The Industrial Institute for Economic and Social Research

Annual Report 1969

and 1939—1969 in retrospect

INDUSTRIENS UTREDNINGSINSTITUT

THE INDUSTRIAL INSTITUTE FOR ECONOMIC AND SOCIAL RESEARCH

is an independent non-profit research institution, founded in 1939 by The Swedish Employers' Confederation and The Federation of Swedish Industries.

Objectives

To carry on research into economic and social conditions of importance for industrial development in Sweden.

Activities

The greater part of the Institute's work is devoted to long-term problems, especially to long-term changes in the structure of the Swedish economy particularly within manufacturing industry. This also includes continuous studies of the development of private consumption in Sweden and projections of demand for various products. Research results are published in the series issued by the Institute.

Along with the long-term research work the Institute carries out investigations concerning special problems and performes certain services to industrial enterprises, organizations, governmental agencies, etc.

Board

Marcus Wallenberg, chairman
Sven Dahlberg
Ingmar Eidem
Curt-Steffan Giesecke
Tryggve Holm
Nils Holmström
Christer Höglund
Axel Iveroth
Eije Mossberg
Lars Nabseth
Sverre Sohlman
Erland Waldenström
Lars Wirström

Staff

Director: Lars Nabseth
Scientific adviser: Ragnar Bentzel
Secretary: Lars Wohlin
Treasurer: Ruth Wiklund-Ellerstad

Other staff members and individuals engaged on special studies (31.12.1969):

Kate von Arnold
Leif Aronsson
Villy Bergström
Jan Bröms
Alf Carling
Carl Johan Dahlman
Sune Davidsson
John Ekström
Gunnar Eliasson
Göran Eriksson
Johan Facht
Marianne Frisell
Ulf Granérus
Odd Gulbrandsen
Gunnel Gunnarsdotter
Siv Gustafsson
Margareta Holter
Staffan Håkanson
Gun Johansson
Anders Klevmarken
Lars Kritz
Assar Lindbeck
Kerstin Lindh
Lars Lundberg
Torsten Löfgren
Alice Nilson
Wera Nyrén
Lennart Ohlsson
Olle Renck
Gunnar Du Rietz
Rolf Rundfelt
Bengt Rydén
Per Silenstam
John Skår
Otto Stelling
Birgitta Swedenborg
Åke Sundström
Ulla Wounder
Yngve Åberg
Eva Öhman

Address:
Industriens Utredningsinstitut
Storgatan 19, Stockholm, Box 5037, S-102 41 Stockholm 5, Sweden
Tel. 08/63 50 20

ANNUAL REPORT 1969

and 1939-1969 in retrospect

THE INDUSTRIAL INSTITUTE FOR ECONOMIC AND SOCIAL RESEARCH

Stockholm 1970

9. 69. 10.000

PREFACE

The year 1969 has been the most productive year in the Institute's now 30-year old history. This is due above all to the fact that the big project on economic growth in Sweden during the past 100 years has been virtually completed. This study has been carried out concomitant to similar projects in France, Italy, Japan, Great Britain, the United States and West Germany. A comparative study of the factors which underlie growth in the participating countries still remains.

Studies of economic growth in Sweden, with particular emphasis on the sources of industrial progress, have always been of central importance to the Institute. Needless to say, it is only by maintaining the growth of production in our economy and the competitiveness of our firms that we can meet demands for such things as improving our environment and doing more to help the developing countries. One important factor determining industrial progress would be institutional conditions which facilitate the establishing and development of new firms, which may involve guarding the existence of family enterprises. In order to study some of these questions work has recently begun on a project which deals with the formation and discontinuation of firms in Sweden in the postwar period. This project may be seen in part as a sequel to the study, published in the early 1950's, which treated Swedish industrial entrepreneurship during the interwar years.

Last year the work associated with the Long-term Survey for 1970-1975 entered a more active phase. This work will engage a considerable portion of the Institute's resources in the current year, too. The Institute's work on behalf of the governmental Long-term Surveys commenced in the late 1940's in connection with the Marshall Aid. Since then we have made contributions, especially through our analyses and forecasts of the development of industrial production and private consumption, which have resulted in several publications. We hope that the work now being carried out will serve as a useful basis for formulation of economic policy in our country and for long-range planning in industrial enterprises.

During the past 30 years the Institute has sought to increase knowledge of how the economy functions and of those forces which create prosperity. It was clear at the outset to the founders of the Institute that

the research done could have an impact on different sections of the community only if it were done in a detached and scientific manner. This view has guided the Board's outlook during the past three decades. In the decade ahead there will be an even greater need for this kind of research. Therefore we are convinced that the Institute will continue to have an important function.

Stockholm, March 1970

M. Wallenberg

CONTENTS

Page

THE INDUSTRIAL INSTITUTE FOR ECONOMIC AND SOCIAL RESEARCH

1939-1969

By Dr Lars Nabseth

The Industrial Institute for Economic and Social Research was founded in February 1939. A career of thirty years is scarcely long enough to justify any spectacular retrospections. On the other hand it is not so short, that the Institute should have special reason to remind of or justify its existence. During these thirty years the Institute has undoubtedly won respect in Swedish social and economic research. Nonetheless, given the background of the past thirty years and the new decade ahead, a brief account of what the Institute has done so far and what it may be expected to do in the future might be called for.

Why was the Institute formed?

The formation of an Industrial Institute for Economic and Social Research (IUI) originated in a feeling among many leading industrialists that the viewpoints and problems of the business community were not adequately presented in public discussion of economic policy. It was reasoned that there was a need for more factual information in the discussion of the problems of industry. At the same time, however, there was an awareness that such information must be based on scientific research if it were to be respected. This meant that industry would also have to heed the facts that the new institute would present. In order to emphasize the Institute's scientific and independent character, it was detached at the outset from the founding organizations, the Swedish Employers' Confederation and the Federation of Swedish Industries, and given its own Board of Directors. The Institute was therefore made an independent, non-profit making body.

The emphasis on research has become increasingly accentuated over the years. At first, and especially during the war, a large part of the Institute's resources was claimed by the rendering of services and the regular collecting of statistics. However, the latter activity has virtually ceased, one reason being that the work of preparing the industrial production index has been taken over by the National Central Bureau of Statistics,

while the rendering of services to the founding organizations has assumed relatively lesser dimensions. By far the preponderant part of the Institute's resources is now devoted to professional research. One requirement which has thereby become of increasing importance to the Institute is that the projects authorized by the Board of Directors shall also be published when an investigation is completed. This means that the Institute does not undertake contract work. The other considerations we must bear in mind prior to publication are, first (and foremost) the criterion of quality; and second, the requirement that the information provided by firms or individuals should be treated confidentially.

Our activities have increasingly come to resemble those which are pursued at different research institutions affiliated with universities and professional schools. One of the Institute's aims has been to more specifically direct its research towards problems which are thought essential for industrial development in our country. Principal interest has attached to such economic and social questions which are deemed relevant for the long-range development, whereas cyclical problems have been given less attention.

What kind of research has the Institute done?

What are the fields of inquiry that have engaged the Institute during its now thirty years of existence? It was clear at the outset that the fields worth considering should have an important bearing upon the general economic policy debate in Sweden or serve firms as a basis for their long-term planning. The first major research project had to do with the specific problems of the northern region of Sweden, about which studies were published both during and immediately after the war. It goes without saying that the Institute here concerned itself with a problem that had and still has interest for the debate in our country.

One field which the Institute early came to devote attention to was the structure and competitive potentials of different industries in Sweden. Studies were published in the late 1940's of the textile, footwear and brewing industries, and during the 1950's of the engineering and chemical industries. This research field was given added emphasis during the 1960's, partly in consequence of the Institute's work for the government Long-term Surveys and partly because of the growing government interest in the structural problems of industry. We have accordingly published - or are en-

gaged in - investigations relating to the iron and steel industry, paper and pulp industry, the shipbuilding, engineering and chemical industries.

As to the governmental Long-term Surveys, which begun in connection with the Marshall Aid in 1947 and have since been made at 5-year intervals, the Institute has made significant contributions. The head of the Institute during the 1940's, Professor Ingvar Svennilson directed the work on behalf of the first Long-term Survey. The Institute's head in the early 1950's, Dr Jonas Nordenson, was a member of the committee that was specially appointed by the Ministry of Finance for the second Long-term Survey. Since then the Institute's staff has continually taken active part in these inquiries. In particular, we have undertaken the analysis of future development of the manufacturing industry and its subgroups and trends in private consumption. Such an analysis for the 1970's is now under preparation.

Research into the development of private consumption in Sweden got under way in connection with the extensive study of private consumption from 1931 to 1965, which was headed by Professor Ragnar Bentzel and published in the mid-1950's. Based on traditional demand theory, this study brought up to date, revised and reclassified the primary statistical data that were formerly available. Since then a great number of institutions, firms and individuals have asked for this material and have wished to have it brought up to date. Indeed, we have revised and renewed the forecasts at regular intervals and we have also made special studies of several subgroups of consumption, such as travels and textiles. Special interest has been devoted to the demand for cars, a subject on which books and papers have been written by the head of the Institute during most of the 1950's, Dr Jan Wallander.

Questions relating to the labour market have recurrently been studied. Studies dealing with the housing conditions of industrial workers and the migration from the rural areas were already published in the 1940's. Subsequent studies have gone into such matters as development of the white-collar work force, labour mobility and the effects of pay increases on manufacturing industry. Current projects in this field are concerned with pay trends for salaried employees and the problems of wage drift.

Another important part of research has been focused on the sources of industrial development in Sweden. Professor Erik Dahmén's study of inter-war development, with its analysis of formation and discontinuation of business firms during this period, was the first major work in this field. The Institute has just commenced work on a new study of these problems

during the postwar period. The significance of financial factors and taxation for production and investment is another field that we have sought to illuminate in various contexts. Here the ability of firms to generate funds internally has been exhaustively treated. Inasmuch as industry plays a very important role in the economy, the questions considered pertinent to its growth have been given a broad interpretation in the research programme. Thus in the 1950's a series of studies was initiated under the common heading, "lines of development in the Swedish economy", which treated such subjects as population trends, transportation problems, the wholesale and retail system, and the income distribution. A similar project of equally great scope was recently concluded with the publication of a number of books that studied different aspects of economic growth in Sweden during the past 100 years. This project forms part of a joint international research endeavour to study and compare causes and rates of growth in a number of advanced industrial countries.

Agriculture and transportation are among those other sectors of the economy that have been covered fairly extensively. The research programme has also included a doctoral dissertation on the expansion of the public sector by Dr Erik Höök, now Director of Planning in the Ministry of Finance.

Notable research achievements

After thirty years of research, it may be in order to ask: In what particular fields can the Institute claim an part in the advancement of economic knowledge and the improvement of information guiding public economic discussion in cur country? It is no exaggeration to maintain that where studies of the structure of industry and of private consumption are concerned, the Institute has been in the forefront of Swedish research. In many respects, too, the previously mentioned study of industrial entrepreneurship during the inter-war years represents a pioneering effort that is frequently referred to. Also with respect to transportation studies the Institute, despite the relatively limited scope of its research in this field, has provided a valuable basis for public discussion. Maybe somewhat surprising, with regard to the current debate on income distribution, the Institute's study of this subject, which was published in the early 1950's still remains both methodologically and empirically one of the most comprehensive studies ever undertaken on this subject in Sweden. To some extent the same may be said of the book on the economic role of advertising, which was published in the early 1960's.

Among research fields that the Institute may be said to have neglected in the past, questions of foreign trade are particularly noticeable. The inquiries undertaken during the 1940's and 1950's were highly national in their character. But during the late 1960's the research programme has increasingly considered these issues. This has manifested itself in two ways: first, a growing number of studies on foreign trade; and second, a greater international orientation in each research project. An example of the latter is the study, published this year, of future prospects for the Swedish shipbuilding industry, which is essentially an analysis of the international market and the competitive situation of the world's shipyards.

The Institute as an educational institution

An important externality of the Institute's activities has been the educating of university graduates in applied research. Judging from the present occupations of ex-staff members, the training obtained at the Institute has been greatly appreciated by firms, industrial organizations, banks, academic institutions, and government ministries and agencies. As for the training of researchers, the Institute's aspirations to scientific standards have been greatly rewarded. On the Institute's publications during the past thirty years 26 have qualified as doctoral dissertations. In addition, a considerable number of works have been submitted to establish eligibility for professorships.

All told we have now put out 153 publications, with the record output for a single year, 11 publications, being attained in 1969.

The Institute now has about 35 full-time employees, more than 20 of whom are university graduates. An important asset in our activities is the team spirit and the teamwork that is behind the preparation of every research report. Thus, every person in charge of a project benefits from critical viewpoints in seminars and informal discussions from other members of the staff.

The Institute's work in the 1970's

In my opinion future must satisfy two vital criteria apart from scientific rigour. We must deal with problems of relevance to general economic growth and we must choose projects where we are especially confident about our ability to carry them out.

We have always found it natural to deal with topics pertinent to the Swedish debate on economic policy; research for its own sake has never been a guiding motive at the Institute. This means that our research projects have been of a mainly empirical nature. We concern ourselves with what the Anglo-Saxons call "applied economics". This is not to suggest that we are not concerned with theoretical and methodological problems, but rather that these interest us only insofar as we think they improve our ability to analyze and measure economic events. This is another way of saying that our comparative advantage lies for the most part in empirical studies. Over the years we have developed a research machinery that is geared to projects of this kind. Moreover, the good contacts we have established with Swedish manufacturing firms have given us special qualification to undertake studies which relate to their activities.

As to the direction of the Institute's future research, I think it will bear an increasingly international imprint. This will apply not only to the nature of projects but also to the manner of their execution. Already we are engaged in two ambitious international projects which involve extensive contacts with counterpart research institutions in other countries. The one project has to do with factors underlying economic growth in different industrial countries, the other with causal factors behind the diffusion of new technology between and within a number of industrial countries. It is safe to assume that joint projects of this kind will become even more common in the future. The prospects for intensified international cooperation seem especially promising if counterpart institutes evolve in the other Scandinavian countries.

Our research has to a great extent been concerned with assessments of future trends and making predictions about them. The increased interest in futurology will undoubtedly be reflected in the Institute's research, too. Up to now, however, futurology has been mainly identified with the very long run, e.g., up to the year 2000. Even though the Institute's future studies may well adopt a longer time perspective than in the past, it is not likely that we are going to peer into the crystal glass that far ahead. This is connected with our ambition to arrive at a deeper understanding of relationships, which is primarily based on analyzing events that have already occured. But given the scientific methods now available to us, such analyses can scarcely provide evidence for the long-term assessments at which futurology aims. As we see it, technological advance is

much too big an imponderable to admit of making forecasts for remote periods. Forecasts of this kind involve "guesstimates" which, however, sophisticated they may be, are alien to the Institute.

One type of studies for which many professional economists argue a greater need in the 1970's is the so-called effect studies. The idea is that by analyzing the impact of different economic policy measures the understanding of economic events is enhanced. The Institute has previously engaged in such research in connection with the effects of rent controls and the agricultural price controls. At present the effects of transportation regulations are being examined. Further studies of this kind will presumably be made in the future.

As is true of economic research the world over, we are making increased provision in our research for mathematical statistics and the use of computer technology. At the same time, however, this poses a greater challenge to our ability to translate research findings into a language comprehensible to the majority of interested laymen. The results of research must not be presented in a way which restricts their comprehension to a very small group of professional economists. In addition, there will be a greater need to present our publications in foreign languages, especially English.

On the eve of this new decade, it is my hope that the team spirit which has characterized the Institute's research activity to date will be preserved, since this method of working has proved to be very effective so far. By way of conclusion, I should like to say that there is every reason to believe that the type of investigations carried out by the Institute will continue to have great value for the economic-policy debate during the new decade.

PUBLICATIONS ISSUED

Problems of the Shipbuilding Industry

The Institute's study of future prospects for Swedish shipbuilding was commissioned by an ad hoc government committee of inquiry and completed in 1969. It is published in a book under the title, "Problems of the Shipbuilding Industry - Demand, Competition, Future Prospects", written by Dr John Ekström. The book concludes with an assessment of the growth potentials of the Swedish shipbuilding industry that was jointly written by Professor Ragnar Bentzel, Dr Ekström and Dr Lars Nabseth.

The Institute's report evaluates future prospects on the basis of an analysis of future demand for ships on the world market, factors of international competition and productivity in Swedish shipbuilding. One of the appendices to the report is a forecast of world merchant tonnage requirements from 1969 to 1985 drawn up by Dr Göran Norström. Another appendix is devoted to a forecast of profitability and financing in six Swedish shipyards up to 1975, which was prepared by Dr Gunnar Eliasson. Thus, both the long-term and short-term aspects are considered. Apart from certain reservations, the former is rated fairly optimistically; the latter is obscured by the capacity problems which may follow in the wake of the Suez crisis.

During the next few years the world's shipbuilding industry will have unusually high orders. In mid-1969 about 55 million gross tons were on order, of which 30 million tons pertained to tankers. Put in relation to the operating tanker fleet the order book came to no less than 45 percent.

Employment in the shipbuilding industry is thus guaranteed for at least three years ahead, and for this reason the shipyards need not be overly anxious to contract for new orders at unfavourable prices. However, the many additions to the merchant fleet during 1969-1971, and particularly of giant tankers, will probably cause demand to fall sharply.

The world's shipbuilding capacity rose steeply during the 1960's. This is especially true of Japan, where some brand new yards have been installed solely for building heavy tonnage. A few of these were ready just in time to cope with the Suez boom of 1967. But capacity has also been greatly enlarged in Europe as a result of modernization and structural change.

The forecasts that have been made point to a continued increase in capacity up to 1975 by nearly 20 percent or not quite 3 percent per annum. It may then be asked: To what extent is this capacity going to be utilized? The answer depends on how future demand for ships is assessed. Diagram 1 illustrates the trends anticipated in this report. For the period from 1970 to 1975 as a whole, both the Swedish and the (more optimistic) Japanese forecasts indicate that demand cannot be expected to absorb production capacity to the full. The fact that the analysis points to excess overall capacity is, however, of limited interest; the market for ships is much too differentiated to admit of simple conclusions.

A great many econometric studies have shown that the so-called ship-cycle is rigidly ruled by changes in freight rates. The essential aspect of the cycle is the simple fact that not enough ships have always been available when they are most needed, whereupon they are ordered in such quantities that a glut subsequently arises. Even under "normal" conditions this has meant that the majority of orders for ships are placed during periods with high freight rates. The business cycle for ships has consisted of brief phases when demand is high (and the prices of ships rise) and long periods when few new ships are ordered (and freight rates are low). It is only natural that the effects of this market mechanism should be strongly accentuated by "external" events such as the closure of the Suez Canal.

The market for ships during the 1950's and 1960's is illustrated in Diagram 2, where curves for tanker orders and oil freight rates have been plotted. It will be seen that the cyclical pattern follows the one delineated above, with a sharp upsurge of orders attendant upon the rise in freight rates touched off by the Korean War and the two Suez crises

The Suez crisis of 1967 did not send freight rates skyrocketing in the same way as in 1951-1952 and 1956-1957. One reason, presumably, was that dependence on the Suez Canal had lessened in the meantime. None the less, incoming orders soared and have held longer at a high level than during the two previous peaks. There may be cause to note the presence of two elements in the latest cyclical upswing: first, the shipowners have managed this time to bargain extensive credits for themselves at low interest from the shipyards; and second, the prices of ships have not risen appreciably (at least not until 1969). That is due in no small measure to large-scale subsidies of trade credit by governments of the world's shipbuilding countries, not least Japan. The restraints on demand have therefore been weaker in this upswing than in the past.

