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Chapter Author: Per Holmberg

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Collection and Uses of Job Vacancy Statistics in Sweden

PER HOLMBERG

BROMMA, SWEDEN

A. BACKGROUND AND CONCEPTS

During the first four decades of this century, the Swedish labor market was characterized by a high rate of unemployment, with a temporary decrease during and shortly after World War I. During World War II the rate of unemployment gradually diminished, and from the middle of the 1940's there has been full employment. The high rate of employment has been accompanied by a considerable shortage of manpower in certain sectors, and this shortage is expected to continue or even to worsen during the second half of the 1960's and during the 1970's.

Materials for analyzing the development of the Swedish labor market were somewhat limited before the mid-1940's. Censuses containing data on employment and unemployment were made at intervals of five or ten years, and certain unemployment counts were carried out sporadically. From 1913 on, yearly statistics on employment, production, and so on, in mining and manufacturing were compiled, and beginning in 1911 the unions published monthly figures on enrollment and unemployment. Union statistics were used in short-run analysis as the main indicator of the labor market situation and its changes.

Since the middle of the 1940's there has been a considerable extension of statistics on the various problems of the labor market. Figures on the activity of the public employment agencies, which were founded in 1902 and became compulsory for the counties in

1934 before they were brought under state management in 1940, have since that year produced valuable information about job vacancies and other matters. Also, the employment service has published data on unemployment since 1955; as a consequence, the union statistics on unemployment are no longer compiled. Monthly statistics on employment, labor turnover, absenteeism, and so on, in mining and manufacturing have been developed since 1947, and in the early 1950's regular statistical measurements of employment in agriculture and forestry began. Yearly investigations of labor shortages in mining and manufacturing started in 1946, and in 1955 the quarterly Business Tendency Surveys, containing information about employment developments and labor shortages in mining and manufacturing, were instituted. The latter have been extended to cover building and construction, trade, and forestry. Since the late 1950's, quarterly labor force sample surveys have been made and also yearly investigations of the shortage of highly educated manpower in various sectors. All these developments have gradually improved labor statistics, thus enhancing analysis of the actual situation and the current development of the labor market, an improvement which has been a necessary condition for an active labor market policy and for keeping long-run and short-run forecasts up to date.¹

The current statistics on firms' postwar demand for labor will be described in detail below. However, before this, a brief summary will be given of the discussion which took place, at the end of the 1940's and later, on concepts and methods of measuring demand.

During periods of high unemployment rates, it is not difficult to measure demand for labor, either in practice or principle. Demand and employment can, with few exceptions, be considered identical. However, when the task is to measure labor shortage, considerable conceptual and methodological problems arise. The need of new manpower in various firms—for instance, as shown by job vacancies reported to employment agencies or advertised in newspapers—is to a large extent influenced by labor mobility, which is very sensitive to cyclical fluctuations. Furthermore, the methods that firms

¹ As regards Swedish labor market policy, see, for example, *Labour Market Policy in Sweden*, Paris, OECD, 1963.

use in hiring manpower is supposed to vary with the labor market situation. Labor mobility and the firms' hiring policy must therefore be considered when attempts are made to measure demand and its changes.

As the "flow aspect" in demand for labor is considered, difficulties arise in distinguishing between planned (*ex ante*) and carried out (*ex post*) employment, where the outcome is influenced not only by the present labor market situation but also by the wage policy of the firm.² In this context, the importance of making a distinction between gross demand and net demand must be emphasized. The former includes replacement of manpower, but this is excluded when the latter is considered. Here the mobility of labor is also important. The fact that mobility is partly connected with the wage and labor policy of the firm does not facilitate the solution of the problem.

If demand for labor is considered as a "stock quantity," it will equal employed plus shortage, where demand can be measured by people, or alternatively by man-hours. Many criteria are required to enable measurement of shortage. Hence, does the shortage relate to the present size of the firm or its stock of orders or fluctuations in this stock? Has attention been paid to whether or not it is possible for the new manpower to obtain housing near the firm? Does the estimate of the shortage concern the situation before or after attempts to fill the vacancies with other kinds of manpower than is usually used for the job in question? Evidently, the conception of one and the same shortage varies from one firm to another, and is conceived differently by entrepreneurs, unions, and employment agencies. And a certain shortage is conceived differently in the long run than in the short run, since there is a process of "adaptation to disequilibrium."³ Also, new methods are developed to eliminate the shortage—for instance, investment in labor-saving devices, substitution of women for men, use of semiskilled or unskilled rather than skilled workers.

² As regards the importance of wage policy, see J. S. Duesenberry, *Business Cycles and Economic Growth*, New York, 1958, Chap. 13.

³ As regards this problem, see J. C. R. Dow and L. A. Dicks-Mireaux, "The Excess Demand for Labour, A Study of Conditions in Great Britain, 1945-56," *Oxford Economic Papers*, February 1958.

