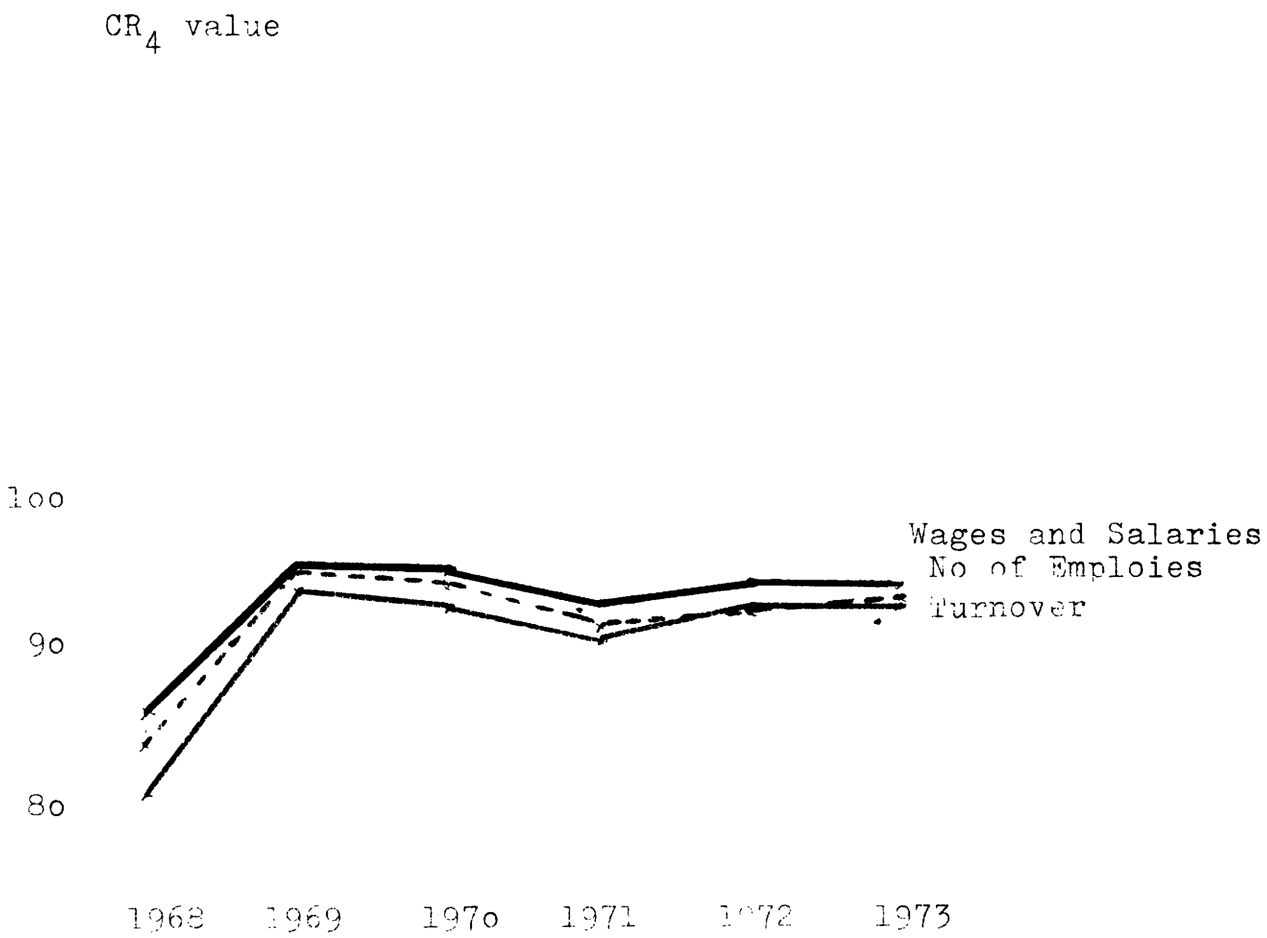


Figure V-4-b

Development of the Linda index :

Maximum values

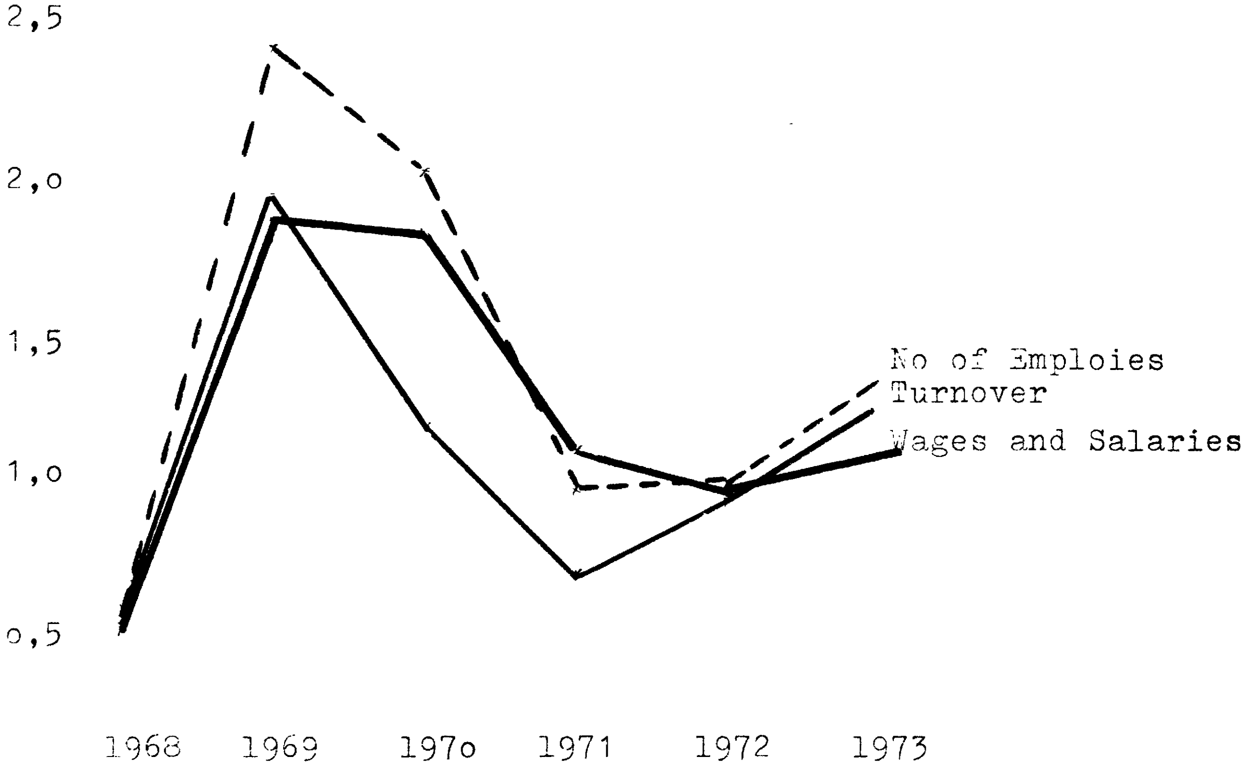
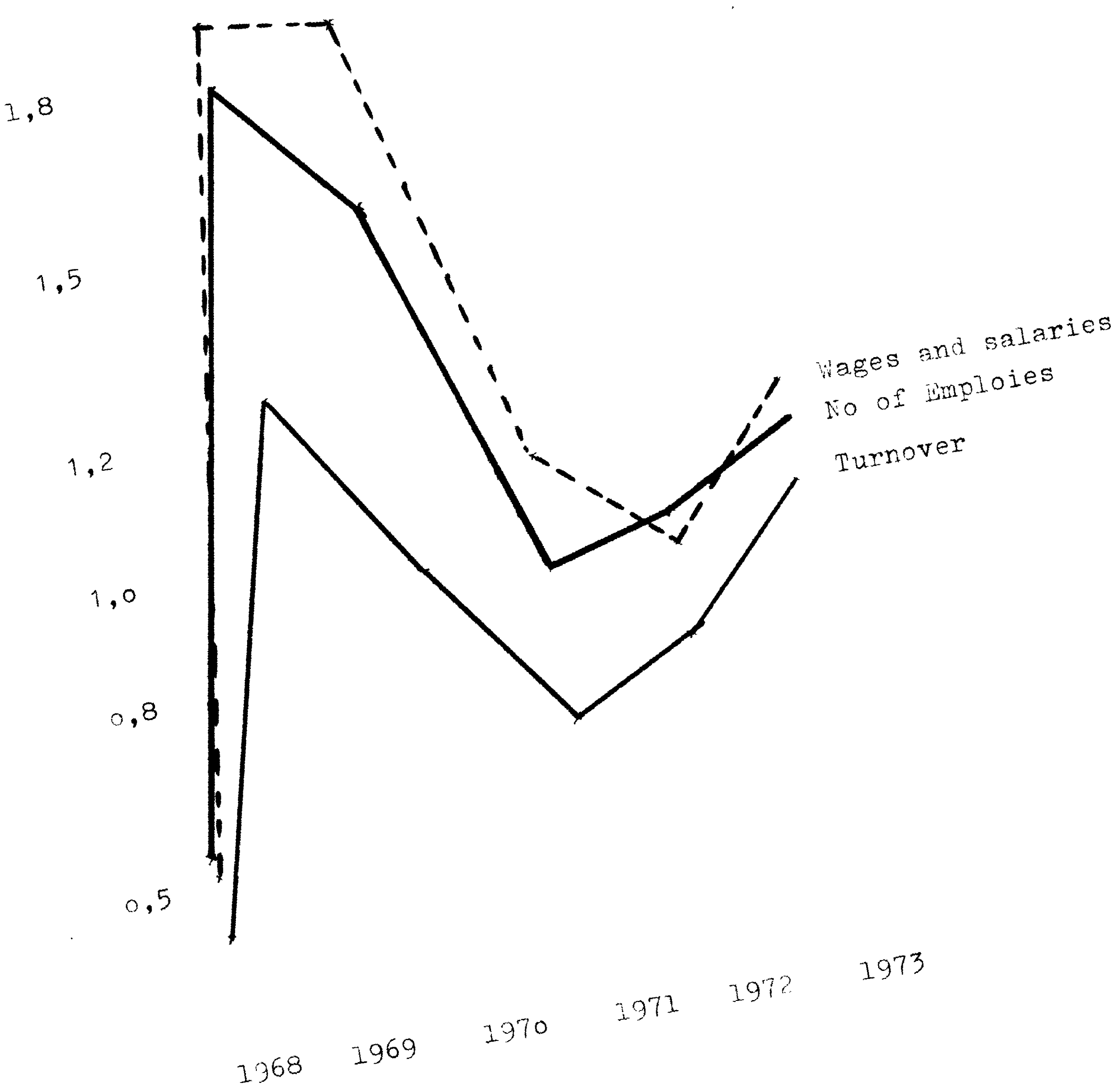