Diagram 1. Estimated scrapping and losses, and new ships requirement for world merchant fleet, 1969-1985

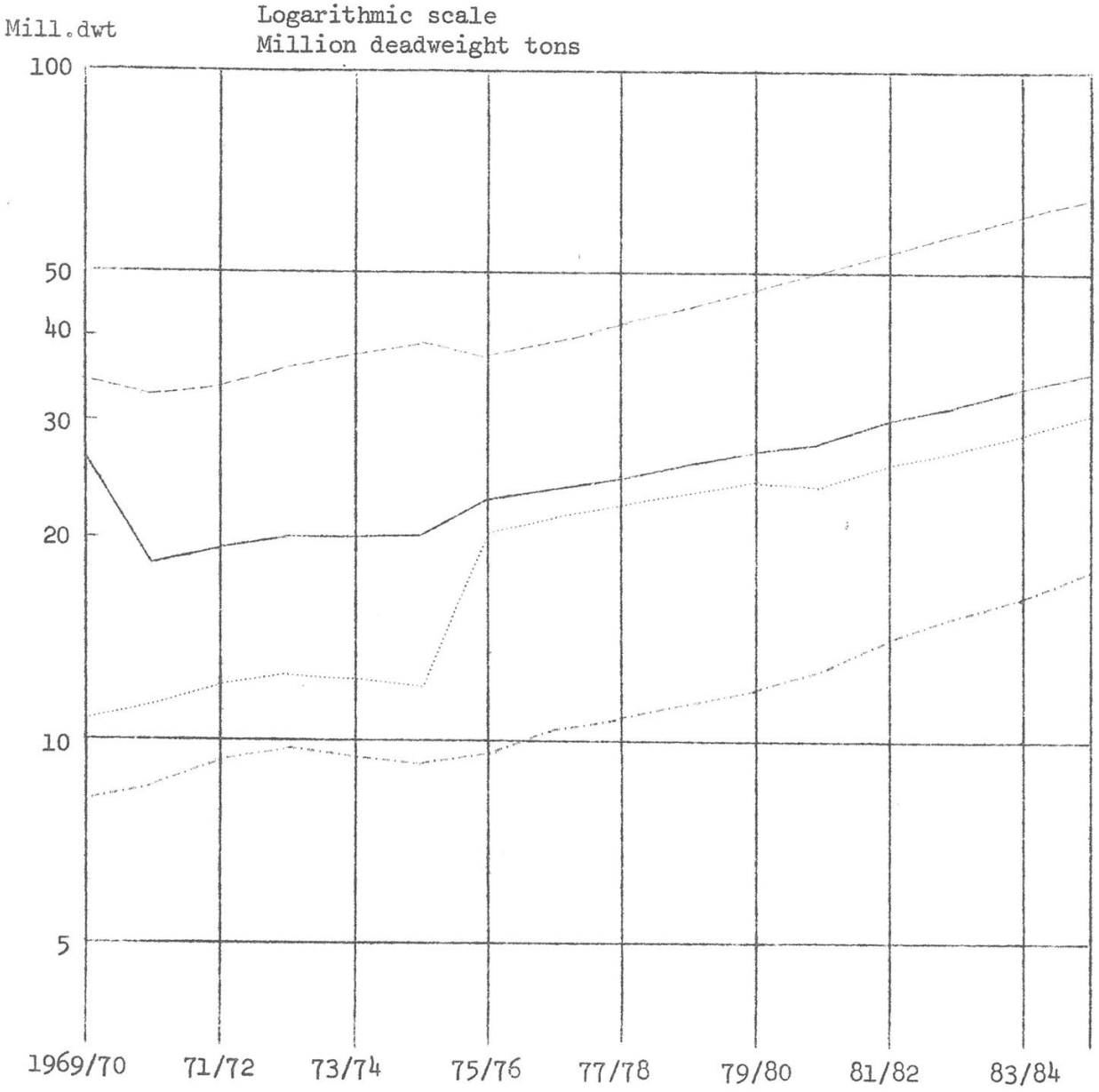
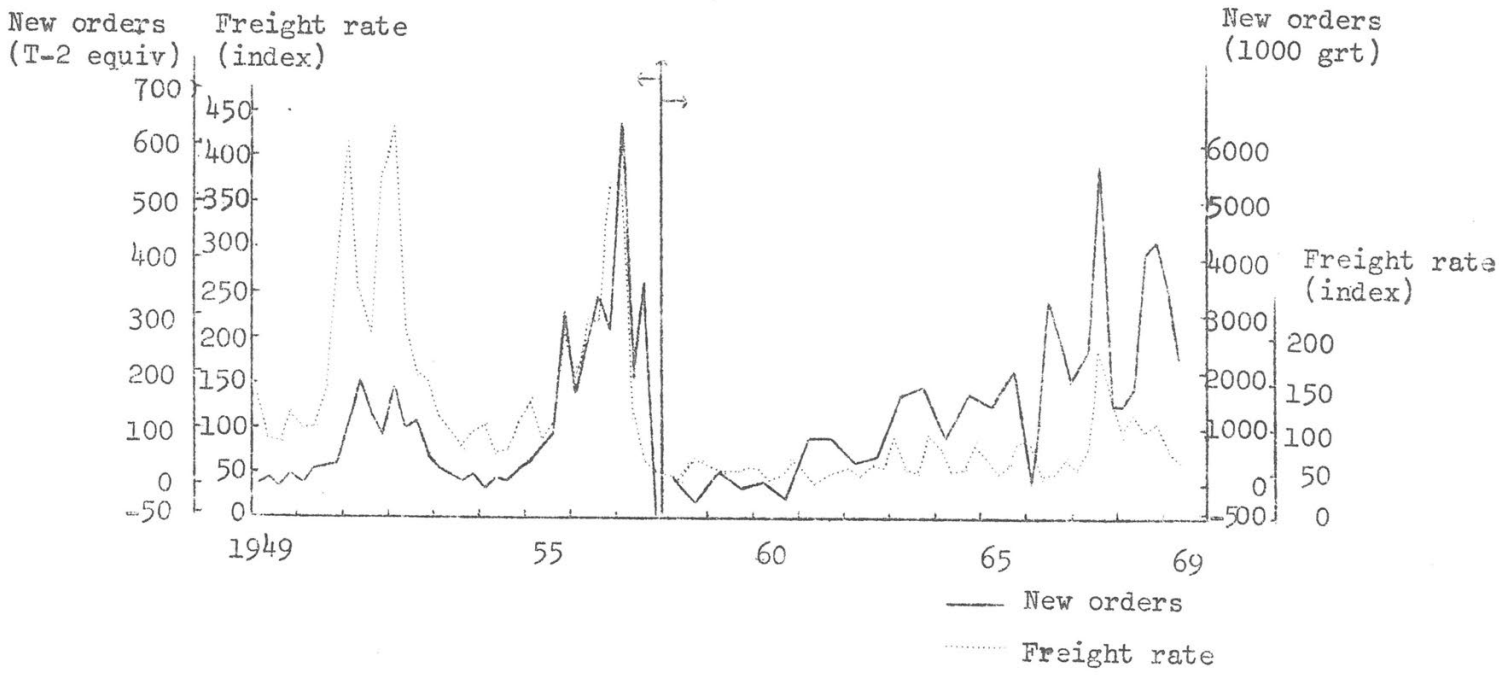


Diagram 2. Orders for tankers and freight rates for oil, 1949-1969



Sources: Z. Zannetos, The theory of oil tankship rates, Cambridge 1966.
Lloyd's Register of Shipping.
Norwegian Shipping News No. 2A, 1969, and No. 13, 1969.

Freight rates already hit their peak in the third quarter of 1967 and their downward trend since then is apparently still continuing. Although it is difficult to judge how far they will fall, it will be seen from the diagram that the lowest point keeps getting lower than on previous occasions (1949, 1954 and 1961). That is because an excess of tonnage pushes freight rates down towards the level indicated by variable costs minus the costs of laying up marginal tonnage and the ships that end up on the margin are getting increasingly larger and more modern (with lower costs per ton). Judging from the known delivery schedules for 1970 and 1971, the available tanker tonnage will increase at least at the same rate as in 1969 (13 percent). The transport requirement is not likely to increase at the same high rate. It is therefore very probable that excess capacity will arise during the next few years, which according to past cyclical patterns will lead to laid-up tonnage, falling freight rates and weak demand for new tonnage.

Economic Growth in Sweden, 1861-1965

The Institute's study of economic growth in Sweden is part of an international research project which comprises similar studies in the United States, Great Britain, West Germany, France, Italy and Japan. The project, financed in part by the Ford Foundation through the Social Science Research Council in the United States, aims at a comparative analysis of long-term economic growth in these countries. Special emphasis is put on identifying the determinants of growth and showing how these have varied from time to time.

How fast the economy of a country expands may be said to depend on the input of factors of production and on their productivity. Changes in factor inputs depend in turn on changes in the supply of labour and capital and also on changes in demand for goods and services. This three-way division of causal factors behind the growth process has been selected as a general point of departure for this study.

The findings of this research are presented in five reports which the Institute published in 1969; these deal with separate problem areas within the framework of the project and are described below. The problems analyzed in these sub-studies tie in with the aforementioned division of causal factors. The Institute plans to publish a sixth volume containing a summary analysis and a presentation of the main findings. This work is being performed by Professor Ragnar Bentzel, who is also in charge of the whole research project.

Production and Productivity in Sweden, 1861-1965

The series on economic growth includes a study of how production and productivity have developed not only in the economy as a whole but also in its component sectors. This study was published under the title, "Production and Productivity in Sweden, 1861-1965", written by Dr Yngve Åberg.

The output of a firm or group of firms is determined by inputs of real capital and labour and by technical and organizational factors. To understand the production process it is therefore necessary to know the relationship between these two factors of production and the volume of output as well as the stability of this relationship over time. Estimates of similar relationships or production functions provide a method which permits closer analysis of changes in production in one sector or in the whole economy.

Estimates of this kind presuppose the availability of data on changes in the volume of output, employment and the quantity of capital. The most difficult problem here is to obtain a measure of capital. This is chiefly because estimates of production functions are concerned with measuring employed capital rather than the existing capital stock. In the present study this problem has been resolved by using capital income, in constant prices, in place of the capital stock to measure capital input.

Once the production relationships are estimated, it becomes possible to calculate how much of the annual increase in output has been contributed by capital and labour, respectively. These two contributions, taken together with the contribution made by changes in technical and organizational factors (the technology factor), account for the total increase in output. Such calculations have been made for the manufacturing industry for the interwar and postwar period, and are set forth in Table 1.

The table shows that labour contributed much more to the growth of output during the interwar period than during the postwar period. This tendency holds not only for all manufacturing but by and large for every single industry as well. Similarly, increased inputs of capital did much more to raise output during the interwar period than in the postwar years. This tendency, however, is not as pronounced as for labour, nor is it equally conclusive when one goes down to industry level.

For manufacturing as a whole, however, the table shows that the increase in output due to technological advance was more significant in the postwar period than in the interwar years.

Table 1. Contributions of capital, labour and technological advance to increased output of manufacturing, 1922-1939 and 1947-1964

Period	Annual increases in output	Contributions by		
		capital	labour	technological advance
1922-1939	5.36	1.82	2.06	1.48
1947-1964	4.26	1.75	0.45	2.06

The production contributions specified in Table 1 are estimated on the assumption that returns are unrelated to the scale of production. Thus if no changes are assumed in technology, an increase of both capital and labour by (say) one percent will increase output by one percent. But in order to indicate the significance of the scale of production, the production function has also been estimated without this assumption. It turns out that manufacturing realized no economies of scale during the interwar period but only during the postwar period.

Lastly, with the computed production function used as a starting point, the contribution of labour to output has been calculated and the resultant value compared with wages. Estimates of this kind were made for the postwar period for the manufacturing industry and from as far back as 1870 for the whole economy.

According to these estimates the value of the marginal product of labour has been approximately equal to its wage. In other words, the market situation seems to have been such that, on the average, labour has been neither overpaid nor underpaid in proportion to its productivity. However, for the whole economy productivity of labour exceeded its wages in the interwar period, whereas the contrary holds true in the postwar period. This result must be seen in the light of the economic situation prevailing in the two periods. Between the wars, unemployment on a fairly large scale served to hold down wage increases to the benefit of capital. By contrast, full employment during the postwar period has pushed up wages so much as to make labour somewhat overpaid in relation to its productivity at the expense of capital.

Capital Formation in Sweden, 1861-1965

From 1861 to 1965 gross investment more than tripled its share of the Swedish national product. The most expansive areas of investment have been the public sector and manufacturing, with housebuilding also bulking large during the interwar period. "Capital Formation in Sweden, 1861-1965", written by Dr Lars Lundberg, analyzes the factors that have effected the volume and distribution of capital formation between sectors and which therefore explain the development referred to above. This book has sought to clarify those factors which have determined the demand for investment and the supply of savings at different times of the period.

It is natural to expect a rising gross investment ratio in an economy which is transforming from preindustrialism into a stage characterized by rapid economic growth and extensive structural change. The upward trend of investment ratio in Sweden, especially conspicuous after World War I, is matched by an accelerating growth of the national product. However, it seems that variations in investment activity between segments of the period for manufacturing, agriculture and transport are mainly related to differences in the rate at which labour is replaced by capital and not to differences in the growth of output. Moreover, it is possible to discern a clear connection in the long run between the rate of change of factor proportions and changes in the relative price of capital and labour.

In spite of low investment activity during the earlier part of the period, domestic savings were inadequate: prior to World War I Sweden imported capital on a large scale. At times this borrowing from abroad accounted for nearly one-fourth of domestic investment. The inflow of capital must be seen against the background of Sweden's institutional facilities for providing credit at that time, which were much too undeveloped to meet the demand for long-term capital on a large scale, especially for railway construction. The prewar development of institutions which functioned as financial intermediaries between savers and investors must therefore have played a major part in making increased investment possible.

The long-term increase in the gross savings share of national income can be largely attributed to an upswing of savings by the public sector. This development is due in turn to the sector's having enlarged its share of incomes, especially at the expense of households, but also to the rising savings ratio of the public sector. Households also appear to have increased their long run savings ratio during the period.

The Supply of Labour in Sweden, 1870-1965

Changes in the supply of labour and an analysis of the underlying factors are the subject of a monograph written by Mr Per Silenstam with the above-named title.

The number of gainfully employed as shown by the population censuses is used to measure the size of the labour force. According to this measure the labour force grew from 1.3 million in 1870 to 3.4 million in 1965. Obviously, this upswing mainly reflects a population increase, but there are several factors that have had great bearing upon changes in the size of the labour force. In some cases shifts in the distribution by age and marital status have had considerable impact. In addition there is the effect of non-demographic factors, which is manifested by the varying proportions of gainfully employed among different demographic groups who are homogeneous with respect to sex, age and marital status. Consequently, a major problem of the investigation was to identify the factors that were behind changes in rates of labour force participation by different groups.

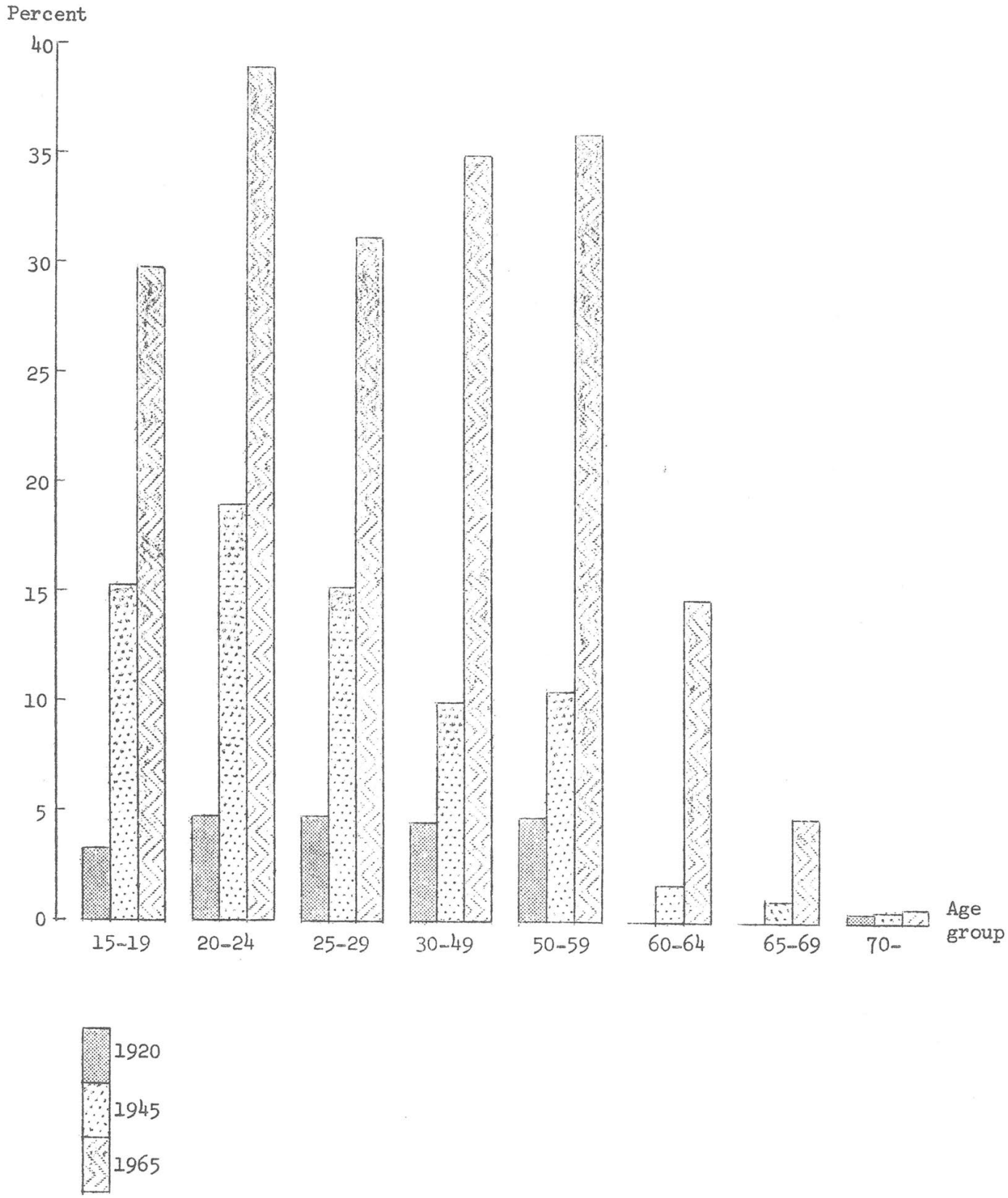
Before 1920 the available statistical data does not permit any penetrating analysis of changes in the number of gainfully employed. Most of the increase during this period is related to demographic factors, but it appears that reduced underemployment is also reflected in the statistics in the form of higher rates of labour force participation.

After 1920 the demographic factors, chiefly population increase, have tended to increase the number of gainfully employed men, but this tendency is partly offset by declining participation rates for younger and older men. In the case of women, demographic factors have not had this effect. That is because the effects of increased population have been neutralized by a shift in the marital-status distribution towards a larger proportion of married women, for whom the labour force participation rate is lower than for unmarried women.

On the other hand, the number of gainfully employed women has increased sharply because a great many more married women have entered the labour force.

The proportion of gainfully employed among married women aged 15 to 64 rose from 4 percent in 1920 to 33 percent in 1965 (cf. Diagram 3). A large part of the report is devoted to an analysis of this trend. Various factors have served to augment the supply of married women on the labour market, such as higher pay, fewer children per family, altered attitudes and a diminished need of labour in the home. Parallel with this development on the supply side, structural changes on the demand side have made the services of women more eagerly sought on the labour market. This has intensified the labour force participation rate of married women.

Diagram 3. Proportion of gainfully employed married women in 1920, 1945 and 1965



Economic Policy in Sweden and its Effects

An essential condition of balanced economic growth is that demand keeps pace with the supply of goods and services. One of the main concerns of the book, "Economic Policy in Sweden and its Effects", written by Mr Villy Bergström, was to find out how economic policy has affected the development of demand in Sweden. The focus of interest is on the period after World War I. The approach adopted was to measure the development of some central variables which can be regarded as independent of the national product. Thus estimates were made of the public sector's share of GNP, of the investment share accounted for by public expenditures, and of the tax levy and its distribution by sectors. In the field of monetary policy, the volume of means of payment in circulation was measured in relation to GNP.

At the beginning of the 1930's the public sector started to increase its share of GNP, and this has continued at a steady pace up to the present time. If transfer payments from the public sector are counted in the measure, the increase during the period under review rages from about 16 percent to more than 40 percent (see Diagram 4).

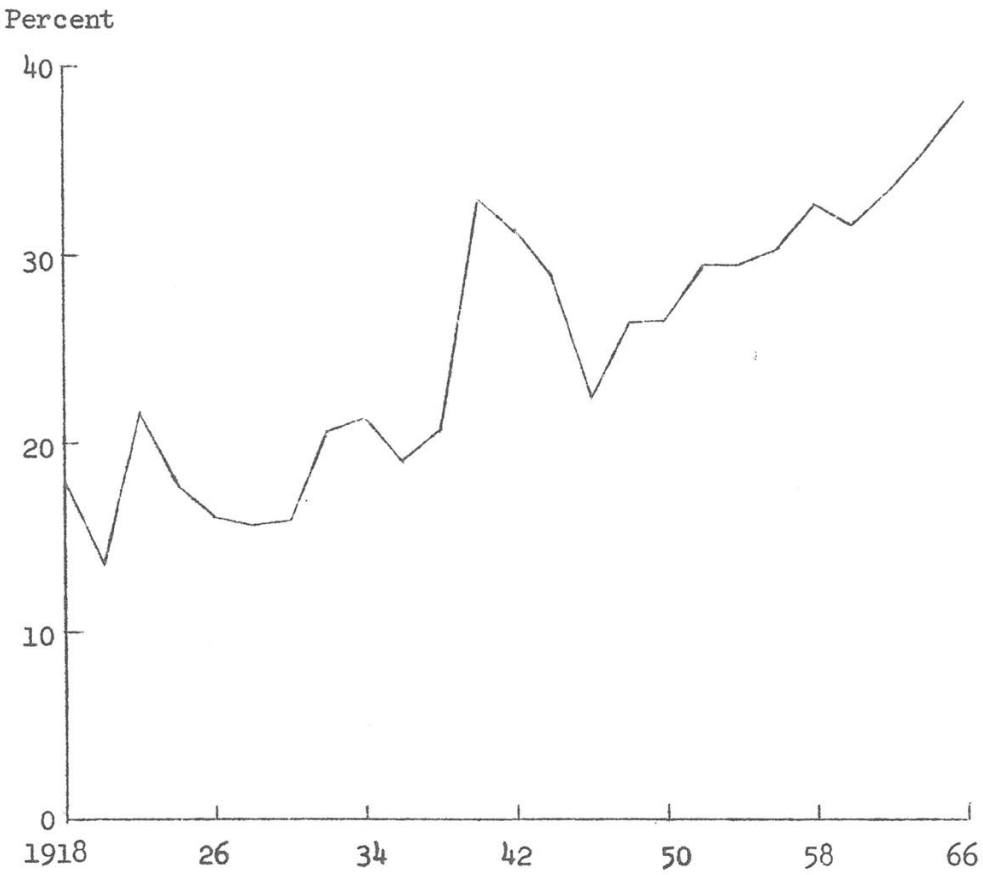
With respect to monetary policy it is shown that the quantity of money circulating in the economy gradually fell off from 1930 to 1945. In other words, liquidity tended to rise and interest rates to fall (except for the outbreak of war in 1939). A long period of rising velocity of circulation and interest rates then commenced, which lasted up to the end of the investigated period in the mid-1960's.

For the interwar period the study found that it was not until the early 1930's that economic policy began to be more systematically used as an instrument to stimulate demand and employment. As far as the postwar period is concerned, it was not until after 1958 that economic policy fashioned a combination of measures which simultaneously slowed down domestic demand and stimulated the growth of production capacity.