The circumstances mentioned have not merely been discussed; they have also been investigated. Thus, the shortage of labor in Swedish manufacturing in 1951 was estimated to be 3.9 per cent of the labor force, if the possibility of obtaining dwellings near the firms for the new manpower was considered, and 11.0 per cent if this factor was not considered. In this context it was also shown that, of 362 firms investigated, 303 had a shortage according to the entrepreneurs' opinion while 202 had one according to the local unions' opinion.⁴ These experiences and others in Sweden have led to the conclusion that all statistics about labor demand and labor shortage must be considered with a good deal of skepticism, and consequently the figures published on shortages are merely used as indicators. As will be mentioned later in connection with the discussion of the Business Tendency Surveys, these experiences have to some extent influenced the carrying out and the development of those statistics which aim to throw light on the demand for labor.

B. THE PUBLIC EMPLOYMENT SERVICE AND ITS REPORTS ON JOB VACANCIES

The job vacancies reported to the 460 employment agencies and 422 local representatives of the country (end of 1963) are compiled each month and delivered as county surveys from each of the 25 counties to the Labor Market Board. This board uses the surveys as a basis for a further compilation, which serves as a national survey, published in the monthly journal *Arbetsmarknadsstatistik* (Labor Market Statistics), together with other statistical material on the actual labor market situation. A list of new job vacancies is published in this journal as well as information about the total number of job vacancies in the middle of each month. Private employment services are prohibited, though permission has been given to a few nonprofit employment agencies.

The statistics on job vacancies mainly are indicators of the activity of the employment agencies and the use the firms make of their services. As a rule the firms report their vacancies to the agencies

⁴ R. Meidner, *Svensk arbetsmarknad vid full sysselsättning*, Stockholm, 1954, pp. 23 f. and Chap. III.

by telephone, although occasionally at times and places of higher unemployment the agencies telephone themselves or visit the firms to ask for information about vacancies. As a consequence, cyclical fluctuations in job vacancies are not always evident in the statistics.

With few exceptions, it is compulsory for public authorities to engage their personnel from the employment service. In the case of private and public firms with greatly expanded demand for labor, special arrangements can be made to increase the employment service's assistance. In many cases the agencies advertise the job vacancies in the daily newspapers and the unions' magazines. Furthermore, a selection of job vacancies is listed in the *Platsjournalen* (Job Vacancies Journal), which is sent regularly to all agencies and representatives in the country as well as to the Central Employment Agencies in Denmark, Finland, and Norway. Programs based on the material in this journal are also broadcast regularly.

Job vacancies not available until after the month they are announced are not reported explicitly. When agreement has been reached about the position, the job is taken off the books, and by the end of each month the agencies check with the firms whether or not help is still wanted. Nowadays a distinction is made between one-day jobs and jobs of longer duration. Furthermore, the jobs are classified with regard to branch and occupation, the latter according to the *International Standard Classification of Occupations* (ISCO), published by the International Labor Organization (ILO) in 1958. In the national surveys the figures are published for each of the twenty-four counties and the largest cities of the country.

Table 1 gives the total number of job vacancies reported to the public employment service for the country and for all branches and occupations. The table also shows the number of vacancies filled and the difference between the two, sometimes used as an indicator of "excess demand" for labor.

The short-run fluctuations in the Swedish labor market show very clearly in the table: the rapid increase in demand from 1939 to 1945, the maximum in 1950, the recessions in 1949, 1953, and 1958. These fluctuations are also reflected in all other labor and economic statistical series concerning, for example, labor shortage, labor mobility, unemployment, investments, export, and so on. As regards

TABLE 1
*Job Vacancies, Filled Vacancies, and Unfilled
 Vacancies, 1939-63*
 (thousands)

| Year | Vacancies Reported During Year | Vacancies Filled During Year | Unfilled Vacancies at End of Year |
|------|---|---------------------------------------|--|
| 1939 | 565 | 436 | 129 |
| 1945 | 1,341 | 1,096 | 245 |
| 1946 | 1,455 | 1,155 | 300 |
| 1947 | 1,460 | 1,145 | 315 |
| 1948 | 1,417 | 1,138 | 279 |
| 1949 | 1,331 | 1,100 | 231 |
| 1950 | 1,469 | 1,196 | 273 |
| 1951 | 1,453 | 1,182 | 271 |
| 1952 | 1,232 | 1,038 | 194 |
| 1953 | 1,175 | 999 | 176 |
| 1954 | 1,238 | 1,023 | 215 |
| 1955 | 1,244 | 1,030 | 214 |
| 1956 | 1,174 | 991 | 183 |
| 1957 | 1,075 | 915 | 160 |
| 1958 | 1,013 | 875 | 138 |
| 1959 | 1,084 | 920 | 164 |
| 1960 | 1,167 | 942 | 215 |
| 1961 | 1,126 | 888 | 238 |
| 1962 | 1,103 | 878 | 225 |
| 1963 | 1,143 | 914 | 229 |

long-run developments, there is a downward trend. However, it must not be concluded that the ratio of reported vacancies to total number of vacancies has gone down. This is obvious when the development of advertising statistics in the same period is taken into account (see below).