Figure V-4-c

Development of the Linda indeks : minimum values



# GENERAL INTRODUCTION TO APPENDICES A AND B

# TABLE OF SYMBOLS

$n$ = total number of units (firms or units of economic activity) making up the industry.

$n^*$ = number of units selected:

- for each hypothesis: 2, 3, 4, 8, 10, 12, 15, 20 etc.
- or constituting the <u>sample</u> analysed.

M = average value of the variable.

V = variation coefficient.

G = GINI coefficient.

H = Herfindahl-Hirschman index.

E = entropy index.

CR = share of the first $n^*$ units (either 4, 8, 10, 12, 15, 20 etc. or of the sample $n^*$ selected) in the total of the variable.

L = Linda index: The value of this index is calculated according to the $n^*$ hypothesis used (either $n^* = 2, 3, 4, 8, 10, 12$ etc. or: $n^*$, $n^*_h$, $n^*_m$).

$n^*_h$ = number of units corresponding to the <u>maximum</u> value of the L index within the sample analysed.

$n^*_m$ = number of units corresponding to the <u>minimum</u> value of the L index within the sample analysed.

$L_s$ = arithmetic mean of the L indexes on the basis of the hypothesis <u>$n^* = 2$</u> to <u>$n^*_m$</u>, the formula thus being:

$$L_s = \frac{\sum_{n^*=2}^{n^*_m} L_{n^*}}{n^*_m - 1}$$

Preliminary remarks

I. The tables are based on the methodology developed by the Commission of the European Communities for quantitative studies on concentration trends by industry (see First Report on Competition Policy, Part III, pages 157-167- April 1972; Second Report on Competition Policy, Part III - pages 147-161, April 1973).

II. The basic data have been assembled on the responsibility of the institutes which were asked to collect them, as indicated in the heading of each table.

III. Given the documentation available, the contents of each table conform by and large to the plan indicated in the explanatory notes below.

Explanatory notes to the tables

1. Table I shows the trend in the total figures for the following variables:

sales
employment
wage and salary bill

The table concerns both the total number of units (firms or units of economic activity) making up the industry(n) and a sample (n*).

Here the sample comprises the largest firms in the industry. Their number varies according to the degree of oligopoly in the industry and also according to the individual statistical sources available.

As regards the first three variables (sales, employment, wage and salary bill) the trend in the figures relates both to the industry total and to the sample.

2. Table 2 shows the trend of concentration for three variables - sales, employment and wage and salary bill.

The measures and indexes used in this table are obtained from the following formulae:

| | Limits | |
|---|---|---|
| | Lower | Upper |
| M = arithmetic mean<br>$$M = \frac{x}{n}$$ | $>0$ | $x$ |
| V = variation coefficient<br>$$V = \frac{\sqrt{\frac{\sum_{i=1}^{n} (x_i - M)^2}{n}}}{M}$$ | 0 | $\sqrt{(n-1)}$ |
| G = Gini coefficient<br>$$G = \frac{1}{n \cdot x} \sum_{i=1}^{n} \left[ (i-1).\, Fx_i - i.Fx_{i-1} \right]$$ | 0 | $\frac{n-1}{n}$ |
| H = Herfindahl-Hirschman index<br>$$H = 1000 \; \frac{V^2 + 1}{n} = \frac{1000}{x^2} \sum_{i=1}^{n} x_i^2$$ | $\frac{1000}{n}$ | 1000 |
| E = entropy index<br>$$E = 100 \sum_{i=1}^{n} \frac{x_i}{x} \log \frac{x_i}{x}$$ | 100(-logn) | 0 |

The definitions of the formulae are given for simple statistical series. It is assumed, therefore, that the value of the variable is known for each unit of the set.

$n$ = number of units in a set [1]

$x$ = total value of the variable in a set

$i$ = unit i

$x_i$ = value of the variable for unit i

$Fx_i$ = accumulated value of the variable up to unit i

3. Table 3 is intended to show the <u>trend</u> in the level of concentration of <u>large firms.</u> It comprises three sheets, one for each of the variables used, in the following order:

sales
employment
wage and salary bill

Each variable is intended to highlight a <u>given aspect</u> of the structure of the sample comprising the large firms and enables significant comparisons to be made between the trends in different variables.

Here the trend in the level of large firm's concentration is measured by Linda indexes and concentration ratios.

The Linda index is calculated for each variable, while the concentration ratios relate to the first three variables (sales, employment, wage and salary bill).

In Table 3 the L index is not calculated in respect of the entire industry $(\underline{n})$ but only for the sample $(\underline{n^*})$ and for the various hypotheses 4, 8, 10, 12, 15, 20 etc. within the sample.

The table also gives the <u>maximum</u> value $(Ln^*_h)$ and the <u>minimum</u> value $(Ln^*_m)$ of the various L indexes, calculated in the interval between $n^* = 2$ and $n^*$ = entire sample.

The Linda index is defined as follows:

$$L = \frac{\sum_{i=1}^{n^*-1} \frac{EO_i}{n^*}}{n^* - 1}$$

(1) It should be remembered that small and family businesses have sometimes had to be disregarded.

where:

$$EO_i = \frac{\frac{A_i}{i}}{\frac{A_{n*} - A_i}{n* - i}} = \frac{n* - i}{i} \quad \frac{A_i}{A_{n*} - A_i} = \frac{n* - i}{i} \quad \frac{A_i}{1 - A_i}$$

$A_i$ = cumulative share of the first i undertakings in the set selected

$A_{n*}$ = 100% = 1

That is to say:

(a) The L or $L_{n*}$ index is the arithmetic mean of the (n* - 1) ratios of oligopoly equilibrium (EO), each being divided previously by n*.