Foreign Trade and Economic Growth in Sweden, 1871-1966

In the evolution of Sweden from an underdeveloped country compared with the rest of Europe in the mid-19th century to what may well be Europe's most advanced economy 100 years later, foreign trade has played a salient role throughout. The shifting character of foreign trade in this growth process receives special attention in the book, "Foreign Trade and Economic Growth in Sweden, 1871-1966", written by Dr Lennart Ohlsson.

Diagram 4. Expenditures of the public sector in percent of GNP, 1918-1966



Up to the beginning of the postwar period, the principal impact of foreign trade on economic growth in Sweden was by way of the income-generating effects of exports and the concomitant stimulation of general demand. This impact seems to have reached its peak during the period from 1871 to 1890, when foreign markets enabled Sweden to exploit and export resources of raw materials that could find no alternative uses within the country. However, the relative demand effects of foreign trade became much less in 1890-1913 than earlier, but owing to the concurrent shift of exports towards products with a higher value-added component, such as pulp, paper and machinery, exports came instead to have great impact on the structural development of industry during this period.

In consequence of the fairly slow growth of world trade during the interwar period, the growth of Swedish exports became so limited that the relative share of exports (and imports) in the economy during this period never again attained the prewar level. As a result the impact of foreign trade on general demand was also less than in the past. Nevertheless, foreign trade came to have considerable importance for Sweden's internationally favourable growth performance in that its external balance improved more than that of most other European industrial countries.

The postwar years of 1946-1966 diverged from earlier periods in several important respects. Full employment and inflation in Sweden suggest that the growth of production is no longer limited by the growth of demand but rather by the growth of production capacity. Accordingly, the impact of foreign trade on economic growth is judged to derive from its effects on productivity and capital formation within the economy.

Attempts have been made to estimate the productivity effects of foreign trade by inserting a term for import capacity in a traditional production function. This approach yields a quantitative estimate of the contributions made by foreign trade to the growth of output via its productivity effects (see Table 2). Since the magnitude of these contributions during each period is highly uncertain, the approach permits no more than a rank-order of contributions between the periods. It will be seen from the table that the productivity effects of foreign trade have been greatest both in absolute and relative terms during the postwar period. Naturally, this is due in part to the more efficient allocation of resources that has taken place following the retrenchments of foreign trade in the 1930's and the war years, but some of the credit must also be given to a better utilization of scale economies in production and to a faster adoption of new production technology as a result of relatively high wage level.

Table 2. Contributions of foreign trade to growth of output via productivity effects, 1871-1964

Period	Average annual growth of output (in percent)	Absolute and relative contributions of foreign trade (in percent)	
		Absolute	Relative
1871-1913	2.8	0.4	15
1920-1939	2.5	-0.0	- 2
1946-1964	3.4	0.6	18

Note. The relative contributions is obtained by dividing column 2 by column 1 (multiplied by 100).

The Economics of the Agricultural Sector

In Sweden there are few examples of a market as thoroughly regulated as the one for food products. Agriculture is shielded from foreign competition by high tariffs and is heavily subsidized in order to guarantee domestic production despite the relatively high costs which characterize Swedish farming.

The origins of this agricultural policy, the objectives that govern it, and the effects it may have had on the rest of the economy are analyzed by Professor Odd Gulbrandsen of the Agricultural College in Uppsala and Professor Assar Lindbeck of the Stockholm School of Economics in their book, "The Economics of the Agricultural Sector", published in 1969. The authors also propose alternative courses of action for agricultural policy consistent with retaining the fundamental goals of present policy.

Until the depression of the 1930's Swedish agriculture was relatively little protected against foreign competition. But in order to alleviate the social misery among farmers in that period, the government imposed restrictions on food imports and the same time granted subsidies to farmers in the form of domestic price supports.

Since then three goals have chiefly guided Swedish agricultural policy. The first is to assure the farming population an income level comparable to that of industrial workers. The second is to guarantee the production of enough food to meet the requirement of self-sufficiency in the event of war. The third goal is that resources should be used as efficiently as possible in the agricultural sector.

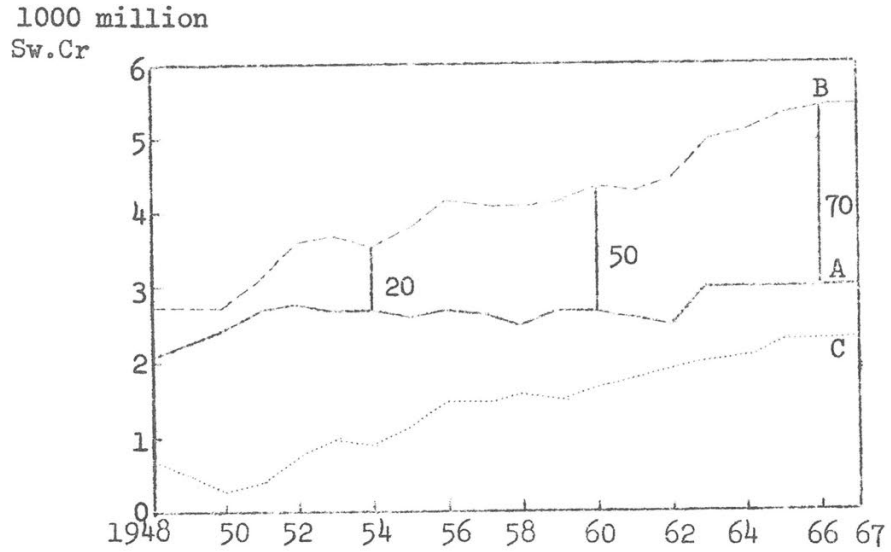
Of these three goals only the requirement of self-sufficiency has been achieved with any degree of success; indeed, one may even say that it has succeeded too well. Surpluses of Swedish farm products have occurred at regular intervals and been exported at world market prices far below the domestic prices.

However, agricultural policy as pursued has not realized the first goal, which has made for a steady decline in farm holdings and the number of people engaged in agriculture. Thus, the number of holdings in 1967 was less than 40 percent of that in 1944, and employment in agriculture was about 40 percent of the figure for 1945. Further, growth of productivity in the agricultural sector lags much behind that in the manufacturing industry. Labour productivity in the agricultural sector comes to about one-fourth of the average for other industries if value added by production is measured at international prices. In terms of domestic prices the differential is much narrower because of the considerably higher protection which agriculture enjoys on the average. The support to agriculture can be estimated by calculating the difference between food output valued at domestic prices and the same output valued at prices which would emerge in a completely free market, i.e. at the prices which prevail on the world market. As of 1967 the government subsidy amounted to about Sw.Cr 2,000 million,which may be said to represent the extra outlay consumers pay when buying domestically produced food in place of imported food. See also Diagram 5.

If, as an alternative to present policy, the import duties on farm products and the subsidies to production were completely removed, and agriculture had to adjust to the lower prices on the world market, it would be possible to achieve the third objective - an efficient utilization of resources in agriculture and the lowest social costs of food production in the long run.

However, this would conflict with the other two goals, at least in the short run. An immediate price reduction would have devastating consequences for farmers' incomes. But according to the authors, this problem could be solved by giving farmers financial assistance during the transition while at the same time permitting successive adjustments of the price level to a free market. The remaining would be efficient enough to ensure the achievement of the income target for these groups. However, special measures would have to be taken to compensate the older low-income earners, for whom realistic alternatives to agriculture scarcely exist.

Diagram 5. Increase in costs of food consumption owing to import duties and subsidies from 1948 to 1967



A —— Value of domestic consumption at world market prices

B - - - - Value of domestic consumption at Swedish wholesale prices

C ..... Extra costs of domestic consumption

Note: The curves show that subsidies to agriculture did not assume great proportions until the 1950's and 1960's. In 1950 the subsidies were virtually negligible, in 1954 they amounted to 20 percent, in 1960 to about 50 percent, and in 1966 to 70 percent of the value of farm output measured at international prices.

As for the problem of assuring self-sufficiency in the event of a blockade, the authors contend it can be satisfactorily solved by peacetime stockpiling and the provision of land reserves that can be brought into cultivation as soon as a blockade threatens.

The authors point out that a change of agricultural policy along these lines could represent annual savings of about Sw.Cr 2,000 million at 1967 prices, or 1.5 percent of GNP.

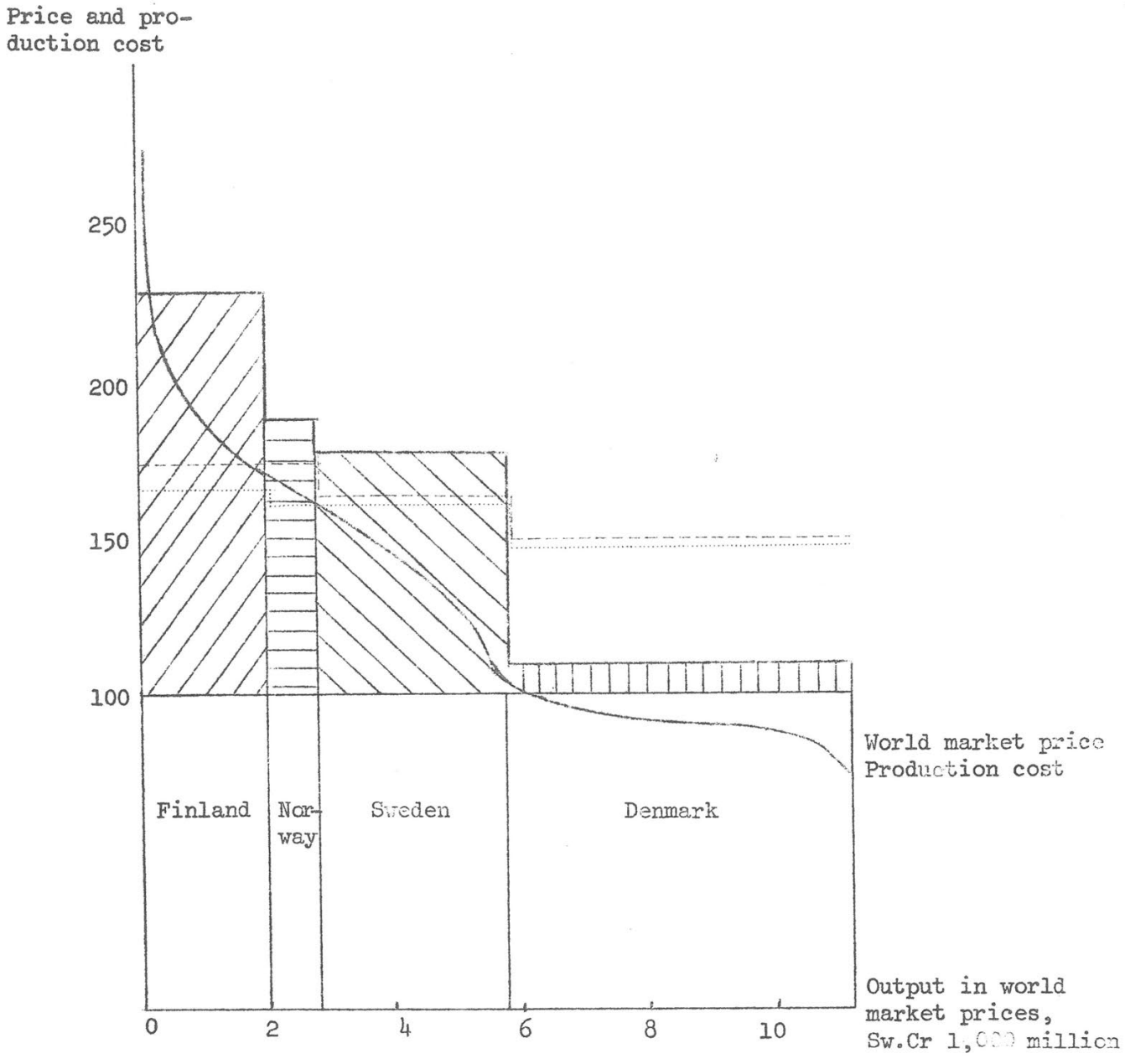
Nordek and the Agricultural Sector

One of the most serious difficulties the Nordic countries face in the creation of a customs union is solving their long-term agricultural problems. For this reason the initial negotiations were limited to the promotion of "supplementary" trade between the countries, i.e. shortages of food arising in any one member of the union would be primarily met by imports from the other members. However, according to the report of the government officials who took part in these negotiations, a decision on the long-term formulation of agricultural policy in the member countries should be taken not later than 1974. A report by Professor Odd Gulbrandsen of the Agricultural College in Uppsala published in 1969 under the title "Nordek and the Agricultural Sector", analyzes the problems a common Nordic agricultural market would face and discusses various possible solutions.

Agriculture in Norway, Finland and Sweden is quite regulated, as manifested in high domestic food prices. By contrast, agriculture in Denmark has essentially had to conform to world-market prices. Therefore, great difficulties would have to be overcome before policies could be coordinated.

Various alternatives suggest themselves concerning the price level to which the countries would be required to adjust. The first would be to take average prices for each commodity in the Nordic countries as a standard. Another possibility is the EEC price level, this with a view towards laying the groundwork for an association between Nordek and the Common Market. A third alternative is using relative world market prices as a reference point and add a uniform price support to all products. However, a major conclusion drawn in this report is that the average of Nordic prices corresponds closely to the prices that would ensue if the Nordic countries entered the EEC. The average price level of the Nordic countries could therefore be seen as a suitable preparation for entry. These relationships are illustrated in Diagram 6.

Diagram 6. Price support and production cost in Nordic agriculture



Note: The bar heights represent producer prices, while the widths represent output in each country. The difference between world market price and domestic producer prices may therefore be seen as a measure of the extent to which Nordic countries subsidize their agriculture. The thick continuous line shows each country's production costs according to an index on the vertical axis. The price levels proposed for a common Nordic agricultural market are also illustrated. EEC-prices and average Nordic prices are weighted here with the structure of production in the respective countries.

All the above mentioned alternatives for pricing on a common Nordic agricultural market would necessitate a large scale reorganization of farming. Since farm prices in Norway, Finland and Sweden are above the regional average, undesirable social consequences would result, unless steps were taken to offset them. The results of a common Nordic market for farm products may be briefly summarized as follows. Food prices would rise in Denmark and fall in the other three countries. The Danish food producers would accordingly earn large profits, while farmers in the other countries would make corresponding losses. At the same time, however, consumer outlays on food would rise in Denmark and fall elsewhere. This may be thought of as transfers of income and wealth from Norwegian, Finnish and Swedish farmers to Danish farmers and from consumers in Denmark to consumers in the other countries.

According to the author, the following measures could be taken to alleviate the social consequences of these changes. Immediately after the changeover to a common Nordic market, the new prices of farm produce in profit-earning areas, Denmark in particular, would carry a charge payable to a common settlement fund. This fund will then be drawn upon during a transitional period to subsidize farms in the less profitable areas. Gradually the subsidies are abolished and the farmers will have to adjust production to common prices. This will greatly curtail agricultural output throughout the Nordic region except in Denmark and also require mergers into larger holdings and a high degree of specialization by the remaining farms.

Factors Determining the Demand for Housing

The extent and direction of demand for housing have been the subject of intensive debate among Swedish politicians and economists throughout the postwar period. This is primarily due to the problems of shortages and queues that have arisen. Many explanations have been given to account for the existing conditions. There has been uncertainty all along as to the significance of income and price changes for housing demand.

These questions are analyzed in "Factors Determining the Demand for Housing", a book written by Dr Göran Eriksson, and Dr Gunnar Du Rietz, and jointly published by IUI and the Economic Research Institute at the Stockholm School of Economics. Econometric calculations are used to show the effects of incomes, rents and the age and marital-status composition of the

population on household demand for housing space and quality. In addition the authors present the findings of certain special studies on the extent of excess demand for housing ("the housing shortage") and the rent increases that would be necessary to eliminate the shortage. Data were obtained from a field survey carried out by the National Central Bureau of Statistics in connection with the 1965 population and housing censuses.

One of the most important findings concerns the effect of price (rent) on the housing space demanded by households. Earlier Swedish estimates on this point have indicated that the demand for space is rather insensitive to price. By contrast, the present authors obtained a price elasticity of nearly 0.4 for housing space, which means that the demand for space would decline by about 4 percent if the price per square meter were to rise by 10 percent. Also with regard to the income sensitivity of housing demand, the authors have obtained higher values compared to earlier housing studies. Whereas the earlier findings of income elasticities for the amount of space demanded by households ranged from 0.2 to 0.5 and for the amount of housing volume (a term that refers both to space and quality) demanded by households from 0.4 to 0.9, the present study obtains income elasticities of 0.8-0.9 for the demand for space and 1.1-1.2 for housing volume. However, the considerably higher elasticities in this investigation are attributable to the use of special methods which have sought to demonstrate the effect of long-term income changes.

Estimates of the size of the housing shortage show that excess demand for dwelling space at the prevailing rent level averages 9 square meters per household, or 15 percent of the actual dwelling space in metropolitan regions. Excess demand is lower in the rest of Sweden, averaging 7 square meters per household or 10 percent of the actual dwelling space. If account is also taken of the unsatisfied demand for number of dwelling units, the estimated excess demand works out at a higher figure. For metropolitan regions and the rest of Sweden the excess demand for dwelling space then comes to 24 percent and 15 percent, respectively.

Calculations of the equilibrating rent increases disclose that rents in the metropolitan regions would need to be raised by an average of 18 Sw.cr per square meter or by 39 percent in order to achieve balance between the quantity supplied and demanded on the housing market. For the rest of Sweden the equilibrating rent increases are figured at an average of 16 Sw.Cr per square meter or 37 percent of the actual rent level. Since allowance has not here been made for unsatisfied unit demand, the figures must be regarded as indicating the lower limit for the equilibrating rent increases. These results are summarized in Table 3.

Table 3. Excess demand and equilibrating rent increases

	Metropolitan regions	Rest of Sweden
Desired dwelling space per household	73 m^2	69 m^2
Actual dwelling space	64 m^2	63 m^2
Desired dwelling space - actual dwelling space	9 m^2	6 m^2
Excess demand in percent of actual dwelling space	15 %	10 %
Equilibrium rent	66 Sw.Cr/m^2	58 Sw.Cr/m^2
Actual rent	47 Sw.Cr/m^2	42 Sw.Cr/m^2
Equilibrium rent - actual rent (estimated rental gap)	18 Sw.Cr/m^2	16 Sw.Cr/m^2
Estimated rental gap/actual rent per square meter (percentage rental gap)	39 %	37 %

Comment: The figures in the table pertain only to rented dwelling units and cover only existing households, i.e., the calculations have not allowed for unsatisfied demand for number of dwelling units.

The Diffusion of New Technology - A Study of Ten Processes in Nine Industries

This study is the first report of an ongoing international research project on the diffusion of new technology in industry, in which the Institute is participating. The report appeared in National Institute Economic Review, No. 48, in May 1969 and was published by IUI during the autumn of 1969 as a reprint, No. 46. It deals with the diffusion of the ten processes which are being studied in the project. In addition certain comparisons are made of technological diffusion between countries and between firms, as well as between different innovations. For a more detailed presentation of the report and the study as a whole, see page 38.

Production Functions and Profit Developments in the Swedish Forest Industries

In the booklet "Production Functions and Profit Developments in Swedish Forest Industries", Dr Yngve Åberg presents certain estimates of production functions for forest-based industries. The estimates are for 1947-1965 and cover sawmills and planing mills, fibreboard mills, and pulp and paper mills. These production functions are used to show the proportions of increased production in each industry respectively that have been contributed by capital, labour and technology. In addition, the marginal productivity of labour is compared with money wages both for the whole period studied on an average and for each single year; this was done in order to analyze profit trends in the forest-based industries.

RESEARCH PROJECTS IN PROGRESS

Corporate mergers in Swedish industry

A distinct tendency towards increased merger activity in Swedish industry became noticeable in the early 1960's. This tendency was accentuated by mid-decade and had its counterpart in other industrial countries. Very little was known in detail about the extent, fluctuations and purposes of merger activity. Similarly, knowledge of its causes was confined to guesses and casual observations instead of being based on a cogently reasoned and empirically tested theory.

These are some of the reasons that made the Institute decide in 1966 to start a research project on corporate mergers in Swedish industry. Its principal objectives were defined as follows: (a) to survey industrial merger activity in the postwar period (size of mergers, their distribution by industry, development over time, etc.) and (b) to try to explain theoretically the underlying causes of the merger trend. The greater part of the research work so far has been devoted to the former task, which was virtually completed by the end of 1969.

For lack of other and better sources, empirical data were collected in the same way as in most foreign studies of mergers: by perusal of newspapers, trade journals, annual reports of manufacturing companies and company directories. For a few industries special data were available and these have been studied in detail. This collection method entails obvious risks that some mergers between small firms remain unrecorded. But in the case of large firms, especially those listed on the stock exchange, the omissions are probably negligible. The data probably cover 70 to 80 percent of all industrial mergers which occurred in the period from 1946 to 1969 and more than 90 percent of merger activity during the same period, if weighted by the size of merging or acquired firms.

The postwar period may be divided into three subperiods on the basis of merger activity (measured in number of mergers). During the first period, 1946-1957, the number of mergers was relatively constant, between 40 and 60 per annum, with a marked peak in 1947 and a sharp decline in 1952-1953. During these twelve years no tendency towards a trend-wise increase could be noted. But during the second period the number of mergers rose steeply,

from 52 in 1957 to 309 in 1966. Over these nine years the upward tendency was broken only in 1961. After 1966 the number of mergers declined somewhat and from 1967 to 1969 the rate held relatively stable at around 250 per annum, though with a slight continuing upward tendency. The trend for the period as a whole is illustrated in Diagram 7.