The downward trend in the number of job vacancies must instead be seen against the background of (1) the excess mobility of labor in the late 1940's, reflecting a kind of stored up "need of mobility" after many years of unemployment; (2) the diminishing share of manpower employed in agriculture and domestic work (branches that have always played a prominent role in the activities of the employment service), a development connected with general structural changes in the economy and a marked increase in the relative

wages of housemaids; (3) the adaptation of employers to a practically permanent labor shortage, which has in turn made it seem pointless to ask for new labor beyond a certain (and decreasing) degree.⁵

There has been much discussion of the number of workers who find new jobs through the employment service, as well as the changes in the make-up of the total. Although the information available is rather ambiguous, it can be mentioned that, according to an investigation by the Swedish Gallup Institute in 1944, some 8 per cent of the workers and 3 per cent of the salaried employees obtained their present jobs from the employment service. As regards people who got their present jobs during the last twelve months, the corresponding figures were 14 and 3 per cent. According to an investigation made in one of the larger cities at the end of the 1950's, 17 per cent of the 25-year-old workers and salaried employees, 14 per cent of the 35-year-olds, and 7 per cent of the 45-year-olds had obtained their present jobs from the employment service.⁶ Among the unemployed job seekers, the labor force sample surveys for 1961-64 show that 60 to 70 per cent used the public employment service. These figures indicate that the importance of the employment service has increased during the last decades. Still, more investigations are needed to throw light on the firms' relations with the agencies and to be able to distinguish more clearly between various categories of job seekers—for example, unemployed, new entrants in the labor market, and those who change jobs. The "efficiency" of the employment service must not merely be measured as a ratio of the total number of new hirings; attention must also be paid to what extent the employment service can give employers and manpower useful and good surveys of the labor market situation in a broader sense.

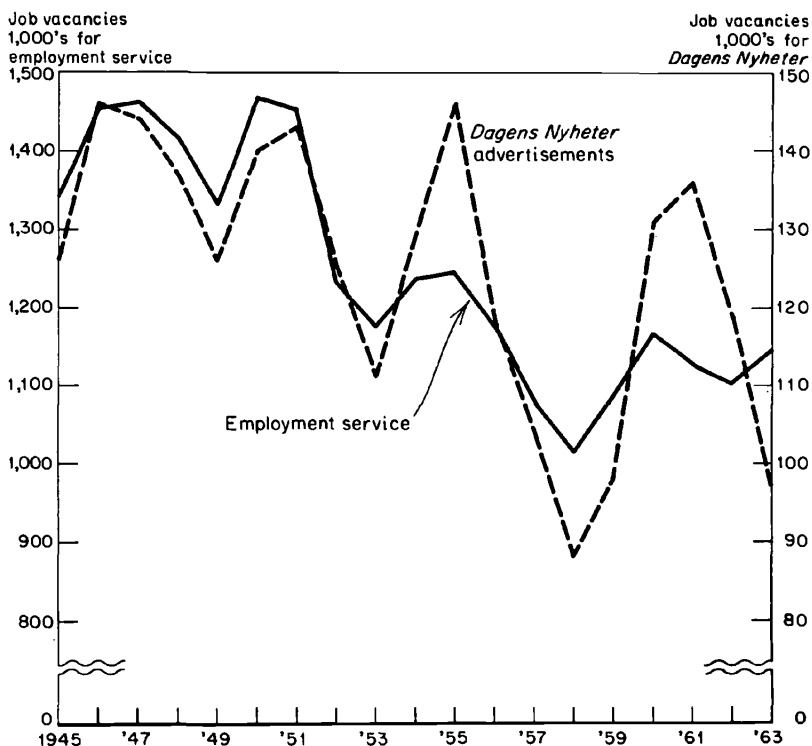
In Sweden there are no survey statistics on job vacancies advertised in the daily newspapers and other sources. However, the biggest newspaper (*Dagens Nyheter*), the leader in advertisements for

⁵ Some further data from the statistics on job vacancies are presented in Table A-1 (at the end of this paper).

⁶ B. Rundblad, *Arbetskraftens rörlighet*, Uppsala, 1964, Chap. 4.

the labor market, for many years has published the number of job vacancies advertised therein. Chart 1 shows a close correspondence

CHART 1
*Job Vacancies According to Employment Service
and Dagens Nyheter*



SOURCE: Table A-3.

between the development of job vacancies according to the employment service and this newspaper. Since the early 1950's, however, business fluctuations in the advertisement statistics have been more noticeable. It may be added that *Dagens Nyheter's* share of the total number of advertisements in the country probably has risen during the postwar period and at the same time its circulation has increased considerably. These factors make it difficult to compare the two kinds of statistics meaningfully.