(b) Each EO ratio is expressed by the average size of the first i firms and that of the remaining (n* - i) firms, where i, in turn, has the values 1 (expressing the ratio between the size of the largest firm and the average size of all the other firms in the sample of the industry selected) to n* - 1 ; this is why the number of EO ratios in question is exactly n* - 1.

The upper and lower limits of the L index are $\infty$ and $\frac{1}{n*}$ respectively.

The formula for the concentration ratios is the following:

$$CR_n* = \frac{100}{x} \sum_{i=1}^{n*} x_i$$

where:

n* = number of units selected:
for each hypothesis: 2, 3, 4, 8, 10, 12, 15, 20 etc.
or constituting the sample analysed.

The upper and lower limits of $CR_{n*}$ are 100 and > 0 respectively.

Table 3 bis is intended to provide an analytical description of the structure of the large firms for each year under consideration.

This enables significant comparisons to be made between the indexes calculated on the basis of the different variables. As they relate to the same period and are based on the same hypotheses of n*, these indexes are homogeneous.

It should be stressed that the analytical description in Table 3 bis was designed precisely to give a clear picture of the structure of the firms without revealing individual details.

The values of the L indexes are given for each of the three variables, and for comparative purposes the

minimum and maximum

$(L_{n^*_m})$ $(L_{n^*_h})$

are also indicated.

This table, therefore, highlights the complete series of Linda curves from n* = 2 to n* = entire sample.

5. Table 4 summarizes by reference to the $L_s$ index the trends in the various aspects of the structure of the large firms, constituting the sample. This reveals the trend in the indexes calculated simultaneously on the basi of all the variables used.

As regards the columns in this table, the following should be noted:

The $n^*_m$ indicate the number of firms corresponding to the minimum value of the L index within the sample (n*) selected, while $L_{n^*_m}$ is the value of the relevant L index. The arithmetic mean of the L indexes from $L_2$ to $L_{n^*_m}$ inclusive, gives the $L_s$ index, which expresses the degree of equilibrium and of concentration between the first $n^*_m$ firms in the industry.

References on the Linda index:

R Linda,Le systeme des indices d'equilibre et son application concrete a la siderurgie des Etats Unis,in "Rivista di Politica Economica,Roma,Mai 1968,serie III fasc V.
C Marfels ,A New Look at the Structure of Oligopoly in "Zeitschrift fur die gesamte Staatswissenschaft,1974,Tubingen.

Appendix A

The Danish Radio and TV industry - ISIC 3731

Contents:



The texts of tables 1 to 4 are in French. The translation of the individual variables is as follows:

Turnover = Chiffre d'affaires
Persons employed = Effectifs
Wages and salaries = Masse salariale

IV/A-3 CONCENTRATION INDUSTRIELLE

EVOLUTION DES DONNEES GLOBALES : TOTAL DU SECTEUR ET ECHANTILLON

TABLEAU NO 1

1968 - 1973

PAYS : DANEMARK

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I.C.E. 375)

ENTREPRISES

PAGE 1

VARIABLE : 01 CHIFFRE D'AFFAIRES mia. d. kr.

| ANNEE | TOTAL N | TOTAL VALEUR (T) | TOTAL 1968=100 | ECHANTILLON N | ECHANTILLON VALEUR (E) | ECHANTILLON 1968=100 | E/T % |
|---|---|---|---|---|---|---|---|
| 1968 | 18 | .403 | 100 | 17 | .402 | 100 | 99.75 |
| 1969 | 19 | .491 | 121 | 18 | .490 | 121 | 99.80 |
| 1970 | 21 | .647 | 160 | 20 | .644 | 160 | 99.54 |
| 1971 | 19 | .671 | 166 | 18 | .668 | 166 | 99.55 |
| 1972 | 19 | .724 | 179 | 18 | .722 | 179 | 99.72 |
| 1973 | 19 | .908 | 225 | 18 | .905 | 225 | 99.67 |

VARIABLE : 02 EFFECTIF

| ANNEE | TOTAL N | TOTAL VALEUR (T) | TOTAL 1968=100 | ECHANTILLON N | ECHANTILLON VALEUR (E) | ECHANTILLON 1968=100 | E/T % |
|---|---|---|---|---|---|---|---|
| 1968 | 18 | 3.844 | 100 | 17 | 3.832 | 100 | 99.69 |
| 1969 | 19 | 4.400 | 114 | 18 | 4.388 | 114 | 99.73 |
| 1970 | 21 | 4.756 | 123 | 20 | 4.740 | 123 | 99.66 |
| 1971 | 19 | 4.340 | 112 | 18 | 4.327 | 112 | 99.70 |
| 1972 | 19 | 4.464 | 116 | 18 | 4.451 | 116 | 99.71 |
| 1973 | 19 | 5.211 | 135 | 18 | 5.198 | 135 | 99.75 |

IV/A-3

CONCENTRATION INDUSTRIELLE

EVOLUTION DES DONNEES GLOBALES : TOTAL DU SECTEUR ET ECHANTILLON

TABLEAU NO 1

1968 - 1973

PAYS : DANEMARK

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I

ENTREPRISES

PAGE 2

VARIABLE : 03 MASSE SALARIALE 100 mill D kr

| | TOTAL | | | ECHANTILLON | | | |
|---|---|---|---|---|---|---|---|
| ANNEE | N. | VALEUR (T) | 1968=100 | N* | VALEUR (E) | 1968=100 | E/T % |
| 1968 | 18 | .933 | 100 | 17 | .929 | 100 | 99.57 |
| 1969 | 19 | 1.169 | 125 | 18 | 1.165 | 125 | 99.66 |
| 1970 | 21 | 1.359 | 145 | 20 | 1.355 | 145 | 99.71 |
| 1971 | 19 | 1.467 | 157 | 18 | 1.463 | 157 | 99.73 |
| 1972 | 19 | 1.728 | 185 | 18 | 1.723 | 185 | 99.71 |
| 1973 | 19 | 2.163 | 231 | 18 | 2.157 | 232 | 99.72 |

# EVOLUTION DE LA CONCENTRATION

TABLEAU NO 2

## TOTAL DU SECTEUR

PAYS : DANEMARK

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I

ENTREPRISES

PAGE 1

VARIABLES : 01 CHIFFRE D'AFFAIRES  02 EFFECTIF  03 MASSE SALARIALE
04 BENEFICE NET  05 CASH FLOW  06 INVESTIS BRUTS
07 CAPITAUX PROPRES  08 EXPORT.  09 IMPORT.  10

| VARIABLE | ANNEE | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1968 | | | | | | 1969 | | | | | |
| | N | M | V | G | H | E | N | M | V | G | H | E |
| 0 1 | 18 | .022 | 2.12732 | .75613 | 306.97190 | -73.56105 | 19 | .026 | 2.38165 | .77500 | 351.17243 | -70.24017 |
| 0 2 | 18 | .214 | 2.15199 | .76049 | 312.83750 | -72.50948 | 19 | .232 | 2.03283 | .73565 | 270.12603 | -79.58562 |
| 0 3 | 18 | .052 | 1.99462 | .72853 | 276.58362 | -78.04262 | 19 | .062 | 2.12894 | .73477 | 291.17837 | -78.38245 |
| | 1970 | | | | | | 1971 | | | | | |
| 0 1 | 21 | .031 | 1.84146 | .63767 | 209.09488 | -95.09907 | 19 | .035 | 2.26395 | .71755 | 322.39401 | -77.53615 |
| 0 2 | 21 | .226 | 2.19290 | .71845 | 276.61054 | -83.38363 | 19 | .228 | 2.24343 | .73357 | 317.52479 | -76.60799 |
| 0 3 | 21 | .065 | 2.36946 | .73668 | 314.96940 | -79.03864 | 19 | .077 | 2.27364 | .73813 | 324.70730 | -75.79446 |