The number of mergers is a suitable measure for purposes of analyzing the causes of mergers and the changes between different years, industries, etc. If one seeks instead to gauge the various effects of mergers, say on employment or productivity growth, it becomes necessary to use a weighted measure, i.e., a measure which in some way allows for the size of merged firms. Accordingly, a summation of the number of persons employed by the bought-up firms has been made. It will be seen from Diagram 7 that weighted merger activity over time differs from unweighted. The amplitude of inter-year fluctuations is often much greater and the trend-wise increase between 1958 and 1966 is stronger. Moreover, the two merger measures do not always change in the same direction. The selection of measure can therefore crucially affect the analytical results.

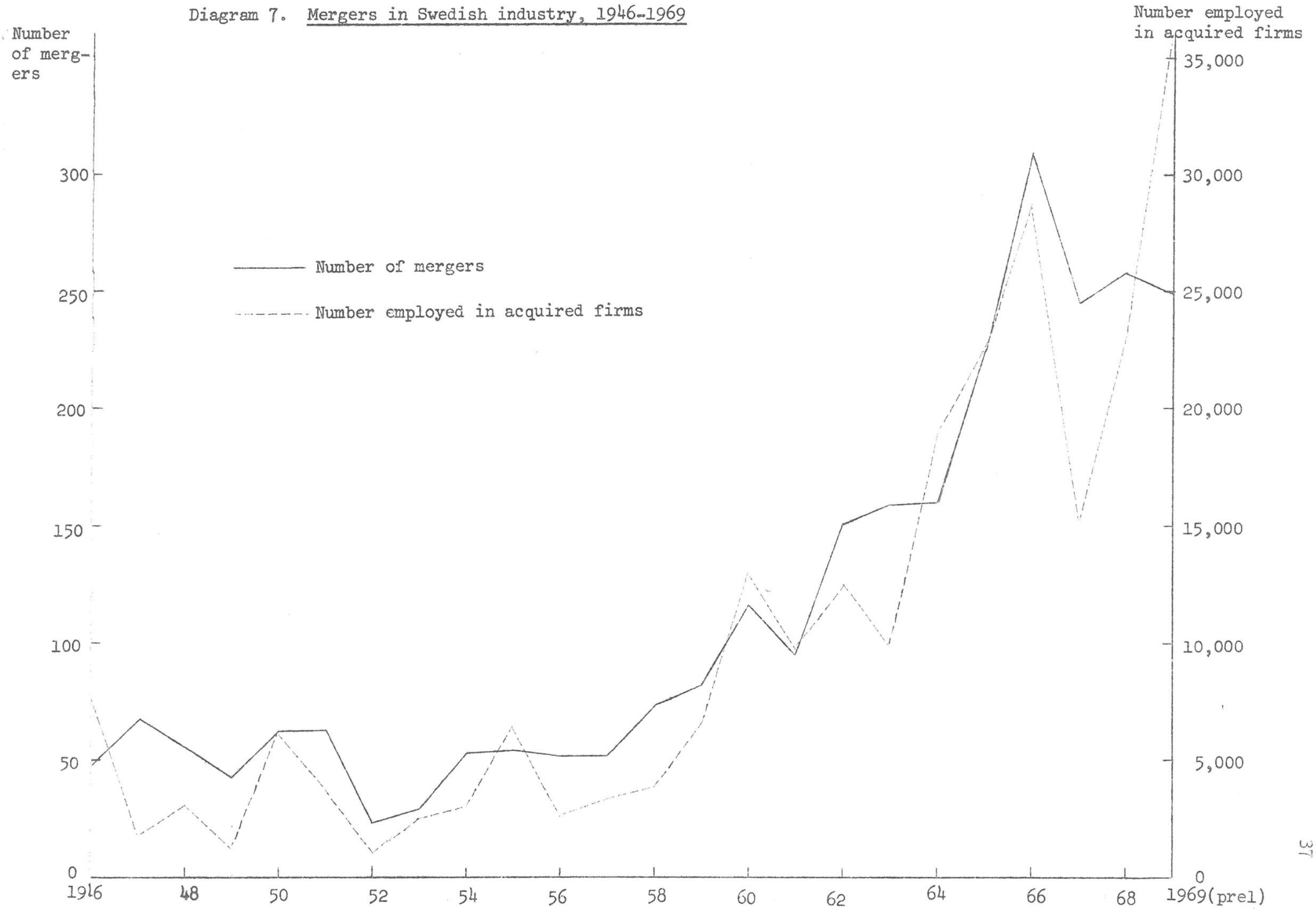
The research data were transformed to permit assessing the effects of merger activity on, among other things, the stock of firms in Swedish industry and foreign ownership influence. Table 4 sets forth the result. It should be pointed out that the firm is regarded as an economic and not a legal entity, i.e., a concern consisting of several legal entities is viewed as a single firm and the acquisition of one such firm as only one merger. A full merger means that one firm takes over control of another firm (usually by acquiring a majority of shares or through the amalgamation

Table 4. Number of mergers of different kinds in Swedish industry, 1946-1969

Period	Full mergers between Swedish firms	Partial mergers between Swedish firms	Swedish purchases of foreign firms	Foreign purchases of Swedish firms	Total
1946-1950	235	21	17	4	277
1951-1955	176	32	13	1	222
1956-1960	281	41	42	11	375
1961-1965	532	136	67	52	787
1966-1969	597	286	118	61	1062
Total	1821	516	257	129	2723

Note: The 1969 figures are preliminary.

Diagram 7. Mergers in Swedish industry, 1946-1969



of two or more firms). A partial merger refers to the acquisition of a subsidiary, branch, operating division, etc., from a firm which continues to run that part of its operations which remains after the merger. The nationality of a firm is classified by the nationality of its ownership and not by the firm's geographic location.

From Table 4, the gross effect of merger activity on the stock of firms can be approximately estimated. During the postwar period the number of manufacturing firms located in Sweden which employ five or more persons has averaged about 17,000. From 1946 to 1969 the number of acquired firms located in Sweden amounted to 1,975, a figure that will probably rise to about 2,000 when the definite 1969 data are available. Of these 2,000 about 10 percent consist of non-manufacturing firms which have been bought up by manufacturers through vertical integration or diversification. Thus the merger process has reduced the number of corporations in industry by more than ten percent. The overall decline, however, is greater than this, due to other factors.

Investigator: Bengt Rydén.

Diffusion of new technology in industry

The use of new production methods provides an important explanation of economic growth. A current international research project seeks to find out how rapidly new manufacturing processes are diffused in industries of different countries and to analyze the causal relationships behind this diffusion. The participants in this project, in addition to the Industrial Institute for Economic and Social Research in Stockholm, are the National Institute of Economic and Social Research in London, Istituto Nazionale per lo Studio della Congiuntura in Rome, the National Bureau of Economic Research in New York, IFO-Institut für Wirtschaftsforschung in Munich and Österreichisches Institut für Wirtschaftsforschung in Vienna.

Ten processes were selected for study, all of them introduced during the postwar period. A first stage of the project was to describe the actual diffusion of these processes. The participating British institute has published a report on this part of the study, which IUI has reprinted as an offprint (see page 33). According to the report the United Kingdom has usually been the earliest of the six countries to introduce technical innovations (of the ten innovations studied), but that subsequent diffusion has often gone slowly in that country. Sweden has introduced innovations

somewhat later than the U.K., but earlier than the other countries. On the whole, however, the actual diffusion of the processes has gone fastest in Sweden.

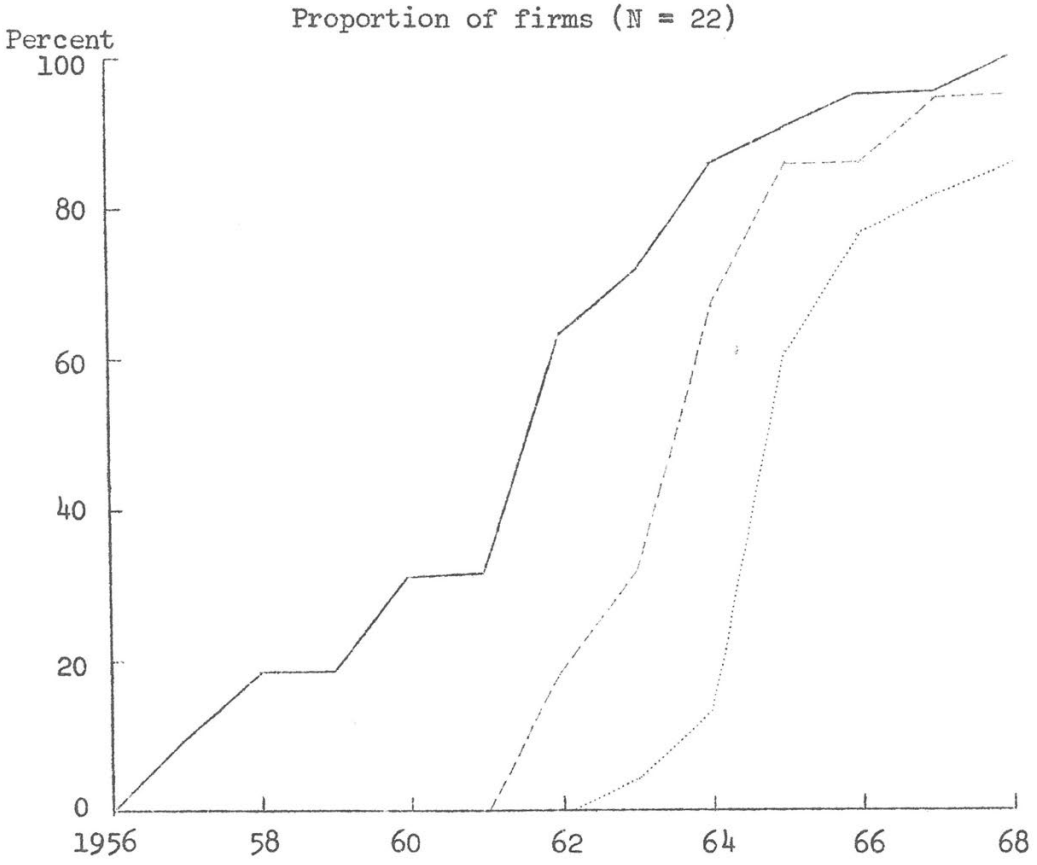
A second stage of the project is the analysis of the introduction and innovation processes and differences in these between countries, firms and different innovations. A large body of empirical data is now being gathered. Certain features of the diffusion process based on the Swedish material will be presented in the following.

The introduction of a new manufacturing process is but the final link in a chain of events that begins when a firm is reached by information about a new technique. If this new process appears useful to the firm, the innovation may be analyzed and evaluated in different stages, and perhaps tested before decision is taken to adopt the innovation. This "adoption process" involves a complicated interplay of factors within firm; however, this phenomenon is considered to only a limited extent in the study, in which firms are regarded more as individuals having certain attributes.

In the study of diffusion processes attempts are often made to explain how a specific behaviour or certain attributes change cumulatively over time, which may be graphically represented by means of diffusion curves. Although these curves are usually used to describe the introduction process itself, they may also describe other points of time in the "adoption process" for an innovation, e.g., the initial obtaining of information and serious consideration of it. However, the hypothesis is that the different curves are not determined by the same factors. Diagram 8 shows the curves for information, consideration and introduction of special presses (special presses is used as the inclusive term for fabric presses, shrink-fabric presses, Venta-Nip presses, high-intensity presses) in the Swedish paper industry. The curves represent the relative proportion of papermaking firms which at discrete points of time have been informed about, considered and introduced the new technique. It can be observed that it took all of 12 years from the time the first firm found out about the special press technique until all firms were aware of it. Since the new press technique did not become operational until the beginning of the 1960's, a large number of firms were familiar with the development work in this field that was going on in Sweden long before the technique became commercially useful. Most of the firms decided to install special presses after careful consideration. The interval between the "consideration" and "introduction" curves is therefore a measure of the time it has taken to implement a decision.

Diagram 8. Diffusion of the special press technique in Sweden, 1956-1968

Proportion of firms (N = 22)



——— Information

– – – – – Consideration

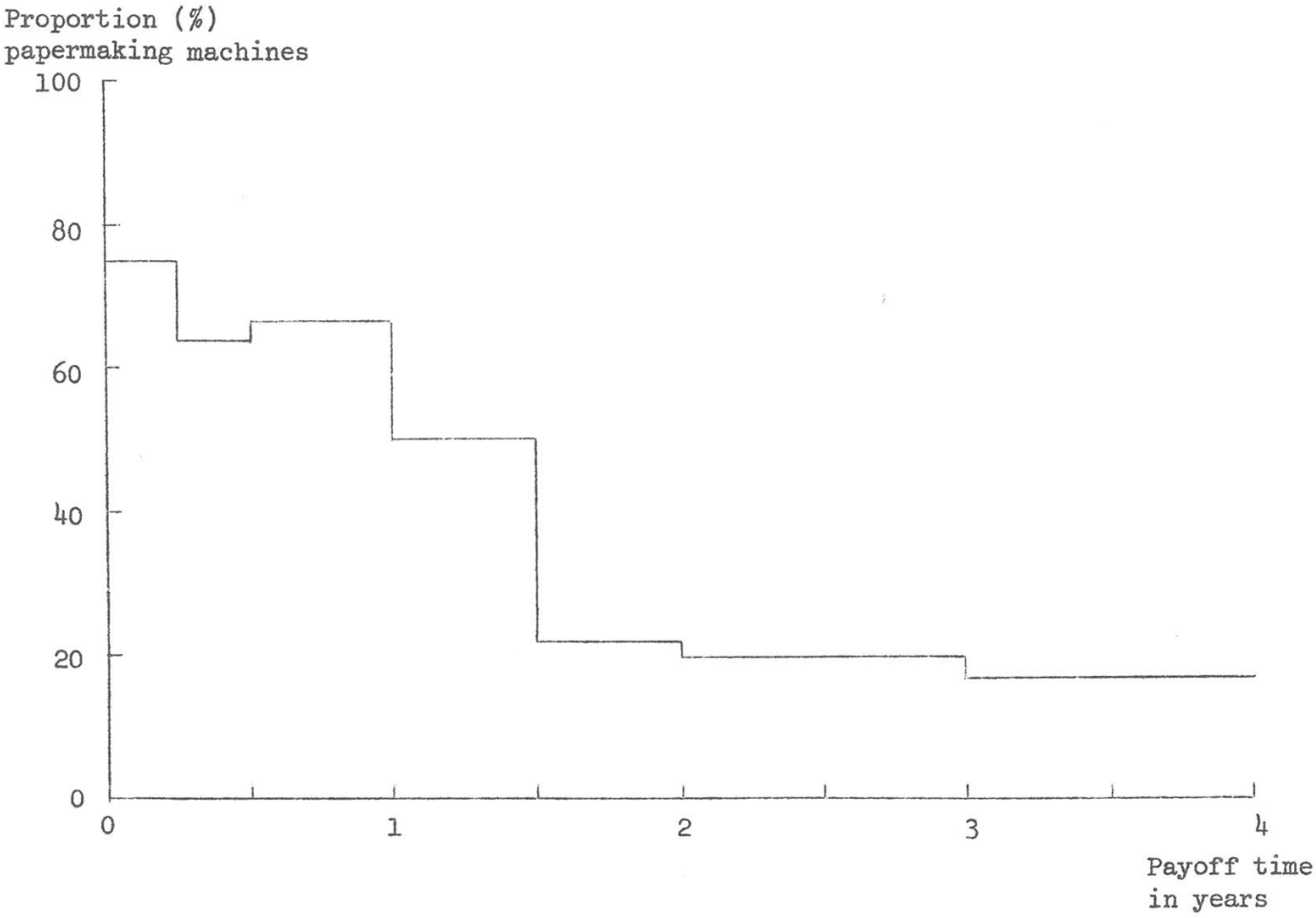
..... Introduction

An important group of variables employed in the theoretical model to explain the diffusion of innovations consists of the effects of a specific innovation on an individual firm. An over-riding explanatory variable for the individual firm is the profitability of the innovation. Where investment in a new technique is relatively cheap as that for special presses, profitability appears to explain differences of diffusion rather poorly. On the other hand this variable seems to relatively well sort out those firms which eventually adopt the new technology from those that never do. However, the dates at which this particular innovation was introduced must be explained by other factors. Diagram 9 shows how the rate of installing these presses on Fourdrinier-type papermaking machines varies with estimated profitability (measured in payoff time). This measure has been computed for all these machines regardless of whether the technique has been adopted or not. The machines are grouped according to the profitability measure, and the proportion of machines equipped with special presses before the investigation was made is computed in each payoff interval. It was found that special presses had been installed on machines with an estimated payoff time of at most a year or so to a much greater extent than on machines with lower profitability (longer payoff time).

The profitability variable, however, probably has a different explanatory value for different innovations. The use of relatively capital-intensive techniques such as the oxygen processes (Kaldo and LD) in the steel industry can be almost entirely explained by factors which reflect their profitability, primarily the steel grades produced and access to hot metal. However, a large residual often remains to be explained after the influence of the profitability variable is accounted for. Here another group of variables relating to the individual firm may be of essential importance. Previous research has shown that an international and outward-looking attitude is closely correlated with technical progressiveness. That can be explained in turn by the fact that an international orientation usually is associated with more and better channels of information about technological advance. This openness among firms presumably also affects their attitude to an interest in technical innovations. Firms exhibit marked differences in this respect.

It is likely that the factors so far mentioned do not suffice to explain differences in diffusion when countries are compared. Factors in the industrial environment probably affect the outcome, such as laws and regulations, trade associations, collective research efforts and active

Diagram 9. Estimated profitability (payoff time) and proportion of papermaking machines (Fourdrinier) on which special presses have been installed in Sweden



selling measures taken by capital equipment manufacturers. If we relate this to the information obtained in the project's first stage, it is probable that these environmental variables can explain, at least in part, the rapid diffusion of innovations in Sweden compared with, say, the United Kingdom. In most of the industries here studied Sweden has strong trade associations and well-established programmes of collective research, which have contributed to the development of extensive personal ties between technicians who work for different firms in the same industry. A point stressed by many technicians is that they regard one another not so much as competitors as colleagues. Such an attitude has undoubtedly been fostered by Sweden's large-scale exports, which means that her main competitors are to be found abroad.

Investigators: Lars Nabseth, Staffan Håkanson, Margareta Holter and Ulf Granérus.

Forest industries: growth potentials and structural change

The growth potentials of Sweden's forest industries depend to a considerable extent on how well they can hold their own on the world market. A basic assumption made by the Institute in its study is that the prices of forest products in the long run is given by the world market - in other words, the level is largely unrelated to how much Sweden offers for export. The analysis is chiefly concerned with showing how the Swedish supply of forest products is influenced by different hypothetical movements in their prices.

For this reason the analysis is confined to those factors which determine the Swedish output. A distinction can here be drawn between factors which are determined by the general economic situation and those which are specific to the industries. Subsumed under the former factors are changes in the price of labour and capital in Sweden and the international price level of forest products. The main factor in the latter category is the supply of timber.

The study deals fairly extensively with the factors which determine timber output. Among the topics discussed here is the effect of rationalizations in forestry on the production costs of the forest industries. A separate chapter is devoted to the question of how prevailing competitive conditions on the timber market affect timber output and the growth rate of the industry.

Furthermore the structural problems of forest industries are elaborated. The study seeks to determine how the industrial structure changes under conditions of continuing technological advance and rising wages. Most of the analysis concentrates on variations of productivity between different plants. The productivity structure of an industry is changed, first, by the addition of new capacity which applies the best-known technology; and, second, by the shutdown of old capacity with low productivity. This structural change by itself increases the average productivity of the industry. On top of that comes the productivity increment which derives from constant improvement in the best-known technology. The faster production increases in an industry, the faster usually is the process of structural change and the faster the rise in productivity. A model has been devised in the study which segregates the productivity effects of structural change from those of technological advance. As a result of this analysis it can be stated that about 60 percent of the total productivity increment in the pulp industry between 1950 and 1964 is attributable to structural change and about 40 percent to improvements in the best-known technology.

The study's final chapter presents a possible course of growth of industries during the 1970's. A calculation of this kind must be based on specified assumptions about the development of those factors which govern the growth of production. Among these strategic variables we include the world market price of forest products, the price of capital, the movement of wages and the rate of technological advance. A summary version of this projection is reproduced below:

Table 5. Projection of the forest industries 1968 and 1980

Production	Measure	1968	1980	Average annual increase in percent
Lumber	1000 stds	2275	3380	3.4
Pulp, total	mill. tons	7.0	11.6	4.3
Paper and board	mill. tons	3.6	7.2	6.0
Total timber consumption	mill. cu.m.	62	92	3.6

Obviously, every such attempt to assess the future must be hedged with many reservations. Underlying the projection shown are assumptions of roughly the same unchanged price level for pulp-paper and lumber, a rate of wage increases unchanged from the 1960's, the same rate of technological advance but a faster adoption of new technology and, not least important, an assumption that the price of capital for the forest industries will fall somewhat. From these assumptions it can be inferred that the price of timber will be maintained or even increase a little. Having regard to the conditions of timber output which are more closely analyzed in the study no purely economic obstacles are thought prevent a cutting level as high as that assumed in the projection. However, institutional lags on the timber market may make it difficult to realize a rate of expansion as high as the one here implied.

Investigator: Lars Wohlin.

Swedish industry, 1970-1975

During the postwar period government-sponsored Long-term Surveys have been undertaken at regular into the intervals to inquire secular development tendencies of the Swedish economy. The latest of these so-called Long-term Surveys was completed in 1965 and treated the development up to 1970. In 1969 the Ministry of Finance appointed a new committee of inquiry to deal with the period up to 1975. A number of research institutions are taking part in this work. As it has done in connection with the earlier long-term inquiries, the Industrial Institute for Economic and Social Research has assumed responsibility for that part of the new inquiry which concerns the future prospects of Swedish industry.