C. QUANTITATIVE MEASUREMENTS OF LABOR SHORTAGE IN MINING AND MANUFACTURING

The fact that statistics on job vacancies could only be used as a very rough indicator of fluctuations in demand for labor (and possibly also as an indicator of differences in demand between various parts of the country) made it obvious that specific information was necessary as regards labor shortage. It was also hoped to adjust for the statistical effects of labor mobility on demand, a factor about which not much was known by the end of the 1940's. Hence this was the background of many investigations carried out at that time by public and private institutions, in order to obtain quantitative measurements of shortage of labor. With few exceptions, the investigations were limited to workers in mining and manufacturing.

The results largely depended on how labor shortage was interpreted. Table 2 shows the results as they vary with different definitions.

The firms' conception of the shortage depended on (1) whether it concerned the situation at the time of the inquiry or a future point of time; (2) production capacity of existing or planned plants; (3) supply of raw material, fuels, and so on; (4) firms' market situation and flow or stock of orders; (5) possibilities for new workers to get dwellings. The shorter the time horizon and the more attention paid to conditions of production, the market, and the dwelling situation, the smaller was relative shortage. The smallest shortage was found in calculated or planned production (definition 9). In this case, when management made a survey of the many underlying factors, realism obviously dominated over wishful thinking.

These inquiries were carried out by the Board of Trade up to 1962, when they were taken over by the Central Bureau of Statistics. They are made in connection with yearly surveys of the investment plans of firms in mining and manufacturing. However, the results have been looked at with such skepticism that in recent years they have not even been published. Chart 2 compares these results with the figures for job vacancies in mining and manufacturing according to the statistics of the employment service. As can be seen, there is little variation between the two magnitudes.

TABLE 2
*Shortage of Workers in Mining and Manufacturing as a Percentage
of All Workers Employed in Those Industries*

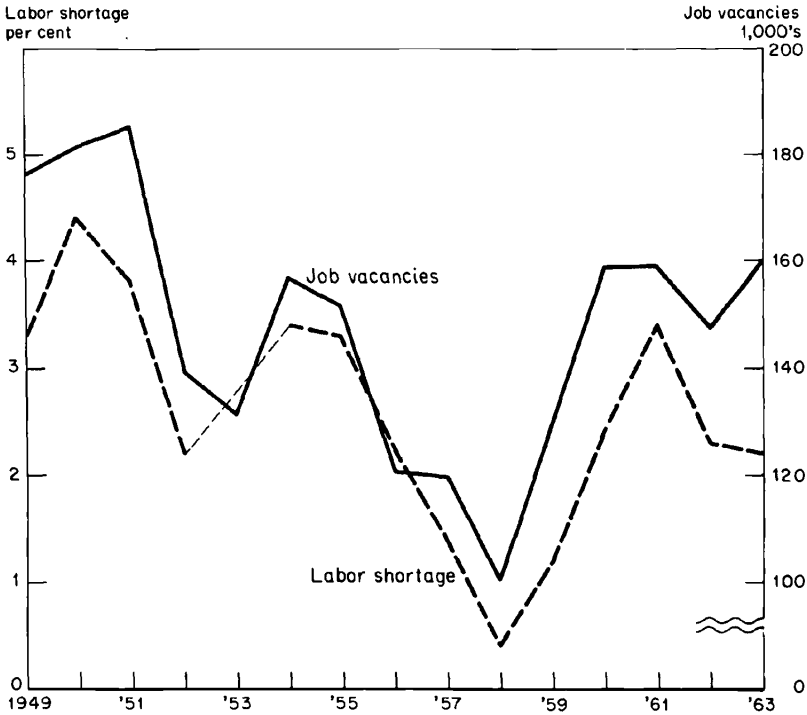
| Definition | Shortage (per cent) | | | | | |
|--|---------------------|------|------|------|------|------|
| | 1946 | 1947 | 1948 | 1949 | 1950 | 1951 |
| 1. Shortage related to current need | 11.0 | | | | | |
| 2. Need related to firms' full capacity 15 months after inquiry | 17.9 | 17.9 | 16.2 | | | |
| 3. Need related to firms' full capacity at time of inquiry | 11.6 | 13.2 | 12.7 | | | |
| 4. Needed increase in employed workers, given current capacity and stock of raw material, for the nearest two months | | 6.4 | 4.7 | 4.3 | 4.1 | 4.4 |
| 5. As in 4, but for nearest year and with respect to expected sales | | | | | 6.0 | 6.2 |
| 6. Need, given production capacity, nearest year | | | | | 8.4 | 8.9 |
| 7. As in 5, but without consideration of supply of dwellings | | | | | | 11.0 |
| 8. As in 5, but with consideration of supply of dwellings | | | | | | 3.9 |
| 9. Need for planned production in following year | | | | 3.3 | 4.4 | 3.8 |

SOURCE: Based on Meidner, *Svensk arbetsmarknad*, Chap. III.