IV/A-3

# EVOLUTION DE LA CONCENTRATION

TABLEAU NO 2

## TOTAL DU SECTEUR

PAYS : DANEMARK

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I

ENTREPRISES

VARIABLES : 01 CHIFFRE D'AFFAIRES 02 EFFECTIF 03 MASSE SALARIALE
04 BENEFICE NET 05 CASH FLOW 06 INVESTIS BRUTS
07 CAPITAUX PROPRES 08 EXPORT. 09 IMPORT. 10



| VARIABLE | 1972 N | 1972 M | 1972 V | 1972 G | 1972 H | 1972 E | 1973 N | 1973 M | 1973 V | 1973 G | 1973 H | 1973 E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 1 | 19 | .038 | 2.19565 | .71794 | 306.36275 | -78.78058 | 19 | .048 | 2.17991 | .71366 | 302.73729 | -79.33839 |
| 0 2 | 19 | .235 | 2.30329 | .73125 | 331.84864 | -75.71183 | 19 | .274 | 2.39741 | .74587 | 355.13538 | -72.80540 |
| 0 3 | 19 | .091 | 2.30770 | .73038 | 332.92074 | -75.70038 | 19 | .114 | 2.36051 | .73519 | 345.89401 | -74.31096 |

IV/A-3

# E V O L U T I O N  D E  L A  C O N C E N T R A T I O N

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

TABLEAU NO 3

1968 - 1973

PAGE 1

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I
ENTREPRISES

VARIABLE : 01 CHIFFRE D'AFFAIRES

| ANNEE | L ET CR % | INDICES L ET CR RELATIFS A N* = 4 | 8 | 10 | 12 | 20 | 30 | 40 | N | ECHANTILLON N* | ECHANTILLON L N* | 1ER MAXIMUM N* H< | 1ER MAXIMUM L N*H< | 2EM MAXIMUM N* H | 2EM MAXIMUM L N*H | MINIMUM N* M | MINIMUM L N*M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968 | L | 1.02936 | .96945 | .98007 | .97907 | .00000 | .00000 | .00000 | 18 | 17 | 1.31988 | 2 | 1.72500 | 2 | 1.72500 | 9 | .87092 |
| | CR | 84.37 | 94.29 | 97.02 | 98.51 | .00 | .00 | .00 | | | 99.75 | | | | | | |
| 1969 | L | 1.41834 | 1.04602 | 1.09905 | 1.12509 | .00000 | .00000 | .00000 | 19 | 18 | 1.32063 | 2 | 2.06716 | 2 | 2.06716 | 9 | .95137 |
| | CR | 84.11 | 94.09 | 96.54 | 97.76 | .00 | .00 | .00 | | | 99.80 | | | | | | |
| 1970 | L | .97754 | .53541 | .47285 | .52340 | .44902 | .00000 | .00000 | 21 | 20 | .44902 | 2 | 2.20161 | 2 | 2.20161 | 18 | .41145 |
| | CR | 66.31 | 84.54 | 89.30 | 92.12 | 99.54 | .00 | .00 | | | 99.54 | | | | | | |
| 1971 | L | 1.52289 | .80849 | .68222 | .73807 | .00000 | .00000 | .00000 | 19 | 18 | .77743 | 2 | 2.61429 | 2 | 2.61429 | 10 | .68222 |
| | CR | 77.35 | 90.16 | 94.78 | 96.27 | .00 | .00 | .00 | | | 99.55 | | | | | | |
| 1972 | L | 1.37610 | .75817 | .63751 | .72722 | .00000 | .00000 | .00000 | 19 | 18 | .91879 | 2 | 2.55333 | 2 | 2.55333 | 10 | .63751 |
| | CR | 76.38 | 90.33 | 95.30 | 96.96 | .00 | .00 | .00 | | | 99.72 | | | | | | |
| 1973 | L | 1.28784 | .74194 | .59506 | .75314 | .00000 | .00000 | .00000 | 19 | 18 | .87457 | 2 | 2.74713 | 2 | 2.74713 | 10 | .59506 |
| | CR | 75.44 | 90.42 | 95.70 | 97.03 | .00 | .00 | .00 | | | 99.67 | | | | | | |

IV/A-3

# E V O L U T I O N D E L A C O N C E N T R A T I O N

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

TABLEAU NO 3
1968 - 1973

PAGE 2

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N,I
ENTREPRISES:

VARIABLE : 02 EFFECTIF

| ANNEE | L ET CR % | INDICES L ET CR RELATIFS A N* = 4 | 8 | 10 | 12 | 20 | 30 | 40 | N | ECHANTILLON N* | ECHANTILLON L N* | COURBES L 1ER MAXIMUM N* H< | 1ER MAXIMUM L N*H< | 2EM MAXIMUM N* H | 2EM MAXIMUM L N*H | MINIMUM N* M | MINIMUM L N*M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968 | L | 1.01111 | 1.13023 | 1.18511 | 1.16739 | .00000 | .00000 | .00000 | 18 | 17 | 1.26284 | 2 | 2.00000 | 2 | 2.00000 | 5 | .89858 |
| | CR | 84.55 | 94.95 | 96.88 | 98.13 | .00 | .00 | .00 | | | 99.69 | | | | | | |
| 1969 | L | .95255 | .77746 | .87100 | .93681 | .00000 | .00000 | .00000 | 19 | 18 | 1.05076 | 2 | 1.75000 | 2 | 1.75000 | 9 | .70772 |
| | CR | 79.55 | 93.18 | 96.09 | 97.36 | .00 | .00 | .00 | | | 99.73 | | | | | | |
| 1970 | L | 1.28085 | .70238 | .62953 | .77535 | .69725 | .00000 | .00000 | 21 | 20 | .69725 | 2 | 1.89758 | 2 | 1.89755 | 10 | .62953 |
| | CR | 75.13 | 89.63 | 93.84 | 95.21 | 99.66 | .00 | .00 | | | 99.66 | | | | | | |
| 1971 | L | 1.45038 | .83631 | .69898 | .82472 | .00000 | .00000 | .00000 | 19 | 18 | .95465 | 2 | 2.11818 | 2 | 2.11818 | 10 | .69898 |
| | CR | 78.34 | 91.24 | 95.74 | 97.12 | .00 | .00 | .00 | | | 99.70 | | | | | | |
| 1972 | L | 1.59939 | .84714 | .66457 | .80504 | .00000 | .00000 | .00000 | 19 | 18 | .95855 | 2 | 2.47400 | 2 | 2.47400 | 10 | .66457 |
| | CR | 77.37 | 90.70 | 95.86 | 97.20 | .00 | .00 | .00 | | | 99.71 | | | | | | |
| 1973 | L | 1.65041 | .88312 | .71237 | .89129 | .00000 | .00000 | .00000 | 19 | 18 | 1.09255 | 2 | 2.73273 | 2 | 2.73273 | 10 | .71237 |
| | CR | 78.79 | 91.84 | 96.45 | 97.60 | .00 | .00 | .00 | | | 99.75 | | | | | | |

IV/A-3

# E V O L U T I O N   D E   L A   C O N C E N T R A T I O N

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

TABLEAU NO 3

1968 - 1973

PAGE 3

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I
ENTREPRISES

VARIABLE : 03 MASSE SALARIALE

| ANNEE | L ET CR % | INDICES L ET CR RELATIFS A N* = 4 | 8 | 10 | 12 | 20 | 30 | 40 | N | ECHANTILLON N* | ECHANTILLON L N* | COURBES L: 1ER MAXIMUM N* H< | 1ER MAXIMUM L N*H< | 2EM MAXIMUM N* H | 2EM MAXIMUM L N*H | MINIMUM N* M | MINIMUM L N*M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968 | L | .86753 | .95875 | .95294 | .90862 | .00000 | .00000 | .00000 | 18 | 17 | .95138 | 2 | 1.73077 | 2 | 1.73077 | 5 | .74473 |
| | CR | 81.46 | 93.25 | 95.71 | 97.43 | .00 | .00 | .00 | | | 99.57 | | | | | | |
| 1969 | L | 1.07618 | .84247 | .89947 | .90460 | .00000 | .00000 | .00000 | 19 | 18 | .92333 | 2 | 1.84375 | 2 | 1.84375 | 9 | .79187 |
| | CR | 79.56 | 92.56 | 95.21 | 96.75 | .00 | .00 | .00 | | | 99.66 | | | | | | |
| 1970 | L | 1.40191 | .81906 | .74140 | .81461 | .76718 | .00000 | .00000 | 21 | 20 | .76718 | 2 | 2.28125 | 2 | 2.28125 | 18 | .71838 |
| | CR | 77.63 | 90.14 | 93.75 | 95.58 | 99.71 | .00 | .00 | | | 99.71 | | | | | | |
| 1971 | L | 1.40032 | .83863 | .72267 | .84702 | .00000 | .00000 | .00000 | 19 | 18 | 1.00954 | 2 | 2.35294 | 2 | 2.35294 | 10 | .72267 |
| | CR | 78.73 | 91.68 | 95.91 | 97.27 | .00 | .00 | .00 | | | 99.73 | | | | | | |
| 1972 | L | 1.57346 | .85101 | .66256 | .79416 | .00000 | .00000 | .00000 | 19 | 18 | .95303 | 2 | 2.52632 | 2 | 2.52632 | 10 | .66256 |
| | CR | 77.55 | 90.51 | 95.78 | 97.16 | .00 | .00 | .00 | | | 99.71 | | | | | | |
| 1973 | L | 1.67525 | .85367 | .67430 | .82351 | .00000 | .00000 | .00000 | 19 | 18 | .99378 | 2 | 2.67391 | 2 | 2.67391 | 10 | .67430 |
| | CR | 77.67 | 90.94 | 96.02 | 97.32 | .00 | .00 | .00 | | | 99.72 | | | | | | |