As a basis for the analysis of the manufacturing industry, the Institute has sent a questionnaire to a large number of firms. In these questionnaires firms were asked to specify their plans for production, employment, investment in Sweden and abroad, and exports up to 1975. A separate questionnaire was sent to a smaller number of firms asking about the investment they plan under the head of "environmental improvement" or conservation. The Institute's report will set forth the plans for the manufacturing industry as a whole as well as for different subgroups of industry. Next, the planning data will be assessed with reference to an analysis of the general preconditions for continued industrial expansion in Sweden and of the development to date in each industry.

In a separate section the planning data will be analyzed on the basis of differences between various types of enterprise. In addition, the report will include an account of the development of subgroups of industry in a number of other industrial countries: this has relevance for the Swedish assessment inasmuch as relative growth of industry groups in the industrial countries tends to follow similar patterns. This last-mentioned aspect is illustrated in Table 6. A comparison between industrial countries of the composition and growth of their exports also discloses considerable similarities. In connection with these international comparisons a study of the factor proportions in Swedish exports and imports is planned.

More than 1,000 firms are covered by the inquiry sample. The industrial statistics maintained by the National Central Bureau of Statistics was used as the sampling frame. Experiences of earlier long-term inquiries have shown that large firms usually find it easier than smaller ones to indicate their plans for production, investments, etc., five years ahead. Since large firms, defined as enterprises employing more than 500 persons, account for a relatively large proportion of the industrial labour force and of manufacturing output the Institute chose to put questions to all these firms. Further, in the pulp and paper industry and the basic metal industries all firms having more than 200 employees are included, while in the chemical industry all firms with more than 50 employees are included. Other industries and size categories were selected on a random sample basis. Firms which employed less than 10 persons in 1967 are excluded. In this way the sample covers about 60 percent of all employees in Swedish industry.

To use responses to a questionnaire in order to assess the course of events 5-6 years ahead poses a number of problems. For instance, a period of intense business activity may cause the firms to report more optimistic plans than they would under other business conditions. This and other aspects of the relationship between plans and outcomes are under investigation by the Institute in a special study, which also deals with the problems caused by some firms in the sample not responding. For example, it is possible that non-response is relatively more common among slowly growing firms than among strongly expanding firms. If this is true the questionnaire data may overestimate the plans for industrial growth. The response frequence in the present study comes to 75 percent of the sampled firms. In terms of the number of people employed, the respondent firms cover about 94 percent of the sampled firms.

Investigators: Lars Nabseth, Siv Gustafsson, Torsten Löfgren et al.

Table 6. Development of industrial production, 1958-1965. Expansive and stagnant industries in relation to the average in each country

\+ > 10 % above the average — > 10 % below the average
++ > 20 % " " " — — > 20 % " " "

Industry	USA	Japan	United Kingdom	West Germany	France	Sweden
Mining	--	--	--	--	--	
Food	--	--	-	-	-	--
Beverages	-	--	+	-		--
Tobacco	--		--	-	-	--
Textiles		--	--		--	--
Wearing apparel and footwear				-		--
Lumber	--	--				
Furniture and fixtures	+					
Pulp and paper		-				
Pulp, paper and board		-		-		
Printing and publishing	-					
Leather and fur products	--	--	--	--	--	--
Rubber products		-		+		
Chemical products	+		++	++	++	
Basic chemicals	++				++	++
Petroleum and coal	-	++		++	++	
Non-metallic mineral products			+		+	+
Glass and glass products					+	+
Cement	--				+	
Basic metal industries		+		-		+
Iron and steel		++		-		+
Metal products					-	+
Machinery, except electrical	+	++			-	+
Electrical machinery	+	++		+	++	
Transport equipment		++	-		-	
Shipbuilding			--	--		-
Motor vehicles	++	++	++			+
Aircraft	-				-	
Other products	+	++	++	++		++
Electricity and water		-	+	+	++	

≙ 10 % above the average and ≙ 10 % below the average are accordingly not marked.

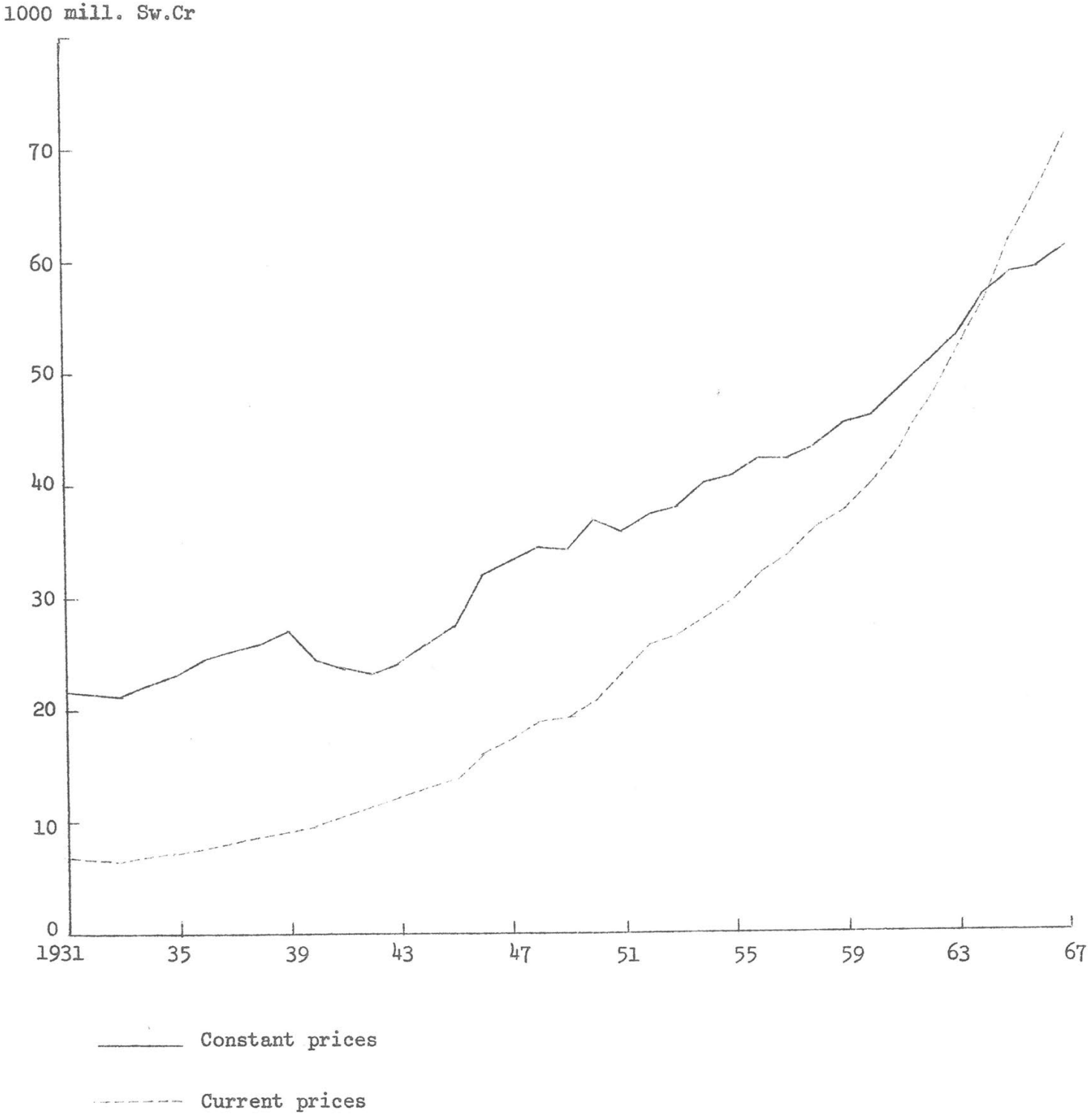
Private consumption

Over a period of years the Institute has published a number of demand studies relating to private consumption. These may be roughly divided into two groups: first, studies which have dealt with demand for individual products or commodities and sought to predict the future consumption level; and second, studies which have dealt with the development of total consumption and how it has been distributed among different groups of commodities. In the mid-1950's a research team from the Institute headed by Professor Ragnar Bentzel presented time-series material on private consumption in Sweden which for the first time had been grouped on the basis of demand theory, a classification standard that has not been systematically applied in the national accounts. This new material was used for forecasting total private consumption and its distribution between groups of commodities up to 1965. Against this background it was natural that the Institute should undertake, on behalf of the Ministry of Finance, that part of the Long-term Survey which deals with private consumption. This will also be done for the 1970-1975.

The time series worked out by Professor Bentzel still serve as a point of departure for this work, together with the revisions that have since been made in connection with the long-term inquiries. These revisions have been rather meticulous, and on account of reclassifications, improved calculating methods and new commodity insertions the series are now classified in nine major groups and 96 subgroups, whereas Professor Bentzel used eight major groups and 65 subgroups. The nine major groups are as follows: food, beverages and tobacco, housing, wearing apparel, household equipment, travels, recreation, medical care and hygiene, and miscellaneous products and services.

The general principle governing this classification is to put substitutable and complementary products in a single group which simplifies the analysis since the development of the major groups display a stable pattern over time. The material that the Institute will use for the next long-term inquiry extends back to 1931 for the major groups, whereas it has not been possible to go farther back than 1950 for the subgroups. The forecasts are based on models that explain the earlier consumption trend for a specific commodity group by changes in population, development of household incomes available for consumption, and relative price changes of different products. When the relationship between changes in consumption and

Diagram 10. Private consumption, 1931-1967, in constant and current prices



changes in the independent variables is thus established, it is possible, by making assumptions about the development of the explanatory variables, to forecast consumption of a specific commodity at a certain time. Alternative forecasts are made by making different assumptions about the development of the independent variables. These forecasts are then assessed in the light of what can be predicted about, say, the growth of industrial production, changes in economic policy, immigration, market changes, etc. This may be said to be the consistency criteria: the forecasts must be compatible with what we know about the trends in other sectors of the economy.

Investigators: Anders Klevmarken, Carl Johan Dahlman.

Follow-up of industry inquiries for the Long-term Survey

As was noted on page 45 Swedish manufacturing firms have been inquired concerning their plans for production, exports, employment and investment on behalf of the 1970 Long-term Survey. Questionnaires designed to elicit similar information were sent out by the Institute in connection with the work performed for the 1959 and 1965 Long-term Surveys. Table 7 permits a comparison of actual production outcomes and reported corporate plans.

Plans for the first half of the 1960's systematically underestimated the actual growth of production, whereas the later questionnaire tended, if anything, to show overestimates. It was variances of this kind that caused the Institute to initiate its present follow-up study. This investigation is meant to provide an aid in evaluating responses to the 1969 questionnaire.

This study will seek to determine whether variances from planned production and exports can be attributed to characteristics of the individual firm such as size and dependence on foreign markets. In addition, the relationship between planned and actual employment, investment and production will be analyzed. It is thought that firms traditionally underestimate their investment requirements.

Results obtained so far at the level of industry groups indicate that great differences between the business outlook at the time of inquiry and during the planning period are accompanied by great differences between plans and outcomes. This holds true of the 1964 questionnaire but not of the one for 1960. Data from individual firms in the engineering industry suggest that departures from the plans do not appreciably vary with size of firm.

Investigator: Sune Davidsson.

Table 7. Production plans of firms and actual production in the 1959 and 1965 long-term inquiries

Annual percentage change in output

Industry group	1959 Long-term Survey 1959-1965			1965 Long-term Survey 1963-1970		
	Plans	Out-come	Over/under estimate[a]	Plans	Out-come	Over/under estimate[a]
Mining	6.0	7.4	- 1.4	6.2	7.3	- 1.1
Basic metal industries	9.6	11.0	- 1.4	9.1	7.6	+ 1.5
Engineering	6.0	9.5	- 3.5	8.1	7.3	+ 0.8
Metal products	6.6	9.2	- 2.6			
Machinery, exc. elect.	6.2	10.7	- 4.5			
Electrical machinery	4.6	9.3	- 4.7			
Transport equipment	5.8	7.7	- 1.9			
Shipbuilding	3.1	5.2	- 2.1	1.8	4.3	- 2.5
Stone, clay and glass	5.4	8.5	- 3.1	7.2	5.9	+ 1.3
Wood products	5.2	7.2	- 2.0	6.0	6.5	- 0.5
Pulp, paper and fibreboard	7.5	6.7	+ 0.8	7.5	6.0	+ 1.5
Paper products, printing and publishing	3.3	7.1	- 3.8	6.4	3.0	+ 3.4
Food manufacturing	2.3	3.6	- 1.3	4.3	3.2	+ 1.1
Textiles	2.7	2.9	- 0.2	4.9	1.5	+ 3.4
Wearing apparel	2.8	4.9	- 2.1	4.6	-0.4	+ 5.0
Footwear and leather products	2.6	1.6	+ 1.0	3.2	-3.8	+ 7.0
Rubber products	7.6	8.0	- 0.4	8.7	8.2	+ 0.5
Chemicals and chemical products	6.2	10.5	- 4.3	11.4	12.1	- 0.7
All industries	5.3	7.9	- 2.6	7.3	6.5	+ 0.8

a) A minus sign signifies an underestimate, a plus sign an overestimate in the plans.

Note. Figures for 1968 and 1969 are preliminary, figures for 1970 are forecasts.

Sources: The National Central Bureau of Statistics, the National Institute of Economic Research and IUI.

Imports of manufactures from low-wage countries

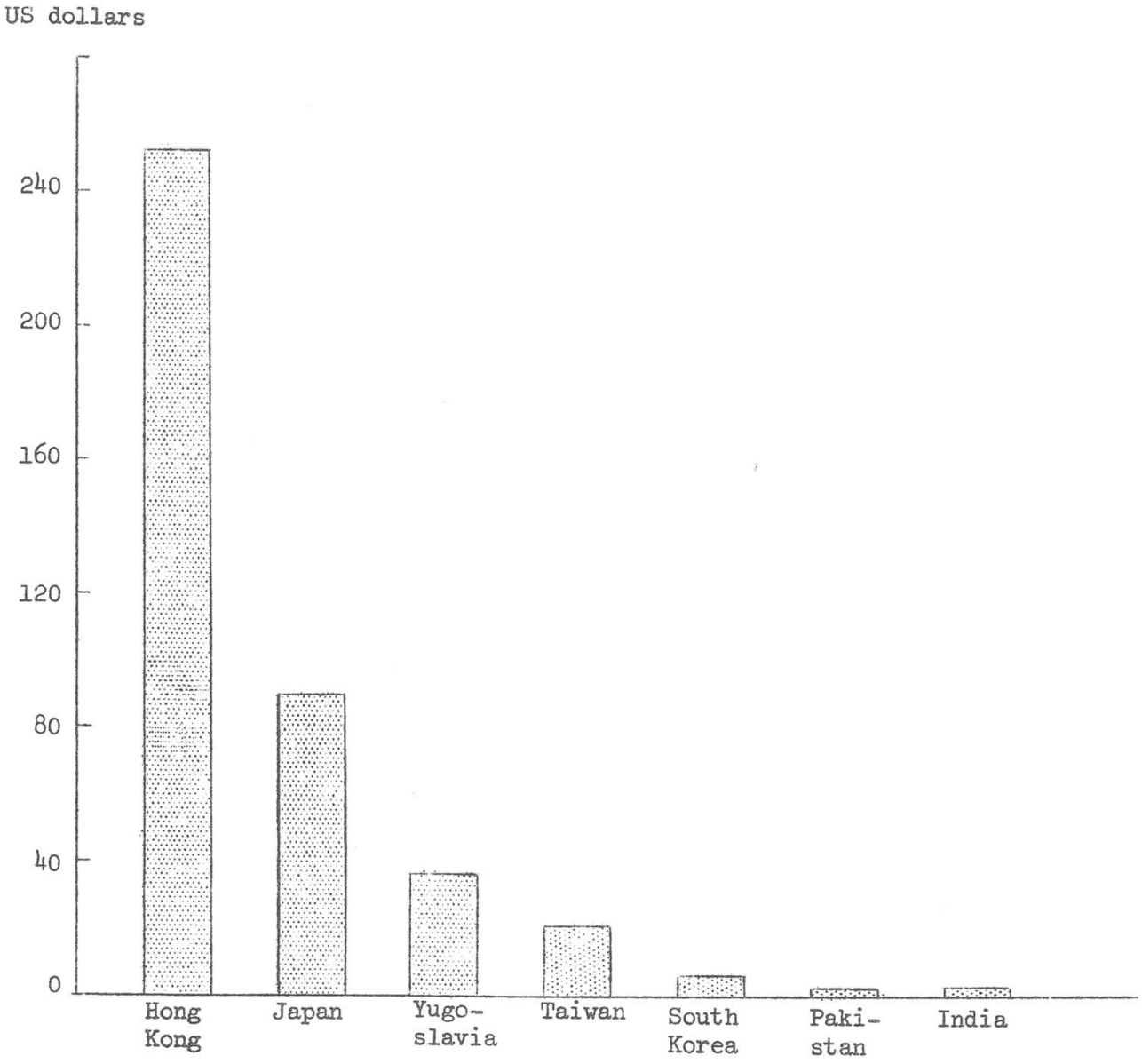
In the ten-year period from 1958 through 1967, the developing countries increased their share of the world's exports of manufactures from 4 percent to 4.8 percent. At the same time, however, their share of the trade in primary commodities dropped sharply - from 39 to 31 percent for food and from 37 to 31 percent for other primary commodities except oil.

In the case of manufactures, the relatively favourable growth of exports for the developing countries derives to a large extent to the extremely rapid advance that a few of them have made on the world market. Thus a dominant position is occupied by Hong Kong, which produces more than 70 percent of all the wearing apparel the developing countries export to Europe. Of the total exports of manufactures from these countries, nearly 25 percent originate in Hong Kong. If we exclude products that are particularly tied to the location of raw materials such as plywood, jute goods and certain basic industrial chemicals (which are not produced in Hong Kong), Hong Kong is responsible for an even greater share of manufactures. The role played by Hong Kong becomes especially conspicuous when we look at its marginal importance: of the increase in exports coming from the developing countries between 1956 and 1968, Hong Kong has contributed about 40 percent.

Taiwan, South Korea and Yugoslavia have rapidly increased their exports of manufactures, though admittedly they started from a very low level. Owing to the dominance of these four countries in the growth of exports, the other developing countries have seen their shares of the world market steadily dwindle during the past decade.

The fact that exports have fluctuated so sharply for different developing countries suggests that the biggest obstacles to faster expansion are to be found on the supply side and not, as is so often assumed, because of inadequate demand in the industrial countries. India is a case in point: its stagnating exports of manufactures, textiles in particular, are not mainly attributable to the restrictions on textile imports which industrial countries imposed during the 1960's, but to the fact that India has been outdistanced by Hong Kong, Pakistan and other developing countries. Thus since the mid-1950's India's share of British imports from the developing countries fell from 50 percent to about 25 percent in 1966, while Hong Kong increased its share correspondingly.

Diagram 11. Per capita exports of manufactures in 1966



It may be observed that wage differentials between Hong Kong and India have increased at the same time; present-day wages in Hong Kong are probably three times higher than in India. That wage differentials of this magnitude apparently do not matter is of course due to their being offset by differences in other factor prices and also in productivity. The first point is of great importance: to a very high degree, Hong Kong's competitiveness in finished products derives from the absence of import duties and the resultingly low prices of intermediate products (e.g., synthetic fibres, crude plastics, components and machinery). Furthermore, productivity is often higher than in Europe, which must be chiefly ascribed to the high utilization of capacity. As in the United States, but not in Europe, efficient and relatively capital-intensive production methods are here often combined with high capacity utilization (3-4 shifts), which together with Hong Kong's factor prices lead to very low production costs.

However, the extent and development of manufactured exports in different developing countries primarily reflect dissimilarities of development strategy. The many larger developing countries which, in common with India, mainly base their growth on import substitution may find their export potentials severely circumscribed.

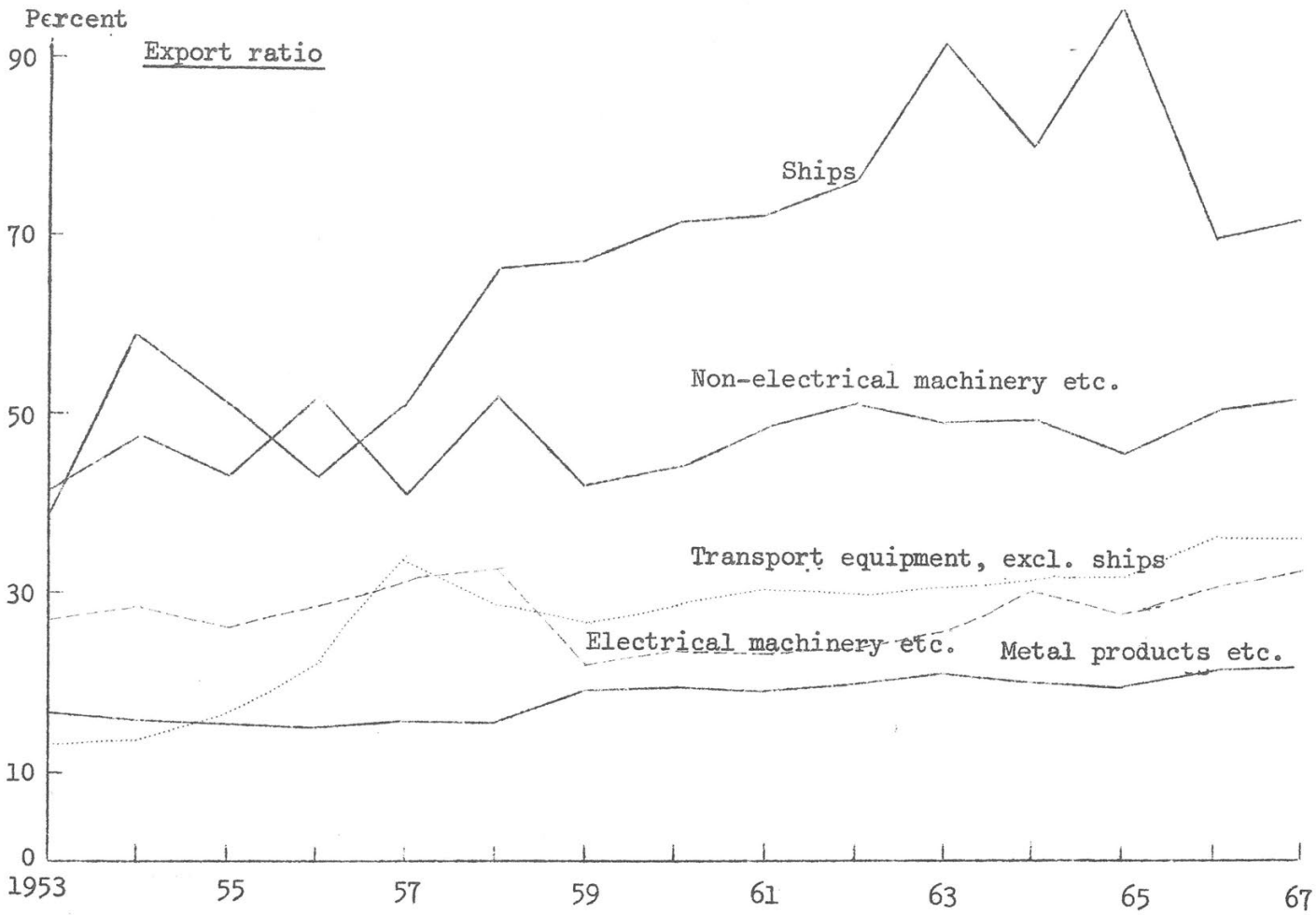
As will be seen from Diagram 11, India's exports of manufactures amount to two US dollars per capita, nearly half of which is earned by jute goods, where the country enjoys a partial raw material monopoly. One can not doubt the ability of India to export more manufactures, but that will probably require another economic policy than the one now pursued.