Finally, it should be noted in this context that since 1947 the Swedish iron mills have provided monthly data to their trade organization (the Swedish Iron Mills Association) concerning the number of workers employed, workers who have begun or left their employment during the month, "further need" of workers, and the supply of dwellings near the mills. Compilations of these data are regularly published by the Labor Market Board. The data give information about new engagements, gross and net, and also make it possible to analyze the connection between labor shortage on the one hand and labor mobility and supply of dwellings on the other. However, similar figures are not collected for other industries, although the monthly employment statistics from the Central Bureau of Statistics contains some rough estimates of the share of workers in mining and manufacturing who have begun or left jobs. These estimates of labor

CHART 2

*Labor Shortage and Number of Job Vacancies
in Mining and Manufacturing*



SOURCE: Tables A-1 and A-3.

mobility may be used to some extent to gauge reported labor shortage in various sectors, because the shortage often is likely to be connected with labor leaving the firms rather than with expansion of the number employed in the firms. In such cases, when labor is leaving firms at an abnormal rate, one cause may often be that those firms are not able to compete over wages with the others in the market.

D. THE BUSINESS TENDENCY SURVEY

In 1954 the Swedish Institute of Economic Research started a new type of investigation which should give information about short-

run fluctuations in investments, prices, flow of orders, stock of raw materials, and employment. The inquiry followed a German pattern of business cycle test (*Konjunkturtest*),⁷ and up to 1958 it only covered mechanical workshops and the textile industry. The questions are phrased in such a way that the answers indicate the direction of an accomplished or expected (planned) change. In general, there are three alternative answers: "Larger than . . .," "No change," and "Smaller than. . . ." Some answers merely imply a statement about the present situation with no comparison, for instance, "yes" or "no" when asked if the firm has a shortage of labor. The results—the Business Tendency Survey (*Konjunkturbarometern*)—now give data on some twenty types of mining and manufacturing, in the form of a percentage distribution of the answers from the firms. As weighting variables, production, number of workers employed, or export value are used. The results are published in *Konjunkturläget*, the quarterly journal of the Institute.

Corresponding inquiries have been made since 1961 for forestry and trade, and since 1962 for building and construction as well. The sectors covered by these investigations stand for some two-thirds of production and employment in Sweden. The qualitative results seem to agree very well with corresponding quantitative data. The survey is designed to yield information rapidly, and the data on firms' expectations have proved valuable as bases for forecasts. Each County Labor Board (under the National Labor Market Board) collects its own information, thus obtaining useful data at an early stage about present situation and expected trends for the firms in the county. It is no exaggeration to say that, for regional and national surveys, labor market analysis, and general economic analysis, the Business Tendency Surveys have often proved more useful and of better quality than, for instance, the statistics on job vacancies or on labor shortage described above.

It has been shown that expected or planned development of employment according to these surveys as a rule agrees closely with the realized one.⁸ At the beginning of a boom, real development

⁷ The *Konjunkturtest* was originally carried out at the IFO-Institut für Wirtschaftsforschung in Munich. Similar tests are now used also in the United Kingdom, Austria, and Japan.

⁸ For data on this part of the surveys, see Table A-2.

often exceeds that planned; whereas, as the boom goes on, the planned increases in employment change from being too optimistic to too pessimistic. Thereby, increased knowledge has been obtained about how firms' demand for labor fluctuates with business cycles. Also, it has been possible to obtain an indicator of how planned employment in the firms is affected by existing shortages. Changes in tendencies and attitudes according to the surveys have thus been useful for interpretation of quantitative data on fluctuations in employment.

The data on labor shortage obtained from the Business Tendency Surveys are now used frequently in analysis of employment fluctuations in various branches of industry and in various regions. Figures on labor shortages in Table 3 refer to the situation in September of the year in question according to the surveys. As already mentioned, there are corresponding data for each quarter of the year and for some other twenty sectors not listed in the table.

As shown in the table, during the recession of 1957-58 there was a noticeable easing of the shortage, especially of other than skilled workers. Also, the shortage varied from one industry to another. Fluctuations in the labor market are more clearly reflected in the survey figures than in those for job vacancies, advertisements, and so on.

E. COMPARISONS BETWEEN JOB VACANCY STATISTICS AND OTHER LABOR MARKET DATA

The discussion above has dealt with statistics on job vacancies and labor shortage, series that have several features in common. Fluctuations in the business cycle are reflected in a similar way, although the newspaper advertisements and even more so the Business Tendency Surveys give clearer results than the statistics carried out by the employment service. As already mentioned, both kinds of job vacancy statistics show a downward trend in demand for labor, which is partly connected with a long-run change in the reactions of the firms to labor shortage.