# CONCENTRATION INDUSTRIELLE

**TABLEAU NO 3BIS**

## TABLEAU STRUCTUREL DES COURBES LINDA

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N,I
ENTREPRISES

PAGE 1

ANNEE : 1968

| N. | VARIABLE 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | 1,72500 | 2,00000 | 1,73077 |
| | ======== | ======== | ======== |
| 3 | 1,11326 | 1,08333 | 1,13551 |
| 4 | 1,02936 | 1,01111 | ,86753 |
| 5 | 1,07704 | ,89858 | ,74473 |
| | | -------- | -------- |
| 6 | 1,08469 | ,95616 | ,91436 |
| 7 | 1,06004 | 1,13919 | ,99584 |
| 8 | ,96945 | 1,13023 | ,95875 |
| 9 | ,87092 | 1,06370 | ,88867 |
| | -------- | | |
| 10 | ,98007 | 1,18511 | ,95294 |
| 11 | ,99992 | 1,19926 | ,94518 |
| 12 | ,97907 | 1,16739 | ,90862 |
| 13 | 1,19026 | 1,29456 | ,99354 |
| 14 | 1,29255 | 1,33464 | 1,01655 |
| 15 | 1,33321 | 1,33073 | 1,00863 |
| 16 | 1,33747 | 1,30515 | ,98431 |
| 17 | 1,31983 | 1,26284 | ,95138 |

CONCENTRATION INDUSTRIELLE

TABLEAU NO 3BIS

TABLEAU STRUCTUREL DES COURBES LINDA

PAGE 2

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N,I
ENTREPRISES

ANNEE : 1969

| N* | 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 2,06716 | 1,75000 | 1,84375 | | | | | | |
| | ======== | ======== | ======== | | | | | | |
| 3 | 1,41987 | 1,08636 | 1,38141 | | | | | | |
| 4 | 1,41834 | ,95255 | 1,07616 | | | | | | |
| 5 | 1,37045 | ,81634 | ,89520 | | | | | | |
| 6 | 1,24392 | ,80933 | ,88670 | | | | | | |
| 7 | 1,10615 | ,83112 | ,90367 | | | | | | |
| 8 | 1,04602 | ,77746 | ,84247 | | | | | | |
| 9 | ,95137 | ,70772 | ,79187 | | | | | | |
| | -------- | -------- | -------- | | | | | | |
| 10 | 1,09905 | ,87100 | ,89947 | | | | | | |
| 11 | 1,13797 | ,93004 | ,92147 | | | | | | |
| 12 | 1,12509 | ,93681 | ,90460 | | | | | | |
| 13 | 1,08728 | ,91683 | ,86980 | | | | | | |
| 14 | 1,03808 | ,88347 | ,82734 | | | | | | |
| 15 | 1,19840 | ,99271 | ,90343 | | | | | | |
| 16 | 1,27996 | 1,04134 | ,93227 | | | | | | |
| 17 | 1,31479 | 1,05612 | ,93530 | | | | | | |
| 18 | 1,32063 | 1,05076 | ,92333 | | | | | | |

CONCENTRATION INDUSTRIELLE

TABLEAU STRUCTUREL DES COURBES LINDA

TABLEAU NO 3BIS

PAGE 3

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N,I
ENTREPRISES

ANNEE : 1970

| N | VARIABLE 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | 2,20161 | 1,89758 | 2,28125 |
| | ======== | ======== | ======== |
| 3 | 1,37083 | 1,48853 | 1,73495 |
| 4 | ,97754 | 1,28085 | 1,40191 |
| 5 | ,77806 | 1,08594 | 1,23716 |
| 6 | ,62011 | ,94201 | 1,11060 |
| 7 | ,59276 | ,79776 | ,95519 |
| 8 | ,53541 | ,70238 | ,81906 |
| 9 | ,50234 | ,67800 | ,79115 |
| 10 | ,47285 | ,62953 | ,74140 |
| | | -------- | |
| 11 | ,50714 | ,71943 | ,73354 |
| 12 | ,52340 | ,77535 | ,81461 |
| 13 | ,51729 | ,78669 | ,83800 |
| 14 | ,50099 | ,77582 | ,83250 |
| 15 | ,48002 | ,75333 | ,81210 |
| 16 | ,45720 | ,72494 | ,78378 |
| 17 | ,43406 | ,69392 | ,75175 |
| 18 | ,41145 | ,66218 | ,71838 |
| | -------- | | -------- |
| 19 | ,43757 | ,68978 | ,75452 |
| 20 | ,44902 | ,69725 | ,76718 |

CONCENTRATION INDUSTRIELLE

TABLEAU NO 3BIS

TABLEAU STRUCTUREL DES COURBES LINDA

PAGE 4

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N,I
ENTREPRISES

ANNEE : 1971

| N | VARIABLE 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | 2,61429 | 2,11818 | 2,35294 |
| | ======== | ======== | ======== |
| 3 | 1,63661 | 1,64272 | 1,68723 |
| 4 | 1,52289 | 1,45036 | 1,40032 |
| 5 | 1,32738 | 1,14610 | 1,11629 |
| 6 | 1,13449 | 1,09016 | 1,07971 |
| 7 | ,95467 | ,96160 | ,95987 |
| 8 | ,80849 | ,83631 | ,83863 |
| 9 | ,71882 | ,74437 | ,74699 |
| 10 | ,68222 | ,69898 | ,72267 |
| | -------- | -------- | -------- |
| 11 | ,76551 | ,79510 | ,81901 |
| 12 | ,78807 | ,82472 | ,84702 |
| 13 | ,78065 | ,82084 | ,84130 |
| 14 | ,75803 | ,79965 | ,81837 |
| 15 | ,79867 | ,89929 | ,93352 |
| 16 | ,80580 | ,94422 | ,98864 |
| 17 | ,79617 | ,95856 | 1,00947 |
| 18 | ,77743 | ,95465 | 1,00954 |

IV/A-3 CONCENTRATION INDUSTRIELLE

TABLEAU STRUCTUREL DES COURBES LINDA.

TABLEAU NO 3BIS

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N,I
ENTREPRISES

PAGE 5

ANNEE : 1972

| N | 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 2,55333 | 2,47400 | 2,52632 | | | | | | |
| 3 | 1,58179 | 1,94238 | 1,93783 | | | | | | |
| 4 | 1,37610 | 1,59939 | 1,57346 | | | | | | |
| 5 | 1,13831 | 1,23438 | 1,24175 | | | | | | |
| 6 | ,93120 | 1,06107 | 1,11044 | | | | | | |
| 7 | ,87157 | ,96366 | ,98069 | | | | | | |
| 8 | ,75817 | ,84714 | ,85101 | | | | | | |
| 9 | ,65982 | ,74166 | ,73940 | | | | | | |
| 10 | ,63751 | ,66457 | ,66256 | | | | | | |
| 11 | ,70986 | ,76794 | ,76033 | | | | | | |
| 12 | ,72722 | ,80504 | ,79416 | | | | | | |
| 13 | ,71802 | ,80722 | ,79448 | | | | | | |
| 14 | ,69560 | ,79069 | ,77699 | | | | | | |
| 15 | ,81708 | ,89543 | ,88422 | | | | | | |
| 16 | ,88101 | ,94384 | ,93493 | | | | | | |
| 17 | ,91061 | ,96065 | ,95363 | | | | | | |
| 18 | ,91879 | ,95855 | ,95303 | | | | | | |