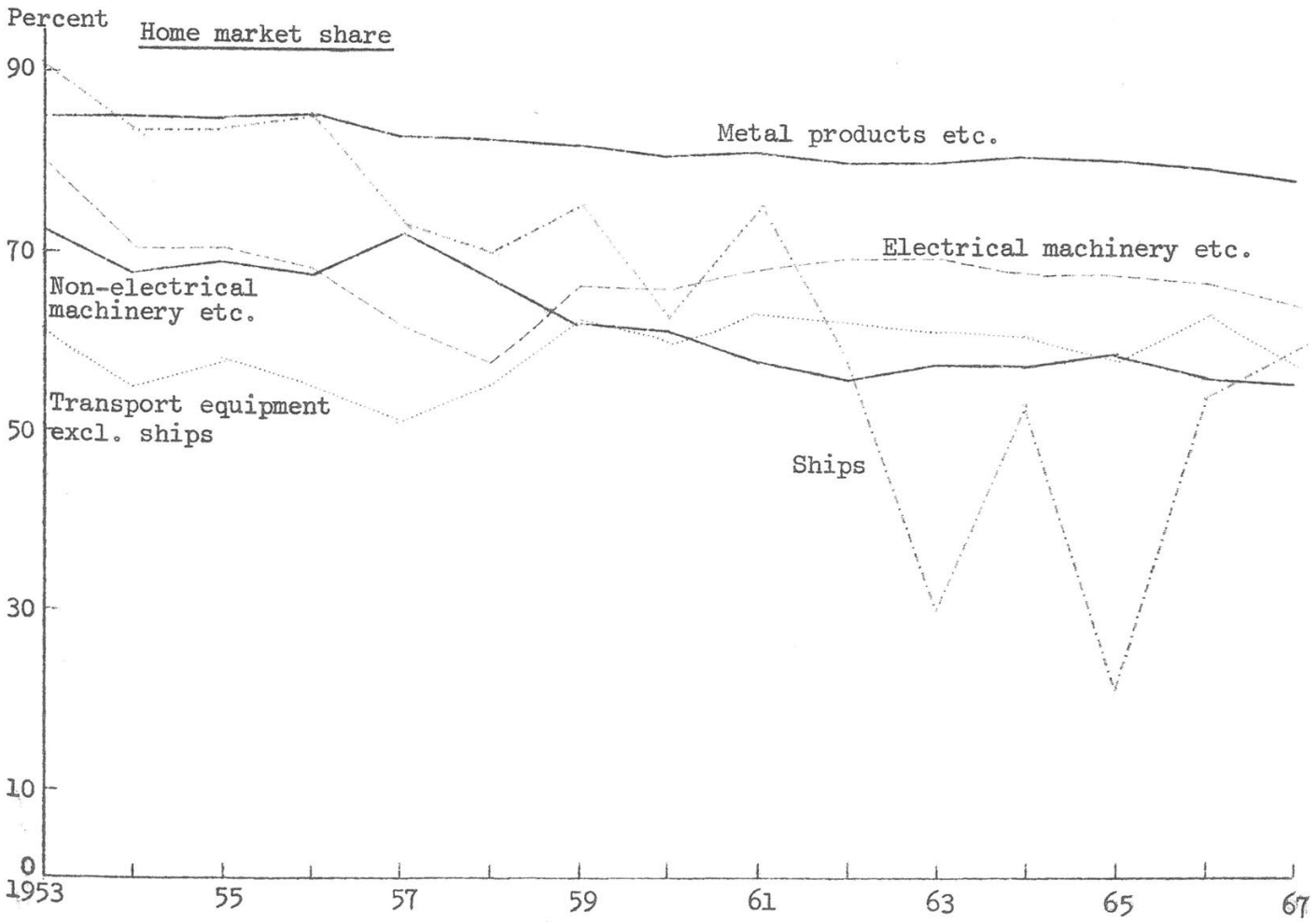
Investigator: Åke Sundström.

Postwar structure and growth of Swedish engineering exports

Exports and imports of engineering products have had similar rates of growth during the postwar period. From 1953 to 1967 imports increased annually by about 12 percent and exports by about 11 percent. Because imports grew somewhat faster, the home market share of the engineering industry, i.e., its share of the engineering products consumed in Sweden, declined from 76 percent in 1953 to 63 percent in 1967. But at the same time there was a considerable rise in the export ratio, i.e., the proportion of Swedish output exported. The latter points to a continuing specialization within the engineering industry. At a time when world trade is being liberalized, such specialization is natural for a sector with a heterogeneous production technology and highly differentiated products.

Diagram 12. Export ratios and home market shares for major groups of the engineering industry, 1953-1967





In Diagram 12 the engineering industry has been divided into five subgroups. Even at this level of aggregation, however, the picture is not appreciably altered. Tendencies towards rising export ratios are observable for all the subgroups. This has been particularly true in regard to exports of ships and other transport equipment. For other commodities the tendency towards a rising export ratio seems to be mainly concentrated in the period following the formation of EFTA, during which time the proportion of output destined for EFTA members has substantially risen for all five groups.

The home market shares seem to have been falling regularly with the exception of transport equipment (excluding ships), whose share has been relatively stable. On the other hand, the shipyards have lost a sizable portion of the domestic market, which has also been the case for the manufacture of electrical and non-electrical machinery.

Investigator: Lennart Ohlsson.

Size and growth of engineering firms

Earlier studies of corporate size were preoccupied with the question of the relation between the size distribution of firms and different types of competition. In recent years greater interest has focused on the dynamic factors which determine the size distribution, with special reference to the growth of firms. Among other things, these studies have found that growth is largely independent of corporate size, which does not seem to agree with the hypothesis that large firms would grow faster than small firms owing to economies of scale. The explanation must be sought instead among those factors which primarily affect growth, such as profitability, the proportion of profits paid as dividends, and the degree of internal financing. Of these factors profitability is probably the most important insofar as it not only determines the ability of a firm to grow with internally generated funds, but also affects its possibilities of obtaining new capital from outside sources.

This inquiry is a study of the engineering industry. Its chief concern is to analyze the determinants of internal corporate growth, e.g., profitability dividends and degree of internal financing. One of the questions it seeks to answer is: To what extent do these variables depend on corporate size and on different dynamic factors such as the speed with which new products are introduced, new plants set up, etc.? The study also goes into the effect of size on the technical, economic and financial structure of the firm.

Further, a descriptive account of the development of the Swedish engineering industry will be made and this will be related to the above-mentioned analysis. Comparisons will also be made with developments in other highly industrialized countries such as the United States, Great Britain and West Germany.

Investigator: Göran Eriksson.

The chemical industry

An international comparison reveals that the chemical industry constitutes a smaller part of the manufacturing sector in Sweden than in other industrial countries. According to OECD statistics, this proportion comes to slightly more than 6 percent in Sweden, whereas it exceeds 11 percent in the US and on the average exceeds 9 percent in eight Western European countries such as the US, West Germany and the United Kingdom, which already have a well-developed chemical industry, but it has been lower than in, say, Holland, Spain and Japan.

The chemical industry is highly heterogeneous and encompasses a wide range of manufactures. Its size depends to some extent on how the industry id defined, but it usually includes plants as disparate as those which produce basic plastics, fertilizers, paints, cosmetics and matches. Many of these subgroups are extremely expansive, among them the manufacture of plastic materials, whereas others, such as the manufacture of matches and fats, belong to the stagnating parts of Swedish industry. A feature common to all subgroups of the chemical industry is the sharp rise in their capital intensity during the 1950's and 1960's. Thus, employment in the industry has increased by only about two percent per annum, and in some subgroups employment has declined even though output has increased.

After a survey of the factors which have determined the development so far, this study of the Swedish chemical industry aims to assess the industry's future growth prospects in our country.

Seen in historical perspective, the limited size of the Swedish chemical industry is mainly explained by our lack of domestic resources of chemical raw materials such as oil, coal and salt. Today, however, this is no longer a serious drawback. Thus coal has been superseded by oil, and transport costs of oil have been reduced so that they no longer bear crucially upon our ability to compete with other European countries. On the

other hand, those Swedish manufactures which used to draw heavily on cheap domestic electric power have also had to give way to petrochemical processes. The same holds to some extent for the production of organic chemicals based on sulphite alcohol.

Capital intensity is especially high in the heavy chemical industry, where only a small number of persons is needed to run the plants. Technological advance has also led to a rapid increase of optimal plant size. The cost structure is characterized by a low proportion of variable costs. This means, among other things, that the ability to borrow in the capital market and the possibility to sell on a large market have come to bear significantly on the growth of Sweden's heavy chemical industry.

Figures on Swedish foreign trade in chemical products show a large import surplus. During the 1960's the Swedish chemical industry's home market share declined while at the same time its export ratio increased. This might be interpreted to mean that the Swedish chemical industry has managed to compete fairly well internationally and that the falling home market share may be attributed to specialization and the division of labour between firms in Sweden and abroad. However, the increased export ratio is due to the extension of the "home" market to the rest of Scandinavia and Finland, while the proportion of exports going to countries outside EFTA has diminished. Table 8 illustrates the market conditions for chemical products.

The major firms in Sweden's chemical industry are relatively small internationally as well as in comparison with firms in other Swedish industries. Some of Sweden's largest chemical firms, moreover, produce mainly non-chemical products (this seeming paradox is,of course, due to the method of industrial classification) Within the heavy chemical industry, the manufacture of most products is concentrated to a small number of plants belonging to a few firms. The possibilities of improving the industry's competitiveness through mergers or cooperation between firms would therefore appear to be limited.

Table 8. Home market shares and export ratios for the Swedish chemical industry, 1959, 1963 and 1967

Commodity	Home market share, %[a]			Export ratio, %[b]					
				Total			EFTA		
	1959	1963	1967	1959	1963	1967	1959	1963	1967
Output of chemical industry	63.9	63.6	62.8	17.0	18.8	20.4	7.1	9.4	12.0
Whereof:									
Organic chemicals	48.9	42.3	42.9	33.7	39.6	41.2	11.7	16.2	20.1
Basic chemicals and inorganic chemicals	50.7	57.7	60.6	24.4	17.7	17.9	10.2	10.1	10.6
Paints and dyes	74.4	74.1	72.1	5.2	5.8	8.6	2.0	3.5	6.2
Drugs	66.0	58.4	57.4	12.7	22.5	23.2	6.8	11.3	14.2
Cleaning and toilet goods	84.8	84.1	72.8	3.1	5.5	11.2	2.2	3.3	8.1
Plastic materials and intermediates	53.5	50.8	53.5	32.2	36.5	31.4	10.2[c]	20.5	21.3
Miscellaneous chemical prod.	70.8	72.6	73.5	17.0	18.0	17.5		7.2	8.1

a) "Home market share" refers to that proportion of the consumption of chemical products manufactured in Sweden.

b) "Export ratio" refers to the proportion of Swedish production of chemical products which is exported.

c) This figure includes explosives.

Investigator: Olle Renck.

Profitability, investment demand and growth

This project is a direct continuation of the study of "The Credit Market and Industrial Investments" that was published in 1967. The object of the first investigation was to study the short-term variations of investment as well as the effects of economic policy, with emphasis on monetary policy in the postwar period. In the present study particular attention is devoted to the factors which make for different growth rates between industries.

An analysis of this problem involves, among other things, a consideration of the production structure of different industries, and also of the significance of the channelling of financial resources between firms and sectors.

It is evident that expectations of firms about the future must enter into a study such as this one. The hypothesis, that the firm's expectations of future profits, based on its historical experience and other factors, are fundamental for its decisions to invest and expand is used as a starting point for the analysis. For this reason comprehensive estimates of profitability will be calculated for different industries.

This project has for various reasons been carried out as a series of studies. The first study, to be completed shortly, analyzes the series of interviews dealing with the planning methods employed by large industrial firms; these are reported under a separate heading below. The profitability calculations for Swedish shipbuilding, which form an appendix to the book on the Shipbuilding Industry (see p. 13), constitutes another part of this project. The next study will include a description of theoretical models and an empirical analysis of the correlations between wage-determination and corporate profits. Lastly, profitability calculations which are now being worked out for the different industries will be presented and analyzed.

Investigator: Gunnar Eliasson.

Corporate planning

This study forms part of the project entitled "Profitability, Investment Demand and Growth". It is based on interviews of selected American and Swedish firms. The American part of the interview series has already been completed. Some 35-40 firms, more than half of which are American, will be interviewed.

An investigation of this kind can scarcely aim to be representative in the sense that its findings are supposed to illustrate how planning usually proceeds and to identify those methods which are generally used among, say, American firms. Indeed, the sampling of firms was deliberately biased with the principal object in mind, which is to form an idea of how sophisticated planning problems are solved. For this reason the sample of both American and Swedish corporations favour large firms, especially those which are relatively successful. A common notion is that American firms employ more sophisticated planning methods than Swedish firms of corresponding size. The validity of this hypothesis will be considered when all the Swedish interviews are completed.

Some preliminary results can be mentioned here. Responses to the American interviews disclosed, perhaps somewhat unexpectedly, that passive forecasting was not a prominent objective of the firm's long-range planning. It was above all in short-term planning (budgeting) that the forecasting motive and the control motive had the greatest importance. As to long-term planning, it turned out that much greater attention was given to specifying the forms that policy control of the firm's whole future activities should take. This could be done in various ways and the significance of policy control clearly emerged from the extent to which head office executives (the "decision makers") took active part in the planning work. An important component of long-range planning was the setting of targets for different divisions and product lines. It was then up to different executives in the corporate hierarchy to specify solutions for achieving these goals. Sometimes these solutions were worked into the formal plan, wholly or partly, sometimes not at all. It should be stressed that goals which call on divisions to focus exclusively on the most profitable markets and products (defined in some time dimension) formed but one component in an often extremely complicated mix of goals for the firm's actions. An apparently common restriction on the options of planners was that future operations should stay within the limits of earlier, traditional product lines and production techniques. However, there were some firms which deviated from this pattern and which saw no limitations on their sphere of activity. A typical feature of these firms was a highly decentralized organization for all functions except financial control and long-term planning.

Both short-term and long-term plans were also used to measure how well different divisions performed vis-à-vis one another. This aim often conflicted with the use of plans for other purposes, insofar as the originally established and approved plan was "locked" for at least the rest of the financial year. It often happened in such cases that necessary revisions for other purposes (control, etc.) were no more than partial.

Investigator: Gunnar Eliasson.

Stagnating industries

Increasing attention has come to be devoted to the subject of stagnating firms and industries. One reason for this is the severe labour market problems caused by the increased number of plant shutdowns. In partnership with the Department of Business Administration at the University of Uppsala, the Institute is undertaking a study of the "stagnating industries", i.e., those firms or industry groups which have relatively slower rates of growth.

Stagnating production is often caused by factors that cannot easily be directly influenced by the individual firm. A generally falling demand would be an example of such a factor. Industries or firms which are growing slowly or declining are assumed to be influenced not only by the original and often secularly acting causes of stagnation, but also by the effects of environmental changes. The latter are exemplified by a dwindling supply of skilled labour and a shortage of capital which may be reinforced owing to expectations of continued stagnation. Reverse conditions will obtain for firms which are expanding rapidly. The possible operation of self-generating processes is serious to the extent that firms and industries which end up in this situation become less and less capable of halting the downward trend while the process continues.

This study seeks to isolate at the level of industry groups some essential environmental factors and to study their change in connection with stagnation processes. The result may provide a basis for a more penetrating analysis of structural changes in different stagnant industries. The effect of stagnant production on the behaviour of individual firms will be explored later in the form of case studies.

Investigator: Leif Aronsson.

Effects of trade barriers

The growth of Swedish foreign trade during the postwar period, and of world trade generally, may be related to the significant changes that have taken place in different kinds of barriers to international trade. Trade barriers may be broadly interpreted to include tariffs, quotas and other non-tariff restrictions, as well as transport costs. The objective of this study is to investigate the effects of changes in certain trade barriers on the volume of Swedish foreign trade, on its distribution by countries, and on the structure of domestic production. The project is broken down into three stages: a survey of existing trade barriers, an attempt to estimate the effects of past changes on trade and production, and lastly a discussion of the effects of hypothetical future changes.

The study is still in its beginning stage. However, certain estimates for Swedish imports to gauge the effects of tariff reductions within EFTA have been calculated. Table 9 sets forth the effective tariff rate, i.e., the protective rate on value added, for the output of selected products in Sweden in 1959. The figures in the table give a measure of the advantages towards producers in Sweden and non-EFTA countries that tariff dismantling has given to intra-EFTA producers when selling on the Swedish market. It turns out that the tariff protection for value added is consistently higher than the duty on the finished product, because tariffs on raw materials and intermediate goods are lower than on finished goods. The tariff protection is also very unevenly distributed between products.

Investigator: Lars Lundberg.

Ends and means of transport policy

During the 1930's, the monopoly position of the railways was undermined by competition from fast-growing road transport. Many countries then adopted a transport policy which sought to impose extensive regulations on important segments of road traffic. Among its objectives were to achieve what was called "competition on equal terms" and an "economically correct allocation" of transports between rail and road. In addition transport policy was aimed at limiting competition within road traffic. In 1933 Great Britain passed a new Road and Rail Traffic Act; in 1935 a new Motor Carrier Act was passed in the United States; and in 1940 Sweden was given its Motor Transport Act. Although the controls imposed by these and other countries differed in details, the regulative philosophy behind them was more or less similar.

Table 9. Effective and nominal tariff rates on selected manufactured products in Sweden, 1959

Product	Effective duty	Nominal duty
Basic chemicals and chemical compounds	5.1	3.4
Medical and pharmaceutical products	-0.6	1.3
Plastics	27.8	10.9
Rubber products	22.8	11.4
Newsprint	-1.8	0.0
Cotton fabrics	40.0	13.1
Woollen fabrics	61.4	16.8
Synthetic fabrics	35.6	15.9
Glass, glass articles	21.5	12.9
Pig iron, ferroalloys, etc.	2.1	0.6
Standard merchant iron and steel, plate of standard merchant iron and steel	9.2	5.1
Hand and machine tools, knives, etc.	13.4	8.3
Combustion engines, etc.	5.3	8.5
Business machines	8.1	7.4
Metalworking machines	8.2	7.5
Pumps and centrifuges	13.1	10.0
Electric generators, motors, etc.	14.1	10.5
Electronic equipment	23.2	14.8
Electric home appliances	13.5	9.9
Passenger cars	38.4	14.5
Ships and boats	-9.0	0.0
Clothing except knitwear	19.7	14.8
Knitwear	24.6	17.4
Shoes	30.2	13.9

The essential features of the transport regulations which emanated from the 1930's have lived on to this day. Certain adjustments to altered technical and economic conditions have been made in different countries, but the restrictive nature of transport policy has largely survived. Indeed, tendencies to tighten the restrictions have become discernible of late, mainly in consequence of the increasingly precarious economic situation for railways in many countries. An example is the 1967 Leber Plan in West Germany. The 1968 Transport Act in Great Britain likewise provided for a greater measure of public control; on the other hand, this law also contained rules which served to ease earlier restrictions.

Given the background here outlined, the new transport policy adopted by the 1963 Swedish Riksdag is fairly unique internationally. Significantly, it called for giving the railways more commercial freedom and relieving them of obligations dating from the 19th century. In respect of road transport, the control of and the detailed licensing system were to be abolished. Furthermore, the provision of transport services in rural areas was to be directly subsidized as a "public service".

The new transport policy was to be gradually introduced in three stages, of which the first two have already been carried out. However, the third stage has been postponed indefinitely and in its place we have been given a lively debate on such matters as the economic goals of the Swedish State Railways, the provision of transport services in rural areas, road safety, problems of urban congestion and environment, and the role of public transport in urban areas.

The effects to date of the 1963 Riksdag decision will be one of the subjects analyzed in a research project recently commenced at the Institute. This "effect changes in study" will deal with such matters as the development of transport prices, structural changes in the road haulage industry, and the competitiveness of railways on different transport markets. In addition, cost functions for different kinds and modes of transport will be examined, and the supply and demand situation in different transport markets will be analyzed. Here the discussion will relate on the one hand to a system without regulation and, on the other hand, to conditions under the system of controls that has operated in most countries during the postwar period. This should make it possible to draw certain conclusions about short-term and long-term effects of the traditional transport policy on the transport sector itself and also on the rest of the national economy.