Several other series throw light on the fluctuations of the labor market. Thus changes in the number of job vacancies can often be

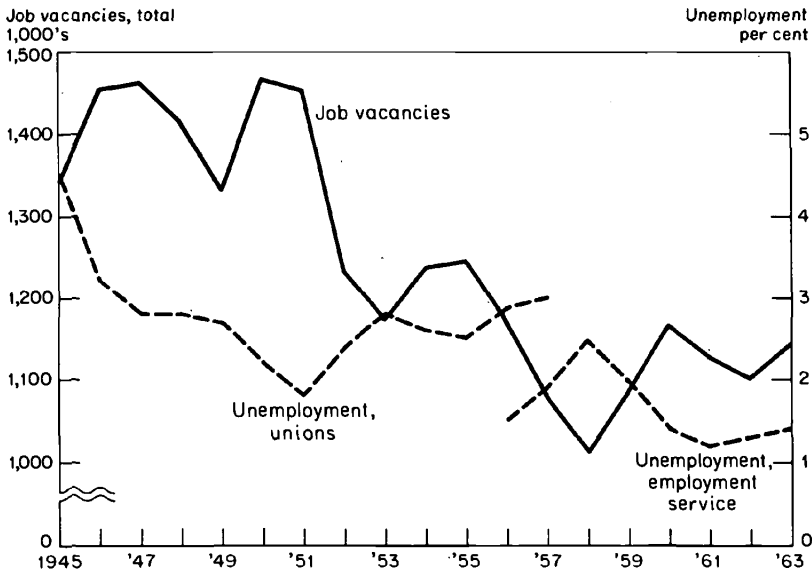
TABLE 3
*Percentage of Firms with Labor Shortage According to
the Business Tendency Surveys*

| Firms | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|
| Mining and manufacturing, total | | | | | | | | | | |
| Skilled workers | | | | | 40 | 62 | 63 | 50 | 50 | 62 |
| Other workers | | | | | 14 | 32 | 31 | 19 | 22 | 37 |
| Technicians | | | | | 25 | 41 | 34 | 27 | 19 | 24 |
| Other salaried employees | | | | | 7 | 12 | 9 | 9 | 8 | 8 |
| Mechanical workshops | | | | | | | | | | |
| Skilled workers | 75 | 72 | 57 | 38 | 52 | 81 | 84 | 71 | 58 | 74 |
| Other workers | 49 | 32 | 6 | 1 | 27 | 46 | 51 | 32 | 36 | 54 |
| Technicians | | | | | 48 | 67 | 57 | 47 | 48 | 53 |
| Other salaried employees | | | | | 16 | 18 | 16 | 17 | 14 | 10 |
| Building and construction | | | | | | | | | | |
| Bricklayers | | | | | | | | 25 | 58 | 26 |
| Carpenters | | | | | | | | 41 | 62 | 40 |
| Semiskilled workers | | | | | | | | 37 | 53 | 30 |
| Unskilled workers | | | | | | | | 16 | 42 | 17 |
| Technicians | | | | | | | | 42 | 45 | 36 |
| Retail trade | | | | | | | | | | |
| Sales personnel | | | | | | | 40 | 22 | 17 | 20 |
| Clerical personnel | | | | | | | 13 | 1 | 1 | 1 |
| Other workers | | | | | | | 37 | 7 | 5 | 20 |
| Wholesale trade | | | | | | | | | | |
| Workers | | | | | | | 15 | 7 | 12 | 14 |
| Salaried employees | | | | | | | 3 | 4 | 2 | 7 |
| Forestry | | | | | | | | | | |
| Fellers | | | | | | | 77 | 11 | 13 | 31 |

matched against the development of unemployment.⁹ The development of these two series in the postwar period can be followed in Chart 3. In the short run, it may seem as if unemployment and

CHART 3

Job Vacancies (Employment Service) and Unemployment



SOURCE: Table A-3.

demand for labor developed in opposite directions. However, in times of great shortage, unemployment and demand for labor can diminish simultaneously, as was the case at the end of the 1940's and the beginning of the 1960's. There appears to have been a general decrease in unemployment during the postwar period, so that, with a given demand for labor—regardless of the different interpretation of this concept—unemployment has become lower. This long-run decrease shows that a long period of full employment is necessary before various kinds of “other unemployment” come to an end.