CONCENTRATION INDUSTRIELLE

TABLEAU NO 3318

TABLEAU STRUCTUREL DES COURBES LINDA

PAGE 6

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I
ENTREPRISES

ANNEE : 1973

| N. | 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | 2.74713 | 2.73273 | 2.67391 |
| 3 | 1.77260 | 2.16660 | 2.18532 |
| 4 | 1.28784 | 1.65041 | 1.67525 |
| 5 | 1.04598 | 1.36032 | 1.36373 |
| 6 | .85215 | 1.12626 | 1.10750 |
| 7 | .80777 | .94719 | .94898 |
| 8 | .74194 | .88312 | .85567 |
| 9 | .66599 | .79623 | .76162 |
| 10 | .59506 | .71237 | .67430 |
| 11 | .70782 | .84075 | .78308 |
| 12 | .75314 | .89129 | .82351 |
| 13 | .76216 | .90005 | .82754 |
| 14 | .75130 | .88593 | .81191 |
| 15 | .83650 | 1.01152 | .92345 |
| 16 | .87224 | 1.07082 | .97578 |
| 17 | .88123 | 1.09288 | .99480 |
| 18 | .87457 | 1.09255 | .99378 |

CONCENTRATION INDUSTRIELLE

TABLEAU NO . 4

TABLEAU RECAPITULATIF DES INDICES L

PAYS : DANEMARK

PAGE 1

INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N.I
ENTREPRISES

| VARIABLES | 1968 INDICES N*M | 1968 INDICES LN*M | 1968 INDICES LS | 1969 INDICES N*M | 1969 INDICES LN*M | 1969 INDICES LS | 1970 INDICES N*M | 1970 INDICES LN*M | 1970 INDICES LS | 1971 INDICES N*M | 1971 INDICES LN*M | 1971 INDICES LS | 1972 INDICES N*M | 1972 INDICES LN*M | 1972 INDICES LS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 CHIFFRE D'AFFAIRES | 9 | ,87092 | 1,11685 | 9 | ,95137 | 1,32791 | 18 | ,41145 | ,69900 | 10 | ,68222 | 1,26665 | 10 | ,63751 | 1,17309 |
| 02 EFFECTIF | 5 | ,89858 | 1,24826 | 9 | ,70772 | ,96636 | 10 | ,62953 | 1,05584 | 10 | ,69898 | 1,18764 | 10 | ,66457 | 1,28092 |
| 03. MASSE SALARIALE | 5 | ,74473 | 1,11964 | 9 | ,79187 | 1,07766 | 18 | ,71836 | 1,02102 | 10 | ,72267 | 1,21163 | 10 | ,66256 | 1,29150 |

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CONCENTRATION INDUSTRIELLE

TABLEAU NO 4

TABLEAU RECAPITULATIF DES INDICES L

PAGE 2

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : RADIO TELEVISION ELECTRO-ACOUSTIQUE (N,I
ENTREPRISES

| VARIABLES | 1973 INDICES | | | 0 INDICES | | | INDICES | | | INDICES | | | INDICES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N* M | LN*M | LS | N* M | LN*M | LS | N* M | LN*M | LS | N* M | LN*M | LS | N* M | LN*M | LS |
| 01 CHIFFRE D'AFFAIRES | 10 | .59506 | 1,16850 | | | | | | | | | | | | |
| 02 EFFECTIF | 10 | .71237 | 1,37503 | | | | | | | | | | | | |
| 03 MASSE SALARIALE | 10 | .67430 | 1,36103 | | | | | | | | | | | | |

# Appendix B

The Danish industry for electric household appliances - ISIC 3722

Contents:



The texts of tables 1 to 4 are in French. The translation of the individual variables is as follows:

Turnover = Chiffre d'affaires
Persons employed = Effectifs
Wages and salaries = Masse salariale

# CONCENTRATION INDUSTRIELLE

TABLEAU NO 1

## EVOLUTION DES DONNEES GLOBALES : TOTAL DU SECTEUR ET ECHANTILLON

1968 - 1973

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES



VARIABLE : 01 CHIFFRE D'AFFAIRES (en 100.000 D kr.)

| ANNEE | TOTAL N | TOTAL VALEUR (T) | TOTAL 1968=100 | ECHANTILLON N* | ECHANTILLON VALEUR (E) | ECHANTILLON 1968=100 | E/T % |
|---|---|---|---|---|---|---|---|
| 1968 | 10 | 2.200 | 100 | 9 | 2.190 | 100 | 99.55 |
| 1969 | 9 | 4.370 | 198 | 8 | 4.360 | 199 | 99.77 |
| 1970 | 10 | 3.910 | 177 | 9 | 3.900 | 178 | 99.74 |
| 1971 | 10 | 3.440 | 156 | 9 | 3.430 | 156 | 99.71 |
| 1972 | 9 | 3.920 | 178 | 8 | 3.910 | 178 | 99.74 |
| 1973 | 9 | 5.050 | 229 | 8 | 5.030 | 229 | 99.60 |

VARIABLE : 02 EFFECTIF

| ANNEE | TOTAL N | TOTAL VALEUR (T) | TOTAL 1968=100 | ECHANTILLON N* | ECHANTILLON VALEUR (E) | ECHANTILLON 1968=100 | E/T % |
|---|---|---|---|---|---|---|---|
| 1968 | 10 | 1.867 | 100 | 9 | 1.852 | 100 | 99.20 |
| 1969 | 9 | 3.704 | 198 | 8 | 3.689 | 199 | 99.60 |
| 1970 | 10 | 3.446 | 184 | 9 | 3.431 | 185 | 99.56 |
| 1971 | 10 | 2.334 | 125 | 9 | 2.319 | 125 | 99.36 |
| 1972 | 9 | 2.375 | 127 | 8 | 2.360 | 127 | 99.37 |
| 1973 | 9 | 2.580 | 138 | 8 | 2.565 | 138 | 99.42 |

IV/A-3 CONCENTRATION INDUSTRIELLE

TABLEAU NO 1

EVOLUTION DES DONNEES GLOBALES : TOTAL DU SECTEUR ET ECHANTILLON

1968 - 1973

PAYS : DANEMARK

PAGE 2

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)

ENTREPRISES

VARIABLE : 03 MASSE SALARIALE ( en 100.000 D kr.)

| | TOTAL | | | ECHANTILLON | | | |
|---|---|---|---|---|---|---|---|
| ANNEE | N | VALEUR (T) | 1968=100 | N* | VALEUR (E) | 1968=100 | E/T % |
| 1968 | 10 | .506 | 100 | 9 | .505 | 100 | 99.41 |
| 1969 | 9 | 1.056 | 208 | 8 | 1.053 | 209 | 99.72 |
| 1970 | 10 | 1.059 | 209 | 9 | 1.056 | 209 | 99.72 |
| 1971 | 10 | .859 | 169 | 9 | .856 | 170 | 99.65 |
| 1972 | 9 | .929 | 183 | 8 | .926 | 134 | 99.68 |
| 1973 | 9 | 1.196 | 236 | 8 | 1.193 | 237 | 99.75 |

EVOLUTION DE LA CONCENTRATION

TABLEAU NO 2

TOTAL DU SECTEUR

PAYS : DANEMARK — PAGE 1
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES
VARIABLES : 01 CHIFFRE D'AFFAIRES 02 EFFECTIF 03 MASSE SALARIALE
04 BENEFICE NET 05 CASH FLOW 06 INVESTIS BRUTS
07 CAPITAUX PROPRES 08 EXPORT. 09 IMPORT. 10

ANNEE

| VARIABLE | 1968 N | 1968 M | 1968 V | 1968 G | 1968 H | 1968 E | 1969 N | 1969 M | 1969 V | 1969 G | 1969 H | 1969 E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 10 | .220 | 1.03592 | .34273 | 207.31405 | -77.09746 | 9 | .486 | 1.71086 | .71345 | 436.53783 | -51.92405 |
| 02 | 10 | .187 | 1.12812 | .56877 | 227.26612 | -75.24484 | 9 | .412 | 1.88450 | .73950 | 505.70410 | -46.60498 |
| 03 | 10 | .051 | 1.34041 | .61897 | 281.28076 | -68.39683 | 9 | .117 | 1.97032 | .76573 | 542.46119 | -41.56975 |

| VARIABLE | 1970 N | 1970 M | 1970 V | 1970 G | 1970 H | 1970 E | 1971 N | 1971 M | 1971 V | 1971 G | 1971 H | 1971 E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 10 | .371 | 1.56067 | .69693 | 343.56787 | -60.01002 | 10 | .344 | 1.37562 | .64942 | 275.08680 | -66.24634 |
| 02 | 10 | .365 | 1.89002 | .74620 | 459.48738 | -50.60500 | 10 | .233 | 1.50175 | .67901 | 325.52396 | -62.40730 |
| 03 | 10 | .106 | 2.06376 | .78054 | 526.73830 | -43.55209 | 10 | .086 | 1.72647 | .72724 | 398.06825 | -54.61379 |