Investigator: Lars Kritz.

Development of the Swedish distribution system

A distinguishing feature of the retail trade in Sweden is its concentration in large population centres. The present study is concerned with the retailing development for the largest of these centres, which are here referred to as retail trade markets. One of the many questions dealt with is the extent to which retail trade markets differ from one another in terms of efficiency.

Measuring efficiency in this field involves a number of problems, one reason being that a retail trade market is not a single decision making unit but rather the result of actions on the part of individual consumers and retailers. If efficiency is measured as factor costs for a given sales volume, and if it can be assumed that demand and production functions are equal on different markets and that factor and product prices do not vary systematically between markets in the same period, differences in efficiency must be due to differences in productivity between the markets. In other words, higher factor costs would then be entirely explained by lower productivity for the factors of production. In the short run such efficiency variations are possible without necessarily admitting of definite conclusions about competitive conditions on the markets. One reason may be that firms retain varying degrees of excess capacity to meet their long-run requirement for enlarged capacity. This problem, which among other things makes it necessary to consider variations in capacity utilization between markets, is of a dynamic character and hence cannot be analyzed on the basis of observations from a single year.

Differences in efficiency may be illustrated by comparing, in a given year, factor costs for a sales volume of 100,000 Sw.Cr on the relatively "best" and "worst" markets in terms of costs. With annual factor costs estimated at 17,000 Sw.Cr per unit of labour and 175 Sw.Cr per unit of capital (square meter of store space), the costs on the "best" market (in 1963) work out at 79 percent of the costs on the average market. On the "worst-market" costs are 110 percent of costs on the average market. In this instance the difference between average-market costs and "worst-market" costs is solely attributable to differences in capital costs. But, as was observed earlier, this difference can be explained if the observations are put in a long-run perspective.

Investigator: John Skår.

Salaried employees in industry: pay structure and pay determination

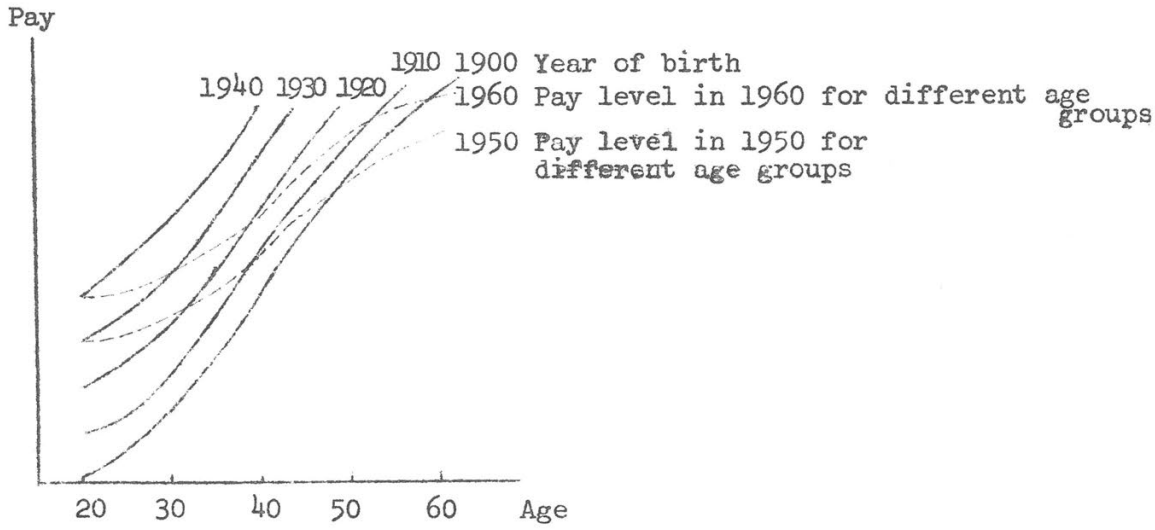
This study will in various ways investigate the pay structure for that group of salaried employees in industry with upper secondary or higher education, how these pay relations have changed, and identifying the causes. The latter problem has special relevance in view of the increasing number of graduates from Swedish educational institutions in recent years.

The study starts out with a statistical description of the educational composition in different occupations, industries, etc. The mobility of labour and changes in educational composition are also analyzed.

Methods based on analysis of variance are used to examine the pay structure. Main and interaction effects are estimated for the factors age, education, occupation, groups of industry and cost-of-living area. These estimates refer to the years 1957 to 1968. The comparison made is of the "ceteris paribus" type, i.e., the employees whose average salaries are being compared are assumed with the exception of (say) occupation to be otherwise similar. Thus with respect to occupation, for example, average pay differentials may amount to 200 percent. Similarly, average pay differentials of 35-50 percent are due to age, 15-20 percent to education, about 10 percent to industry, and about 5 percent to geographic cost-of-living differences. It should be emphasized that the findings refer to average pay differentials; individual differentials are naturally much greater. Interaction effects are of about the same magnitude as industry effects. Here the interaction between age and occupational level produces the biggest effects. (Preliminary findings have been presented in a research report entitled "The Pay Structure among Salaried Employees in Industry, 1957-1964", published in 1968 by the Department of Statistics at the University of Stockholm.

Another model is used to permit detailed study of how pay relations change and also to measure the pay differentials between differently educated manpower in life time salaries. It is based on the simple observation that the earnings of an individual can be obtained by adding his initial salary to his successive pay increases. By studying the causes of annual changes in initial salaries and successive pay increases and formalizing this in a suitable manner, it becomes feasible to draw upon the resulting model to study, first, how the pay-age profiles in a cross-section (the broken curves in Diagram 13) shift and change curvature; and second, to study the average movement of salaries for a cohort (the continuous curves in the diagram) and estimate corresponding life salaries. The model

Diagram 13. Movement of salaries by cohorts which indicates average pay-age profiles



can also be used for other purposes, for instance, to study how changes in the demand for and supply of different types of labour affect pay changes and are subsequently transmitted to pay levels across the life cycle.

The project is supported by the National Central Bureau of Statistics and the Department of Statistics at the University of Stockholm.

Investigator: Anders Klevmarken.

The problem of wage drift

In order to analyze the causes underlying wage drift, the Swedish Employers' Confederation (SAF) has collected data on manual workers employed by firms affiliated with one of SAF's member associations. The investigation, which covers the second quarters in each of the years from 1956 to 1968, views wage drift as a function of a number of wage-drift variables. These variables have then been made a basis for a systematic classification of the basic data. That in turn has permitted comparative analyses of wage movements for different groups of workers and firms, as well as estimates of the quantitative shares contributed by certain wage-drift components to the wage drift observed.

The character of the collected data is such that an extended treatment of the wage-drift problem would be possible. With certain additions, for example, the data could be used for econometric studies. The Institute has therefore taken over this material and recently begun to process and analyze it further.

Investigator: Yngve Åberg.

Effects of abolishing rent control

The study seeks to analyze the effects of alternative methods to abolish the present system of rent control. However, this also requires a study of how rent control, the fixing of maximum rents for State-mortgaged houses by the National Housing Board, and the setting of rents by nonprofit and cooperative housing companies have in fact functioned.

Among the topics to be investigated are the effects of abolishing rent control on rent level, rent structure, income structure, distribution of the housing stock by households, and the conditions governing the construction of new dwelling units. The great regional differences of rent movements which may be expected when rent control is phased out will also be taken into account.

Investigator: Assar Lindbeck.

Formation and discontinuation of firms during the postwar period

This recently commenced project on new business starts in Sweden during the postwar period can be seen in part as a continuation of the work by Professor Erik Dahmén, "Swedish Industrial Entrepreneurship", which was published earlier by the Institute. The new inquiry differs from Dahmén's in various ways, one of them being that greater weight is attached to a quantitative analysis of causes.

Primary emphasis is put on a historical and statistical survey of the number of new firms and plants established during the postwar period and their distribution by industries, regions and years. In addition, certain characteristics of the new firms, such as profitability and growth will be studied. On the basis of analyzed interindustry variations of entry rates over a given time period and variations of entry rates over time within industries, attempts will be made to quantify the relationship between business starts and different variables such as profit prospects and necessary starting capital. The significance of new products and method innovations for new business starts will be given special attention.

The statistical description of new business starts will require an extensive tabulation of data in existing business records, company directories and other sources, as well as supplementary information (by means of questionnaires circulated to firms or direct contacts with them).

Investigator: Gunnar Du Rietz.

Costs of advertising

At the request of the government Committee of Inquiry into Advertising Costs, the Institute has collaborated with the National Central Bureau of Statistics in a study of advertising costs in Sweden for 1965-1967. Its main objects were to estimate total advertising costs, with breakdowns for groups of industry and other sectors of the economy, and to estimate that proportion of advertising costs which relates to private consumption of goods and services.

The investigation covers the period from October 1968 to September 1969, and was made in the form of questionnaires sent to about 2,600 randomly sampled firms. Somewhat more than 95 percent of the firms responded.

The preliminary tabulations disclose that advertising costs totalled about Sw.Cr 1,400 million in 1967. See Table 10 below. Corresponding

Table 10. Costs of advertising in relation to sales (or equivalent) in 1967

	Sales (or equivalent) Sw.Cr mill.	Costs of advertising Sw.Cr million	Costs of advertising % of sales
Manufacturing	61,809	692	1.07
Wholesaling[a)]	52,295	342	0.65
Retailing[a)]	30,353	284	0.93
Insurance companies	3,129	18	0.57
Commercial banks	..	24	..
Saving banks	..	19	..

a) Excludes advertising allowances received.

amounts for 1965 and 1966 fall just short of Sw.Cr 1,200 and 1,300 million, respectively, at current prices. This represents a rate of increase of 11 percent between 1965 and 1966, and of 8 percent between 1966 and 1967.

The investigation did not include the smallest firms in the sectors listed above. Other sectors of the economy, such as agriculture, building and construction, and most service-producing firms, are not included at all. The omitted groups of firms probably account for only a little more than 10 percent of total advertising expenditures.

Earlier estimates of advertising costs are much higher. According to the Swedish Audit Bureau of Circulations (TS), the estimated advertising costs for 1967 come to just above Sw.Cr 2,000 million. The difference is mainly due to the inclusion by TS of classified advertising (wants ads, public notices etc.) amounting to about Sw.Cr 400 million.

A perhaps surprising datum in Table 10 is the high advertising expenditure of the distributive trades in relation to that of manufacturing (even though that portion of their advertising which is financed by industry has been excluded). That is partly due to the fact that importers and sales companies are classified as trading enterprises. These firms account for about one-third of the advertising costs incurred by the distributive trades.

It would have been desirable to collect data on total corporate marketing costs, but owing to difficult problems of measurement the sampled firms were only asked, in addition to costs for advertising, to specify the

costs of their personal selling. As expected the latter costs are much higher than the costs of advertising alone. For manufacturing the ratio is 2:1, for wholesaling 4:1, for insurance companies 16:1, and so on.

The study also presents data on sales and advertising costs for some ninety commodities, most of them intended for private consumption. This part of the study was concerned to find out what differences, if any, there were between different products.

The commodities with the highest advertising intensity are consumer of chemical products: toothpaste 26 percent, detergents 18 percent, soap 17 percent and cosmetics 12 percent. Consumer durables have an advertising intensity of about 3 percent, while advertising expenditures on food and clothing average no more than one percent of sales.

Investigator: Rolf Rundfelt.

Competition on equal terms

Growing public control of business activities is an international phenomenon. Although the forms of such control vary between countries, there is a consistent tendency to adopt more selective policies towards the business community. The present study discusses different criteria that can be applied to these elements of a mixed economy in the market mechanism. Among the subjects considered are credit policy, competition between road and rail transports, public enterprise and competition with other countries.

An important question is the effects of selective economic policies. The fact that a firm is subsidized or otherwise stimulated to engage in an undertaking also affects other firms in the economy. These repercussions may be of varying character. One point of departure is to assess the fairness aspects of competition between individual firms. Another is the allocation of resources between firms, industries and sectors within the economy. Moreover, selective policies do not always have clear-cut effects on firms in their perceptions of risks in their economic activities.

Investigator: Jan Bröms.

Households as producers of goods and services

For much of what is produced in the economy no prices or wages are paid. The goods and services produced are consumed by the person or persons who themselves produce them. Household production can be interpreted in a very broad sense from do-it-yourself hobbies to activities that can be perceived

as inescapable in every-day life. The transformation from a preindustrial system of economically self-sufficient households to a market economy based on the division of labour and specialization has been rapid, and it is a process that is still going on. This study focuses on some factors which affect the choice of individuals and households in allocating their working time between specialized gainful employment and home production.

The choice which has the greatest ramifications on the economy as a whole is that made by women between housework and gainful employment. This choice may be affected by the explicit political goal of increasing the rate of participation of women in the labour force. The latter gives rise to problems of considerable magnitude: What advantages of specialization can be gained from, say, different forms of collective childcare? What other tasks in the home can be rationalized or specialized in ways which makes it preferable to obtain them through the market? The household as a production unit is characterized by an extremely small scale of operation. But how inevitable is this smallness of scale and the drawbacks which follow from it? A much discussed problem is whether the preconditions governing the choice between housework and gainful employment can be altered by changes in the social environment and in technology. For example, what do expansion and localization of the retail trade network signify?

In this context it is natural to consider the economic incentives. An important factor here would be the tax system, which often causes troublesome treshold effects. Since it has proved impossible to collect data on these problems without considerable expense, the study will essentially be theoretical.

Investigator: Carl Johan Dahlman.

OTHER INSTITUTE ACTIVITIES

During 1969 several members of the Institute's staff published articles in periodicals and journals and served as lecturers at conferences and courses. Most of these appearances were connected with ongoing projects within the Institute.

The Director of the Institute has been a member of the Economic Research Council and the Swedish Council for Social Science Research. He also took part as adviser in the work of the Council for Industry Policy and the committee of inquiry into the budget. Dr. John Ekström served as adviser on the government committee of inquiry into the textile and apparel industries, the committee on shipbuilding and the committee of inquiry into pipeline transport of oil and gas. He has also been a member of the Consultative Committee at the Institute for European Studies in Brussels. Dr. Lars Kritz has served as adviser on transport policy delegation within the Ministry of Transport and participated in a committee of the National Central Bureau of Statistics assigned to plan an investigation of goods transports by road. Dr. Yngve Åberg has served as advisor on the 1963 Working Hours Committee. Dr. Gunnar Eliasson has been adviser to the 1968 government committee of inquiry into capital markets and the 1967 inquiry of construction planning.

The Institute participated in the planning work for the 1969 study of household budgets and was also represented in a committee of the National Central Bureau of Statistics concerned with organizing the 1971 business census.

THE INSTITUTE'S PUBLICATIONS

(Note: The Institute's publications are in Swedish but the most of them have a summary in English.)

1969

Varvsindustrins problem. Efterfrågan, konkurrens, framtidsutsikter[1] (Problems of the Shipbuilding Industry. Demand - Competition - Future Prospects) av John Ekström. Med bedömning av den svenska varvsindustrins utvecklingsförutsättningar av Ragnar Bentzel, John Ekström, Lars Nabseth 243 pp., Sw.Cr 30:-

Kapitalbildningen i Sverige 1861-1965 (Capital Formation in Sweden 1861-1965). Lars Lundberg 154 pp., Sw.Cr 20:-

Den ekonomiska politiken i Sverige och dess verkningar (Economic Policy in Sweden and its Effects). Villy Bergström 151 pp., Sw.Cr 20:-

Utrikeshandeln och den ekonomiska tillväxten i Sverige 1871-1966 (Foreign Trade and Economic Growth in Sweden 1871-1966). Lennart Ohlsson 151 pp., Sw.Cr 20:-

Arbetskraftsutbudets utveckling i Sverige 1870-1965 (The Supply of Labour in Sweden 1870-1965). Per Silenstam 115 pp., Sw.Cr 20:-

Nordek och jordbruket - en utredning om innebörd och konsekvenser för jordbrukets del av en nordisk tullunion (Nordek and the Agricultural Sector. An Investigation of the Interpretation and Consequences of a Scandinavian Customs Union for the Agricultural Sector). Odd Gulbrandsen 70 pp., Sw.Cr 18:-

Produktion och produktivitet i Sverige 1861-1965 (Production and Productivity in Sweden 1861-1965) Yngve Åberg 124 pp., Sw.Cr 20:-

Jordbruksnäringens ekonomi[1] (The Economics of the Agricultural Sector). Odd Gulbrandsen - Assar Lindbeck 280 pp., Sw.Cr 40:-

Bostadsefterfrågans bestämningsfaktorer[1] (Factors Determining the Demand for Housing). Göran Eriksson - Gunnar Du Rietz 175 pp., Sw.Cr 25:-

The Diffusion of New Technology. A study of ten processes in nine industries Reprint series No. 46, 44 pp. (Särtryck ur National Institute Economic Review maj 1969), Sw.Cr 8:-

Produktionssambanden och vinstutvecklingen i svensk skogsindustri (Production Functions and Profit Developments in the Swedish Forest Industries) Yngve Åberg. Reprint series No. 45, 7 pp. (Särtryck ur Skandinaviska Bankens Kvartalsskrift 1969:1), Sw.Cr 4:-

---

1) English summary

1968

The Credit Market, Investment Planning and Monetary Policy - an econometric study of manufacturing industries. Gunnar Eliasson 111 pp., Sw.Cr 18:-

Bolagsbeskattning och kapitalkostnader[1] (The Corporation Income Tax and the Cost of Capital). Leif Mutén 245 pp., Sw.Cr 40:-

Bostäder och boendeförhållanden i Sverige 1945-60[1] (Housing and Housing Conditions in Sweden 1945-60). Bernt Johansson - Lars Borgnäs 201 pp., Sw.Cr 16:-

Godstransporternas utveckling i Sverige 1950-66 med utblick mot 1980[1] (Freight Transportation Trends in Sweden 1950-66 and the Outlook for the Seventies). Lars Kritz 75 pp., Sw.Cr 16:-

Långtidsutredningens industriprognos för 1970. En granskning och revidering (Prospects for the Swedish Industry, a Revision for 1970). John Ekström 66 pp., Sw.Cr 12:-

Bostadsproduktionens prisutveckling[1] (Residential Construction Prices in Sweden, 1950-65). Branko Salaj 196 pp., Sw.Cr 30:-

1967

TV-ägandets utveckling i Sverige 1956-65[1] (Growth of TV Ownership in Sweden, 1956-1965. An Empirical-theoretical Study). Gunnar Törnqvist 235 pp., Sw.Cr 40:-

Resekonsumtionen 1950-75[1] (Travel Consumption 1950-70). Gustav Endrédi 122 pp., Sw.Cr 30:-

Kreditmarknaden och industrins investeringar[1] (Manufacturing Industry Finance and Short Run Investment Behaviour). Gunnar Eliasson 284 pp., Sw.Cr 40:-

Concentration and Structural Adjustment in Swedish Industry during the Postwar Period. Bengt Rydén. Reprint series No. 44, 25 pp. (Särtryck ur Skandinaviska Bankens Kvartalsskrift 1967:2), Sw.Cr 4:-

Problemer i markedsøkonomisk forskning (Some Problems in Marketing and Distribution Research) John Skår. Reprint series No. 43, 24 pp. (Särtryck ur "Markedsføring i 70-årene"), Sw.Cr 6:-

Studier i frånvaro från arbetet[1] (Studies in Absence from Work). Bertil Olsson. Reprint series No. 42, 158 pp., Sw.Cr 25:-

Beklädnadskonsumtionen. Ny analys och prognos för 1975[1] (Consumption of Clothing: New Analysis and a Forecast for 1975). John Ekström - Svante Lundberg. Reprint series No. 41, 138 pp., Sw.Cr 25:-

Den ekonomiska politikens möjligheter att inverka på kapitalresursernas fördelning mellan näringsgrenar och regioner (The Possibilities for the Economic Policy to Influence the Distribution of Capital between Industries and Regions). Lars Nabseth. Reprint series No. 40, 24 pp. (Särtryck ur Kapitalförsörjningen vid den ekonomiska omvandlingen i mindre industriländer. Förhandlingar vid XIX nordiska nationalekonomiska mötet i Helsingfors den 25, 26 och 27 augusti 1966)[x]

---

1) English summary
x) No longer available

Industrifinansieringen perioden 1950-1970 (Manufacturing Finance 1950-1970 - Statistical Survey and Prediction). Gunnar Eliasson. Reprint series No. 39, 67 pp. (Särtryck ur Långtidsfinansiella perspektiv, SOU 1967:6)x)

1966

Industrins finansiering 1955-62[1] (The Financing of Industry in Sweden 1955-62). Bengt-Göran Löwenthal 173 pp., Sw.Cr 30:-

Framtidsperspektiv för svensk industri 1965-1980[1] (Prospects for the Swedish Industry 1965-1980). Ragnar Bentzel - Jan Beckeman 186 pp. x)

Modell och observationer. En studie av empirisk anknytning och aggregation för en linjär produktionsmodell[1] (A Study of Empirical Implementation and Aggregation for a Linear Model). Bengt Höglund 224 pp., Sw.Cr 35:-

Utvecklingstendenser för svensk stålindustri[1] (Trends in the Future Development of the Swedish Steel Industry). Erik Ruist 142 pp., Sw.Cr 30:-

Löneandelen och den ekonomiska utvecklingen. En empirisk-teoretisk studie[1] (Labour's Share and Economic Development). Karl G Jungenfelt 278 pp., Sw.Cr 35:-

Godstransportutvecklingen i Storbritannien (The Transport of Goods in Great Britain - Trends and Problems). Lars Kritz. Reprint series No. 38, 64 pp. Sw.Cr 10:-