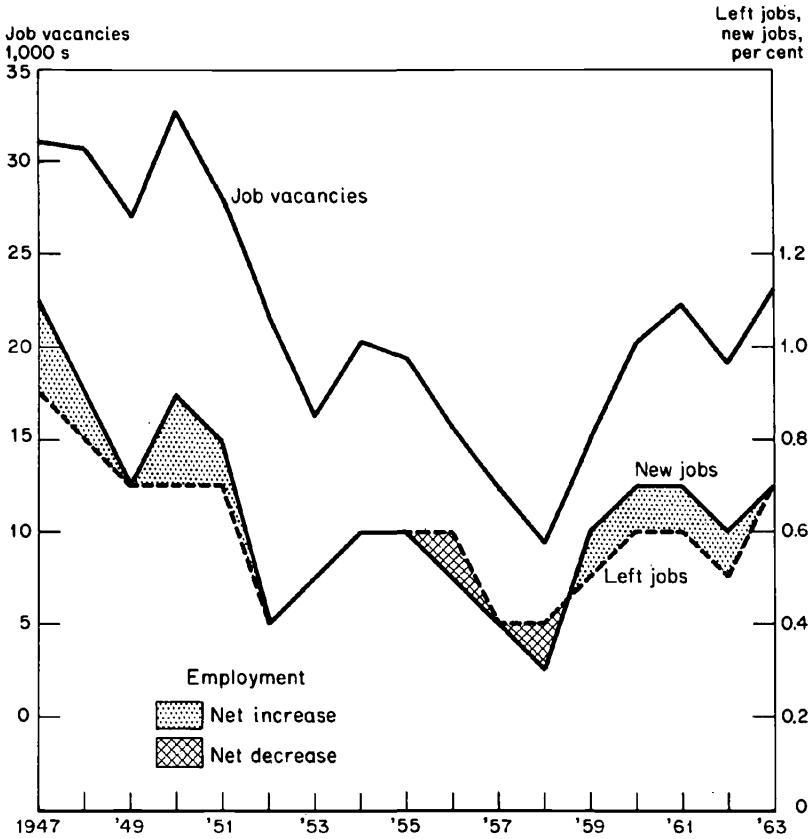
⁹ Concerning unemployment in Sweden, see R. J. Myers and J. H. Chandler, “Comparative Levels of Unemployment in Industrial Countries,” in *Measuring Employment and Unemployment*, Washington, 1962, Appendix A.

Absenteeism has been studied in various contexts, and statistics of it have been compiled since 1947. Up to the middle of the 1950's, about 5 per cent of the labor force was out because of illness and other personal reasons, with some fluctuations which seem to have been due to fluctuations in business cycles. The figure has gradually gone up since the middle of the 1950's, and is now 8-9 per cent. To some extent this increase may be explained by the introduction of compulsory health insurance in 1955, which may have brought about an increased tendency to stay at home because of illness. However, it is also probable that the concept "being employed" is being construed more freely, so that many people who are absent because of illness for a longer time than before are considered as still employed by their employers.

It was mentioned above that the mobility of labor affects the "gross demand." In the employment statistics for workers in mining and manufacturing, data are also provided for one week per month on workers who have left their jobs and on those who have obtained new ones. The percentage figures for November 1947 to 1963 are shown in Chart 4, as is the number of job vacancies in mining and manufacturing. The chart shows that during the postwar period most of the new hirings in mining and manufacturing have replaced workers who left their jobs voluntarily. However, there is a downward trend in these figures, mainly as a consequence of the checking of the previous excess mobility, which obviously explains part of the decrease in the number of reported job vacancies. It also shows that labor mobility in the short run is very sensitive to business fluctuations, which in turn explains part of the fluctuations in the number of reported job vacancies.

Finally, Chart 5 shows the yearly changes in the number of workers employed in mining and manufacturing compared with job vacancies reported to the employment service. The employment figures are taken from the yearly statistics on production, and so on, in mining and manufacturing, carried out from 1913 to 1962 by the Board of Trade and taken over in the latter year by the Central Bureau of Statistics. The most important conclusion that can be drawn from the chart is how the influence of demand for labor—the

CHART 4
Job Vacancies and Labor Mobility

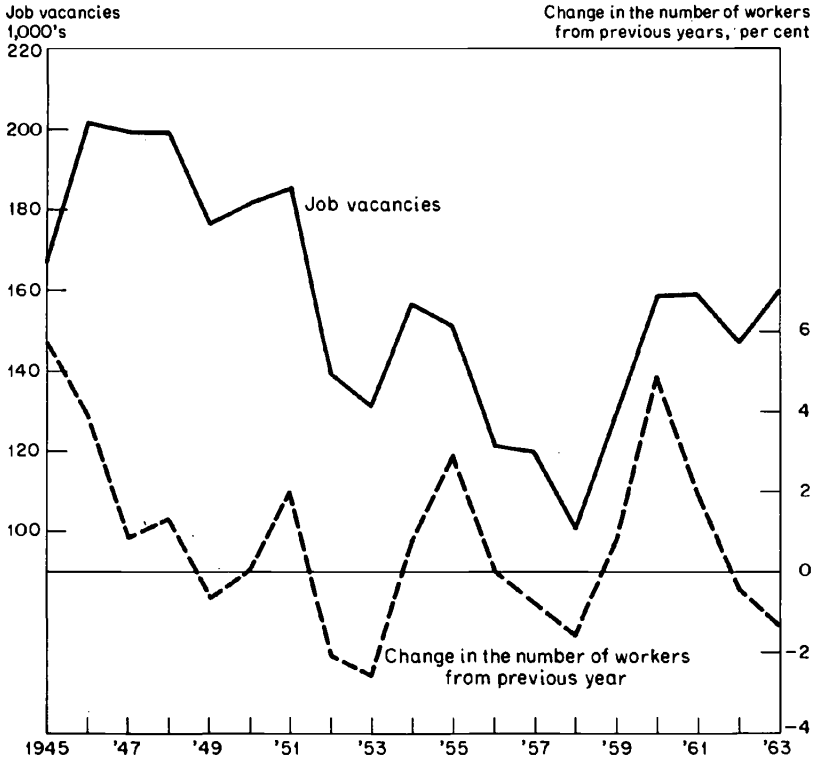


SOURCE: Table A-3.