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EVOLUTION DE LA CONCENTRATION

TABLEAU NO 2

TOTAL DU SECTEUR

PAGE 2

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES
VARIABLES : 01 CHIFFRE D'AFFAIRES 02 EFFECTIF 03 MASSE SALARIALE
04 BENEFICE NET 05 CASH FLOW 06 INVESTIS BRUTS
07 CAPITAUX PROPRES 08 EXPORT. 09 IMPORT. 10

| VARIABLE | 1972 N | 1972 M | 1972 V | 1972 G | 1972 H | 1972 E | 1973 N | 1973 M | 1973 V | 1973 G | 1973 H | 1973 E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 9 | .436 | 1.32507 | .64626 | 306.20054 | -62.04566 | 9 | .361 | 1.49135 | .67943 | 358.23567 | -57.71921 |
| 02 | 9 | .264 | 1.42072 | .66246 | 337.28089 | -60.19860 | 9 | .287 | 1.50943 | .67959 | 364.26597 | -57.79165 |
| 03 | 9 | .103 | 1.51925 | .69441 | 367.56886 | -55.62366 | 9 | .133 | 1.59115 | .70401 | 392.41591 | -54.24592 |

IV/A-3

**E V O L U T I O N   D E   L A   C O N C E N T R A T I O N**

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

TABLEAU NO 3
1968 - 1973

PAGE 1

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES

VARIABLE : 01 CHIFFRE D'AFFAIRES

| ANNEE | L ET CR % | INDICES L ET CR RELATIFS A N* = 4 | 8 | 10 | 12 | 20 | 30 | 40 | N | ECHANTILLON N* | ECHANTILLON L N* | 1ER MAXIMUM N* H< | 1ER MAXIMUM L N*H< | 2EM MAXIMUM N* H | 2EM MAXIMUM L N*H | MINIMUM N* M | MINIMUM L N*M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968 | L | .57420 | .91302 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | .96461 | 3 | .58053 | 9 | .96461 | 6 | .43621 |
| | CR | 90.91 | 98.64 | .00 | .00 | .00 | .00 | .00 | | | 99.55 | | | | | | |
| 1969 | L | 1.40525 | 2.50407 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 2.50407 | 2 | 1.90972 | 8 | 2.50407 | 5 | 1.20708 |
| | CR | 94.05 | 99.77 | .00 | .00 | .00 | .00 | .00 | | | 99.77 | | | | | | |
| 1970 | L | 1.00540 | 2.33262 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | 2.29265 | 2 | 1.17816 | 8 | 2.33262 | 5 | .95406 |
| | CR | 92.58 | 99.23 | .00 | .00 | .00 | .00 | .00 | | | 99.74 | | | | | | |
| 1971 | L | .69731 | 2.00209 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | 1.93459 | 2 | .69697 | 8 | 2.00209 | 2 | .69697 |
| | CR | 91.20 | 99.13 | .00 | .00 | .00 | .00 | .00 | | | 99.71 | | | | | | |
| 1972 | L | .78778 | 2.40208 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 2.40208 | 2 | .93367 | 8 | 2.40208 | 4 | .78798 |
| | CR | 92.86 | 99.74 | .00 | .00 | .00 | .00 | .00 | | | 99.74 | | | | | | |
| 1973 | L | 1.00011 | 2.94239 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 2.94239 | 2 | 1.24091 | 8 | 2.94239 | 4 | 1.00011 |
| | CR | 93.06 | 99.60 | .00 | .00 | .00 | .00 | .00 | | | 99.60 | | | | | | |

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# EVOLUTION DE LA CONCENTRATION

TABLEAU NO. 3

1968 - 1973

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

PAGE 2

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES

VARIABLE : 02 EFFECTIF

| ANNEE | L ET CR % | INDICES L ET CR RELATIFS A N* = 4 | 8 | 10 | 12 | 20 | 30 | 40 | N | COURBES L: ECHANTILLON N* | L N* | 1ER MAXIMUM N* H< | L N*H< | 2EM MAXIMUM N* H | L N*H | MINIMUM N* K | L N*K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968 | L | .62141 | .87488 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | .92551 | 2 | .56364 | 9 | .92551 | 2 | .56364 |
| | CR | 84.09 | 98.13 | .00 | .00 | .00 | .00 | .00 | | | 99.20 | | | | | | |
| 1969 | L | 1.77075 | 2.69619 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 2.69619 | 3 | 2.40729 | 8 | 2.69619 | 4 | 1.77075 |
| | CR | 95.14 | 99.60 | .00 | .00 | .00 | .00 | .00 | | | 99.60 | | | | | | |
| 1970 | L | 1.55485 | 2.55685 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | 2.63365 | 3 | 2.05699 | 9 | 2.63365 | 4 | 1.55485 |
| | CR | 94.54 | 99.13 | .00 | .00 | .00 | .00 | .00 | | | 99.56 | | | | | | |
| 1971 | L | .96474 | 1.69936 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | 1.74777 | 2 | .93593 | 9 | 1.74777 | 2 | .93593 |
| | CR | 92.03 | 98.71 | .00 | .00 | .00 | .00 | .00 | | | 99.36 | | | | | | |
| 1972 | L | .95738 | 1.95672 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 1.95672 | 2 | .98561 | 8 | 1.95672 | 2 | .98561 |
| | CR | 93.05 | 99.37 | .00 | .00 | .00 | .00 | .00 | | | 99.37 | | | | | | |
| 1973 | L | 1.10332 | 2.14457 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 2.14457 | 3 | 1.30333 | 8 | 2.14457 | 4 | 1.10332 |
| | CR | 93.60 | 99.42 | .00 | .00 | .00 | .00 | .00 | | | 99.42 | | | | | | |

IV/A-3

**E V O L U T I O N   D E   L A   C O N C E N T R A T I O N**

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

TABLEAU NO 3

1968 - 1973

PAYS : DANEMARK

PAGE 3

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)

ENTREPRISES

VARIABLE : 03 MASSE SALARIALE

| ANNEE | L ET CR X | INDICES L ET CR RELATIFS A N* = 4 | 8 | 10 | 12 | 20 | 30 | 40 | N | ECHANTILLON N* | ECHANTILLON $L_{N*}$ | COURBES L 1ER MAXIMUM N* H< | 1ER MAXIMUM $L_{N*H<}$ | 2EM MAXIMUM N* H | 2EM MAXIMUM $L_{N*H}$ | MINIMUM N* M | MINIMUM $L_{N*M}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968 | L | 1.01011 | .88669 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | 1.14911 | 2 | .52778 | 9 | 1.14911 | 2 | .52778 |
| | CR | 86.96 | 98.81 | .00 | .00 | .00 | .00 | .00 | | | 99.41 | | | | | | |
| 1969 | L | 2.94801 | 3.47135 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 3.47135 | 2 | 1.87500 | 3 | 3.72585 | 2 | 1.87500 |
| | CR | 75.64 | 99.72 | .00 | .00 | .00 | .00 | .00 | | | 99.72 | | | | | | |
| 1970 | L | 2.71104 | 3.40901 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | 3.58887 | 2 | 1.85000 | 9 | 3.58887 | 2 | 1.85000 |
| | CR | 95.37 | 99.43 | .00 | .00 | .00 | .00 | .00 | | | 99.72 | | | | | | |
| 1971 | L | 1.55035 | 2.44152 | .00000 | .00000 | .00000 | .00000 | .00000 | 10 | 9 | 2.62816 | 2 | 1.11364 | 9 | 2.62816 | 2 | 1.11364 |
| | CR | 93.15 | 99.30 | .00 | .00 | .00 | .00 | .00 | | | 99.65 | | | | | | |
| 1972 | L | 1.17450 | 3.24755 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 3.24755 | 2 | .94231 | 8 | 3.24755 | 2 | .94231 |
| | CR | 94.73 | 99.68 | .00 | .00 | .00 | .00 | .00 | | | 99.65 | | | | | | |
| 1973 | L | 1.30362 | 3.05344 | .00000 | .00000 | .00000 | .00000 | .00000 | 9 | 8 | 3.05344 | 2 | 1.17241 | 8 | 3.05344 | 2 | 1.17241 |
| | CR | 94.48 | 99.75 | .00 | .00 | .00 | .00 | .00 | | | 99.75 | | | | | | |