Petrokemiska utvecklingslinjer (Trends in Petrochemical Industry). Peter Fitger. Reprint series No. 37, 45 pp., Sw.Cr 8:-

Jordbrukspolitikens mål och medel (Aims and Means in Agricultural Policy). Odd Gulbrandsen - Assar Lindbeck. Reprint series No. 36, 114 s. x)

Den privata konsumtionen 1950-70 (The Private Consumption 1950-70). Göran Albinsson - Gustav Endrédi. Reprint series No. 35, 47 pp. x)

1965

Sjukfrånvaro bland tjänstemän (Sickness Absenteeism for Salaried Employees) Bertil Olsson. Mimeographed, 50 pp. x)

Världens handelstonnagebehov och svensk varvsindustri 1964-80 (The World Demand for Merchant Shipping Tonnage and the Swedish Shipbuilding Industry 1964-80). Göran Norström. Reprint series No. 34, 152 pp. Sw.Cr 15:-

An Empirical Study of Labour Reallocation Gains in Sweden between 1950 and 1960, Gunnar R Österberg. Reprint series No. 33, 34 pp (Särtryck ur The Swedish Journal of Economics 1965:1) Sw.Cr 5:-

1964

Lokaliseringsförändringar inom svensk industri 1952-1960 (Changes in the Location of Manufacturing Industries in Sweden 1952-1960) Gunnar Törnqvist, 163 pp. Sw.Cr 28:-

Reklamens ekonomiska roll[1] (The Economic Role of Advertising). Göran Albinsson, Sten Tengelin, Karl-Erik Wärneryd, 276 pp.x)

---

1) English summary
x) No longer available

Arbetskraftens rörlighet. En studie av en lokal arbetsmarknad[1]
(The Mobility of Labour. A Study of a Local Labour Market). Bengt G Rundblad
269 pp. Sw.Cr 35:-

Inkomstfördelningen under efterkrigstiden. En studie av löneandelens utveckling (Income Distribution after World War II. A Study of the Development of Labour's Share). Lennart Fridén Reprint series No. 32. 50 pp.
Sw.Cr 6:-

Några konsumtionsteoretiska grunddrag. Prognosmetoder och statistiskt material Utdrag ur Den privata konsumtionen i Sverige 1931-1965. Reprint series No. 31, 86 pp. Sw.Cr 5:50

The Locational Decision from the Point of View of the Individual Company
Albert Danielsson. Reprint series No. 30, 41 pp. (Särtryck ur Ekonomisk Tidskrift 1964:2) Sw.Cr 4:-

Raw Materials in International Trade, Karl G Jungenfelt. Reprint series No. 29, 25 pp. (Särtryck ur Ekonomisk Tidskrift 1964:1), Sw.Cr 4:-

1963

The Production System of the Swedish Economy. An Input-output Study
Bengt Höglund & Lars Werin 229 pp. Sw.Cr 25:-

Lastbilstransporter i Sverige 1950-61[1] (The Transport of Goods by Road in Sweden 1950-61) Lars Kritz 220 pp. Sw.Cr 30:-

Offentliga utgifter 1913-58 En sammanfattning av "Den offentliga sektorns expansion" (Public Expenditures in Sweden 1913-58) Reprint series No. 28, 50 pp. Sw.Cr 5:-

1962

Den offentliga sektorns expansion. En studie av de offentliga civila utgifternas utveckling åren 1913-58[1] (The Expansion of the Public Sector - A Study of the Development of Public Civilian Expenditures in Sweden 1913-58)
Erik Höök 572 pp. Sw.Cr 45:-

Svensk populärpress 1931-61. Utvecklingstendenser, marknadsbeskrivning och efterfrågeanalys[1] (Popular Magazines in Sweden 1931-61 Göran Albinsson
197 pp. Sw.Cr 25:-

Befolkning och arbetskraft i Norrland (Population and Manpower Resources in Norrland) Mimeographed, 55 pp. Sw.Cr 8:50

TV i Sverige - 4 kvartalsrapporter 1962 (Television in Sweden - Four Quarterly Surveys) Mimeographed, Sw.Cr 100:-

Framtidsperspektiv för svensk industri - 60-talets första hälft
(Prospects for the Swedish Industry - the first half of the 60's)
Jan Wallander. 186 pp.[x]

Bostadsbristen. En studie av prisbildningen på bostadsmarknaden (Housing Shortage. A Study of Pricing in the Market for Housing) Ragnar Bentzel-Assar Lindbeck - Ingemar Ståhl. Reprint series No. 27, 109 pp. Sw.Cr 8:-

---

1) Swedish summary
x) No longer available

Sveriges handelspolitiska alternativ: Den ekonomiska innebörden (On the Economic Implications of a Swedish Association to the EEC), Staffan Burenstam Linder Reprint series No. 26. 24 pp. (Särtryck ur Ekonomisk Tidskrift 1962:4) Sw.Cr 4:-

Verkstadsindustrins maskinkapital. En studie av dess sammansättning och av "maskiners åldrande och död" (Machinery in Engineering Industries. A Study of Age Structure and Scrapping) Jan Wallander. Reprint series No. 25, 110 pp. Sw.Cr 12:50

Produktivitet och kapitalmängd inom den svenska industrin under efterkrigstiden (Labour Productivity and Volume of Capital in Swedish Manufacturing 1947-58. To Appear in the 1963 Issue of International Economic Papers). Karl G Jungenfelt. Reprint series No. 24, 19 pp. Sw.Cr 3:50

Sysselsättning, penningvärde och framåtskridande. En sammanfattning av stabiliseringsutredningens betänkande:"Mål och medel i stabiliseringspolitiken". (Employment, Price Level and Development) Reprint series No. 23, 109 pp.x)

Dryckeskonsumtionen i Sverige (The Consumption of Beverages in Sweden) Åke Sundström - John Ekström. Reprint series No. 22, 182 pp. Sw.Cr 18:-

1961

Löneökningars verkningar inom industrin. En studie av anpassningsprocessen inom företaget[1] (The Effects of Wage Increases in Industry. A Study of the Process of Adaptation within the Firm) Lars Nabseth, 344 pp. Sw.Cr 35:-

Svensk verkstadsindustri. Struktur och utvecklingstendenser (The Engineering Industries in Sweden. Structure and Tendencies of Development) Göran Albinsson 205 pp. x)

Marknadsundersökning och marknadsforskning. Rapport från kontaktkonferens i Saltsjöbaden den 13-14 februari 1961 (Market Surveys and Market Research. A Report from a Conference on Long Range Planning) Mimeographed, 83 pp. Sw.Cr 25:-

Beklädnadsköpen för hushåll och individer. Ett tvärsnitt år 1958 (Purchases of Apparel by Households and Individuals. A Cross Section for 1958) Mimeographed, 101 pp. Sw.Cr 40:-

TV i Sverige - 4 kvartalsrapporter 1961. (Television in Sweden - Four Quarterly Surveys) Mimeographed Sw.Cr 100:-

Investeringskalkyler enligt MAPI-metoden anpassade till svenska skatteförhållanden (Investment Calculations according to the MAPI-method, adapted to Swedish taxation) Bertil Eneroth. Reprint series No. 21, 27 pp.x)

1960

Industriföretagets produktionseffektivitet. Några mätningsmetoder[2] (Production Efficiency of the Industrial Firm. Some Methods of Measurements) Erik Ruist 108 pp. Sw.Cr 20:-

Sverige inför europeisk integration (Sweden and the European Integration) John Ekström, Mimeographed. 94 pp. Sw.Cr 7:50

1) English summary
2) Published in English by OECD
x) No longer available

Industriproblem 1960 (Industrial Problems in 1960) Göran Ahrsjö et al. 196 pp. x)

IUI:s bilprognos - genomgång och revidering hösten 1960 (The Demand for Cars in Sweden - a Revised Forecast in Autumn 1960) Jan Wallander - Bertil Olsson. Reprint series No. 20, 8 pp. Sw.Cr 3:50

Prisdifferentiering inom handeln. En studie av köparprestationer ur leverantörens synpunkt (Price Differentiation in the Trade. A Study of the Buyer's Service from the Seller' s Point of View) Lars Lidén - Bengt A Holmberg. Reprint series No. 19, 118 pp. Sw.Cr 10:-

IUI:s konsumtionsprognos för år 1965. En granskning och revidering (The Private Consumption in Sweden. A Revision of the Forecasts) Göran Albinsson et al. Reprint series No. 18, 106 pp. Sw.Cr 9:50

1959

Perspektiv på Västeuropas utveckling 1955-75 (Prospects of Development in Western Europe 1955-75) Ingvar Svennilson. Reprint Series No. 17, 85 pp.x)

Skiftarbete i verkstadsindustrin. En undersökning rörande de ekonomiska förutsättningarna (Shiftwork in the Engineering Industries - A Study of the Economic Conditions) Lars Lidén - Jan Wallander. Reprint series No. 16, 131 pp. x)

Kapitalbildningsproblemet. Några samhällsekonomiska synpunkter (Problems of the Accumulation of Capital) Erik Dahmén. Reprint series No. 15, 78 pp.x)

Användning av befolkningsregistret för undersökning av arbetskraftens rörlighet - en metodstudie (The Use of the Population Register in Investigations of the Mobility of Labour - A Study of Methods) Jan Gillberg - Bengt G Rundblad. Reprint series No. 14, 14 pp. (Särtryck ur Statistisk Tidskrift 1959:1) Sw.Cr 2:-

1958

Studier i bilismens ekonomi (Studies in the Economic Effects of Motoring) Jan Wallander 364 pp. Sw.Cr 35:-

Den textila konsumtionen[1] (The Consumption of Textiles) John Ekström 289 pp.x)

Vår konsumtion, återblick - prognos (The Private Consumption - A Retrospective Survey and a Forecast) Göran Albinsson 123 pp. Sw.Cr 5:-

Oljan i svensk ekonomi (Petroleum in Swedish Economy) Jan Gillberg - Erik Höök. Reprint series No. 13, 68 pp. x)

Jordbruket under omvandling (The Structural Transformation in Swedish Agriculture and Migration 1750-1970) Odd Gulbrandsen - Göran Albinsson Reprint series No. 12, 51 pp. Sw.Cr 2:-

---

1) English summary
x) No longer available

Input-Output och den strukturella interdependensen (Input-Output and the Structural Interdependence) Bengt Höglund. Reprint series No. 11, 35 pp. x)

Industriens Utredningsinstitut[1] (The Industrial Institute for Economic and Social Research) Jan Wallander Reprint series No. 10, 6 pp (Särtryck ur Skandinaviska Bankens Kvartalsskrift 1958:2) x)

Konsumtionen i Sverige 1931-1965[1] (Consumption in Sweden 1931-1965) Ragnar Bentzel. Reprint series No. 9, 20 pp. (Särtryck ur Skandinaviska Bankens Kvartalsskrift 1958:1) x)

1957

Den privata konsumtionen i Sverige 1931-65 (The Private Consumption in Sweden 1931-65) Ragnar Bentzel et al. 475 pp. x)

Strukturomvandlingen i jordbruket [1] (The Structural Transformation in Agriculture) Odd Gulbrandsen 252 pp. Sw.Cr 24:50

Efterfrågan på televisionsapparater i Sverige - en reviderad prognos (The Demand for Televisionsets in Sweden - A Revised Forecast) Jan Wallander - Carl Gustav Dahlerus. Reprint series No. 8, 31 pp. Sw.Cr 5:-

Verkstadsindustrins orderstatistik - några metodproblem (Statistics of Orders in Engineering Industries - Some Methodological Problems) Ragnar Bentzel. Reprint series No. 7, 22 pp. x)

Om aggregation av produktionsfunktioner (On Aggregation of Production Functions) Ragnar Bentzel. Reprint series No. 6 (Särtryck ur 25 Economic Essays in Honour of Erik Lindahl) Sw.Cr 2:-

1956

Bilägaren och bilen (The Car-Owner and his Car) 112 pp. Sw.Cr 9:50

Produktivitetsproblem i den penning- och lönepolitiska diskussionen i vårt land (Productivity Problems in the Discussion of Monetary and Wage Policy in Sweden) Ragnar Bentzel. Reprint series No. 5, 18 pp. (Särtryck ur Ekonomisk Tidskrift 1956:4) x)

En arbetstidsförkortning - verkningar i olika företag (A Shortening of Working-hours - Consequenses in Different Industrial Firms) Lars Nabseth. Reprint series No. 4, 68 pp (Särtryck ur SOU 1956:20) x)

Skrothandelns ställning och betydelse i samhällsekonomien (The Position of the Scrap Trade in Swedish Economy) Erik Höök Reprint series No. 3, 8 pp. (Särtryck ur "En man och hans verk") Sw.Cr 2:-

Långtidsprogrammet och verkligheten[1] (Experiences of Long Term Planning in Sweden) Jan Wallander Reprint series No. 2, 8 pp. (Särtryck ur Skandinaviska Bankens Kvartalsskrift 1956:2) x)

Samhällsplanering och industrilokalisering (Community Planning and Location of Industry) Jan Wallander. Reprint series No. 1, 7 pp.(Särtryck ur Plan nr 1956:1) x)

---

1) English summary
x) No longer available

1955

Kemisk industri - karakteristiska drag, struktur och utvecklingstendenser[1] (The Chemical Industry - its Characteristics, Structure and Development Trends) Alv Elshult - Ingvar Svennilson - Hans Wagner. 215 pp.[x]

Nationaliseringen i England (Nationalization in England) Erik Höök Multilith 88 pp. Sw.Cr 4:-

Industrien och förgubbningen (Old People in Industry - A Report from a Conference) 128 pp. Sw.Cr 7:-

Bostadsefterfrågan - med hänsyn till hushållens inkomster och sammansättning (The Demand for Housing - with Regard to Income and Composition of Households) Stig Rydorff 88 pp. Mimeographed [x]

Tjänstemännen och den industriella omvandlingen[1] (Salaried Employees and the Industrial Transformation) Erik Höök 114 pp. Sw.Cr 5:50

1954

Svensk television - Efterfrågan, tillverkning, import - En prognos (Television in Sweden - Demand, Production, Import - A Prognosis) 135 pp. Mimeographed

Den fria världens råvaruförsörjning (Resources of Commodities in the Free World. A Summary of the Paley Report) 216 pp. [x]

1953

Den svenska bryggeriindustrien (The Swedish Brewery Industry) 138 pp. Mimeographed

1952

Svenskt distributionsväsende[1] (Swedish Distributive Trades) Roland Artle 238 pp. [x]

Befolkningsutveckling och arbetskraftsförsörjning[1] (Population Trends and the Supply of Labor) Erik Höök. 193 pp. Sw.Cr 14:-

Svenskt transportväsende[1] (Transportation Industries in Sweden) Carl Wilhelm Petri 294 pp. [x]

Inkomstfördelningen i Sverige[1] (The Distribution of Income in Sweden) Ragnar Bentzel 227 pp. Sw.Cr 14:-

1951

Några fakta om lastbilstrafiken i Sverige 1950 (Some Facts about Truck Traffic in Sweden 1950) 59 pp. Sw.Cr 5:-

Industriproblem 1950 (Industrial Problems 1950) 160 pp. Sw.Cr 6:-

---

1) English summary
x) No longer available

Svensk industriell företagarverksamhet[1] (Entrepreneurial Activity in Swedish Industry 1919-1939) band 1 och 2. Erik Dahmén 428+295 pp. Sw.Cr 28:-

Industriförbundets reviderade produktionsindex (Some Methodological Problems Connected with the Measurement of Swedish Industrial Production)Erik Ruist 21 pp. x)

1949

Den amerikanska antitrustpolitiken och dess tillämpning (The Federal Antitrust Policy in the United States and its Practice) Hans Thorelli jr 102 pp. Mimeographed x)

1948

Den norrländska skogsnäringens konjunkturkänslighet under mellankrigsperioden[1] (Business Cycle Sensitivity of the Norrland Forest Industries during the Inter-War Period) Erik Ruist - Ingvar Svennilson 143 pp. Sw.Cr 7:-

Flykten från skogsbygden[1] (The Exodus from the Forest Regions) Jan Wallander 365 pp. Sw.Cr 15:-

Europas ekonomi ur balans (The European Economy out of Balance. A Summary of a Report from ECE) 60 pp. Sw.Cr 3:-

Studier i den svenska skoindustrins struktur[1] (Studies in the Structure of the Swedish Boot and Shoe Industry) Rickard Elinder 255 pp. Sw.Cr 12:-

1947

Statistisk kvalitetskontroll (Statistical Quality Control) 19 pp. Mimeographed x)

Tullunionen mellan Belgien, Holland och Luxemburg (The Benelux Customs Union) 16 pp. Mimeographed x)

Sovjetunionens industri (Manufacturing Industries in the Soviet Russia) 31 pp Mimeographed x)

Socialiserings- och reorganisationsplaner för industrien i Västeuropa (Socialization and Reorganization Plans of Western European Industry) 57 pp. Mimeographed x)

1946

Norrlands arbetskraftsbalans[1] (Norrland's Manpower Balance) Ingvar Svennilson 68 pp. Sw.Cr 2:-

Individuell livsmedelskonsumtion i arbetarhushåll vid Sandvikens järnverk år 1944 (Individual Food Consumption in Workers' Families at the Sandviken Steel Works in 1944) Carin Boalt - Yngve Zotterman 32 pp. x)

---

1) English summary
x) No longer available

Konjunkturläget i USA (The Economic Situation in the United States) 12 pp. Mimeographed x)

Den engelska bomullsindustrien under mellankrigsperioden (The British Cotton Industry in the Inter-War Period) Rune Hellberg 121 pp. Mimeographad x)

Studier i svenska textila industriers struktur[1] (Studies in the Structure of Swedish Textile Industries) Folke Kristensson 503 pp. x)

Sveriges arbetskraft och den industriella utvecklingen[1] (Sweden's Manpower and Industrial Development) Gösta Ahlberg - Ingvar Svennilson 176 pp. Sw.Cr 6:-

Utvecklingslinjer inom svensk skogsindustri (Trends in Swedish Forest Industries) Erland Waldenström 48 pp. Sw.Cr 1:-

Avverkningsberäkning för Norrland (Estimation of the Volume of Lumbering in Norrland) 38 + tab. pp. Mimeographed x)

1945

Svensk handelspolitik efter kriget (Swedish Trade Policy after the War) 53 pp. x)

1944

Industriens arbetarbostäder (Industrial Housing) Jöran Curman 487 pp. x)

De norrländska hemmamarknadsindustriernas transportkostnader (Transportation Costs of Home Market Industries in Norrland) 22 pp. Sw.Cr 5:-

Den ekonomiska efterkrigsplaneringen i Kanada (Post-War Economic Planning in Canada) 16 pp. Mimeographed x)

Norrlandsbiografi (Bibliography of Norrland) 63 pp. x)

Produktionskommittéerna i den engelska industrien (Production Committees in British Industry) 16 pp. Mimeographed x)

Det amerikanska näringslivet och efterkrigsproblemen (American Economy and its Post-War Problems) 50 pp. Mimeographed x)

Industriens sysselsättning under åren närmast efter kriget (Industrial Employment during the Early Post-War Years) 53 pp. Sw.Cr 1:-

Näringslivet inför freden (The Swedish Economy Faces the Peace) 107 pp. Sw.Cr 2:-

1943

Levnadskostnaderna i Norrland (The Cost of Living in Norrland) 49 pp. Sw.Cr 4:-

Industriproblem 1943 (Industrial Problems 1943) 124 pp. Sw.Cr 4:50

---

1) English summary
x) No longer available

Småindustri och hantverk i Sverige (Small-Scale Industry and Handicraft in Sweden) Axel Iveroth 233 pp. Sw.Cr 5:-

Engelska synpunkter på näringspolitiken efter kriget (British Views on the Relations between Government and Business after the War) 30 pp. Mimeographed x)

Studier i skogsbrukets arbetslära (Studies in Forestry Working Methods) 267 pp. Sw.Cr 12:-

Ekonomiska efterkrigsproblem. Diskussion i Saltsjöbaden den 20 maj (Post-War Economic Problems) 65 pp. Mimeographed x)

Undersökning rörande den lägre laboratoriepersonalens utbildningsförhållanden (The Training of Laboratory Personnel) 18 pp. Mimeographed x)

Nyare statliga åtgärder till stöd för bostadsproduktionen (Recent Governmental Support of Housing) 12 pp. Mimeographed x)

1942

Norrland, natur, befolkning och näringar (Norrland - its Geography, Population and Economic Activities) 594 pp. x)

Tillvaratagande och förädling av mindervärdigt virke samt avfalls- och biprodukter i skogsindustrien (Utilization and Processing of Inferior Timber and of Waste and By-products in Forest Industries) 328 pp. x)

Till frågan om det industriella framåtskridandet i Sverige (Aspects of Industrial Progress in Sweden) Ingvar Svennilson - Erland Waldenström 68 pp. Sw.Cr 2:-

Studier i skogsbrukets rationalisering (Studies in the Rationalization of Forestry) 47 pp. Mimeographed x)

Studie rörande koncentrations- coh rationaliseringsåtgärder inom den tyska industrien (A Study of the Concentration and Rationalization in German Industry) 55 pp. Mimeographed x)

Studier rörande koncentrationsåtgärder inom den engelska industrien (A Study of the Concentration of British Industry) 13 pp. Mimeographed x)

Taxepolitiken vid de finska järnvägarna (Freight Rate Policies of the Finnish Railways) 9 pp. Mimeographed x)

Yrkesutbildning och teknisk undervisning i Norrland (Vocational Training and Technical Instruction in Norrland) 17 pp. Mimeographed x)

1941

Industrien och Norrlands folkförsörjning (Manufacturing industries and the Economy of Norrland) 134 pp. Sw.Cr 2:-

Vår folkförsörjning i avspärrningstider I och II (The Swedish Economy under Wartime Blockade) 96+96 pp. Sw.Cr 3:50

---

x) No longer available