TABLEAU NO 38IS

## TABLEAU STRUCTUREL DES COURBES LINDA

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES

PAGE 1

ANNEE : 1968

| N. | 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | .54098 | .56364 | .52778 |
| 3 | .58053 | .71153 | 1.05871 |
| 4 | .57428 | .62141 | 1.01011 |
| 5 | .51562 | .60262 | .99741 |
| 6 | .43621 | .58554 | .86534 |
| 7 | .69637 | .80724 | .93036 |
| 8 | .91302 | .87488 | .88669 |
| 9 | .96461 | .92551 | 1.14911 |

CONCENTRATION INDUSTRIELLE

TABLEAU NO 38IS

TABLEAU STRUCTUREL DES COURBES LINDA

PAYS : DANEMARK PAGE 2
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES ANNEE : 1969

| N. | VARIABLE 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | 1,90972 | 2,24035 | 1,87500 |
| | | | --------- |
| 3 | 1,54137 | 2,40729 | 3,72555 |
| | | | ========= |
| 4 | 1,40525 | 1,77075 | 2,94801 |
| | | --------- | |
| 5 | 1,26708 | 1,83156 | 2,71092 |
| | --------- | | |
| 6 | 2,15028 | 2,42984 | 2,92676 |
| 7 | 2,73927 | 2,61249 | 2,72113 |
| 8 | 2,30407 | 2,69619 | 3,47155 |
| | ========= | ========= | |

IV/A-3

CONCENTRATION INDUSTRIELLE

TABLEAU NO 3BIS

TABLEAU STRUCTUREL DES COURBES LINDA

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES

PAGE 3

ANNEE : 1970

| N. | VARIABLE 01 CHIFFRE D'AFFAIRES | VARIABLE 02 EFFECTIF | VARIABLE 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | 1.17816 | 1.79341 | 1.65000 |
| | | | -------- |
| 3 | 1.10908 | 2.05699 | 2.98611 |
| 4 | 1.00540 | 1.55485 | 2.71164 |
| | | -------- | |
| 5 | .95406 | 1.63573 | 2.57826 |
| | -------- | | |
| 6 | 1.74605 | 2.37994 | 2.83000 |
| 7 | 2.30757 | 2.54136 | 2.64816 |
| 8 | 2.33262 | 2.55665 | 3.40901 |
| | ======== | | |
| 9 | 2.29265 | 2.63565 | 3.58887 |
| | | ======== | ======== |

IV/A-3 CONCENTRATION INDUSTRIELLE

TABLEAU NO 3BIS

TABLEAU STRUCTUREL DES COURBES LINDA

PAYS : DANEMARK PAGE 4

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)

ENTREPRISES ANNEE : 1971

| N | VARIABLE 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE |
|---|---|---|---|
| 2 | .69697 | .93393 | 1.11364 |
| | -------- | -------- | -------- |
| 3 | .75833 | 1.16137 | 1.78827 |
| 4 | .69731 | .96474 | 1.56035 |
| 5 | .70108 | 1.02550 | 1.42722 |
| 6 | 1.41425 | 1.55325 | 1.80077 |
| 7 | 1.92257 | 1.71328 | 1.77868 |
| 8 | 2.00209 | 1.69936 | 2.44152 |
| | ======== | | |
| 9 | 1.93459 | 1.74777 | 2.62816 |
| | | ======== | ======== |

IV/A-3

CONCENTRATION INDUSTRIELLE

* TABLEAU NO 3BIS *

TABLEAU STRUCTUREL DES COURBES LINDA

PAYS : DANEMARK

INSTITUT : AARHUS SCHOOL OF BUSINESS

SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)

ENTREPRISES

PAGE 5

ANNEE : 1972

| N. | VARIABLE 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | .93367 | .98361 | .94251 | | | | | | | |
| 3 | .91892 | 1.16755 | 1.36781 | | | | | | | |
| 4 | .70798 | .95736 | 1.17450 | | | | | | | |
| 5 | .79231 | 1.05278 | 1.25527 | | | | | | | |
| 6 | 2.05865 | 1.57508 | 1.73071 | | | | | | | |
| 7 | 2.39700 | 1.79609 | 2.92150 | | | | | | | |
| 8 | 2.40208 | 1.95672 | 3.24755 | | | | | | | |

IV/A-3 CONCENTRATION INDUSTRIELLE

TABLEAU NO 38IS

TABLEAU STRUCTUREL DES COURBES LINDA

PAYS : DANEMARK — PAGE 6
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES — ANNEE : 1973

| N | 01 CHIFFRE D'AFFAIRES | 02 EFFECTIF | 03 MASSE SALARIALE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1.24391 | 1.14754 | 1.17241 | | | | | | |
| | | | -------- | | | | | | |
| 3 | 1.17551 | 1.30333 | 1.49464 | | | | | | |
| 4 | 1.00011 | 1.10332 | 1.30562 | | | | | | |
| | -------- | -------- | | | | | | | |
| 5 | 1.00607 | 1.16926 | 1.51564 | | | | | | |
| 6 | 2.00623 | 1.75472 | 1.98571 | | | | | | |
| 7 | 2.32182 | 1.97231 | 2.07348 | | | | | | |
| 8 | 2.94239 | 2.14457 | 3.05344 | | | | | | |
| | ======== | ======== | ======== | | | | | | |

IV/A-3 CONCENTRATION INDUSTRIELLE

TABLEAU NO 6

TABLEAU RECAPITULATIF DES INDICES L

PAYS : DANEMARK PAGE 1
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES

| VARIABLES | 1968 INDICES N•M | 1968 INDICES LN•M | 1968 INDICES LS | 1969 INDICES N•M | 1969 INDICES LN•M | 1969 INDICES LS | 1970 INDICES N•M | 1970 INDICES LN•M | 1970 INDICES LS | 1971 INDICES N•M | 1971 INDICES LN•M | 1971 INDICES LS | 1972 INDICES N•M | 1972 INDICES LN•M | 1972 INDICES LS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 CHIFFRE D'AFFAIRES | 6 | .43621 | .52952 | 5 | 1.26708 | 1.53086 | 5 | .95406 | 1.06168 | 2 | .69697 | .69697 | 4 | .78798 | .88019 |
| 02 EFFECTIF | 2 | .56364 | .56364 | 4 | 1.77075 | 2.13946 | 4 | 1.53485 | 1.80241 | 2 | .93393 | .93393 | 2 | .98361 | .98361 |
| 03 MASSE SALARIALE | 2 | .52778 | .52778 | 2 | 1.87500 | 1.87500 | 2 | 1.85000 | 1.85000 | 2 | 1.11364 | 1.11364 | 2 | .94231 | .94231 |

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CONCENTRATION INDUSTRIELLE

TABLEAU NO 4

TABLEAU RECAPITULATIF DES INDICES L

PAYS : DANEMARK
INSTITUT : AARHUS SCHOOL OF BUSINESS
SECTEUR : APPAREILS ELECTRO-DOMESTIQUES(NICE 376)
ENTREPRISES :

PAGE 2

| VARIABLES | ANNEE 1973 INDICES | | | 0 INDICES | | | INDICES | | | INDICES | | | INDICES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N: M: | LN*M | LS | N: M: | LN*M | LS | N: M: | LN*M | LS | N: M: | LN*M | LS | N: M: | LN*M | LS |
| 01 CHIFFRE D'AFFAIRES | 4 | 1.00011 | 1.13884 | | | | | | | | | | | | |
| 02 EFFECTIF | 4 | 1,10332 | 1.18473 | | | | | | | | | | | | |
| 03 MASSE SALARIALE | 2 | 1.17241 | 1.17241 | | | | | | | | | | | | |