shortage—has diminished in the postwar period; as a consequence of this, fluctuations in employment due to business cycle fluctuations have become more evident. In some periods—in 1945–48, 1956, and 1961—the expansion in employment was obviously stopped because of shortage of labor. One interesting feature in this development is that the rate of decrease in employment has been smaller over the three cycles. Some economists think that the explanation is that

CHART 5

*Job Vacancies and Employment
in Mining and Manufacturing*



SOURCE: Tables A-1 and A-3.

employers try more and more to "store up" labor in a recession to avoid a shortage in a boom. On the other hand, it can be argued that the rate of increase in employment in upswings has gradually increased.

Analysis of labor demand and its changes requires study of much more data than those concerning job vacancies and labor shortage. Employment and unemployment, labor mobility, and absenteeism must also be studied. Correct diagnosis of short-run and long-run development calls for a judgment that considers all these factors.

F. SHORTAGE OF HIGHLY EDUCATED MANPOWER

In recent years there has been a growing interest in the labor market situation for various kinds of highly educated manpower. The reason is that the expansion of higher education at present under way in Sweden has increased the need for this sort of information.

Public and private inquiries have been made about the present shortage and the future need of technicians at various levels. Investigations have also been made about the shortage of various kinds of teachers, and for this purpose the employment service statistics on job vacancies has been useful. Since 1956, inquiries have been carried out twice a year regarding the shortage of doctors, nurses, and other personnel dealing with health care. These are made by the National Health Board with the intent of measuring the number of vacancies in various branches of health care, by professions and counties, with or without regard to housing status.

In these investigations quantitative inquiries are made about demand, supply, and the difference between the two. Besides these, from 1959 on the Labor Market Board every autumn has asked public authorities and private firms about their estimates of actual supply and expected demand in the coming year for some sixty kinds of highly educated manpower. Among these are technicians, teachers, nurses, doctors, mathematicians, economists, and master mariners. The purpose and methods are similar to those of the Institute of Economic Research in the before-mentioned Business Tendency Surveys. One of three alternative answers is to be given, for example, if there is a shortage, whether it is great or small, and if the demand in the next year is expected to increase or decrease or remain the same. In this context questions are also put about turnover of the various kinds of personnel. By and large, the results are comparable with those for workers and salaried employees in mining, manufacturing, and other branches obtained by the Business Tendency Surveys.

Special inquiries about various kinds of highly educated personnel are considered necessary because this manpower only rarely contacts the employment service, and the employers usually recruit either by

advertisements or by contacting the universities. This information has also been needed in order to throw light on the outcome of forecasts on the needs for various kinds of education. Although skepticism over the results of inquiries about labor shortage, expected development of demand, and so on, may be great, these results have contributed to an even greater skepticism about the forecasts carried out.

G. THE SIX-MONTH FORECASTS OF THE LABOR MARKET BOARD

For many years the County Labor Boards have been required to send reports each spring and autumn to the Labor Market Board about the actual situation in the labor market in each county and expected developments during the coming year. The Labor Market Board uses these reports and other data, mentioned above, as a basis for countrywide forecasts in broad terms, which in turn form the basis for the short-run labor market policy carried out by the government and the Board. The reports of the County Labor Boards follow the practice of the Labor Market Board, which considers fluctuations in the business cycle and the labor market situation. Thus in some reports, for example, the situation in the building and construction labor market is emphasized; in others, the labor market situation for young people. Lately, additional brief reports also have been required each summer and winter. The County Labor Boards have relative freedom in carrying out their reports and forecasts.

As a rule, the statistics on the activities of the employment agencies and the basic material for the public employment statistics and Business Tendency Surveys are intensively used. These data are collected by the County Labor Boards and delivered, the former to the Central Bureau of Statistics and the latter to the Institute of Economic Research. In many cases, to obtain more information, the boards make their own inquiries of the firms. An extract of the summary of the September-October 1964 report of one of the twenty-five County Labor Boards to the Labor Market Board will illustrate the kinds of practical and political conclusions the boards arrive at:

The dominating features of the present economic situation are very high activity and maximum use of the resources of production. Many firms are making or planning for new investments to increase plant capacity. Interest is focused on reorganization and development, and successful selling campaigns are going on in the home market as well as in the export market. Order portfolios are well filled in most firms, which creates a guarantee of continued high employment during most of the forecast period. Of course, the picture is not uniform. . . . During the forecast period, it appears that the most urgent task for this County Labor Board will be to supply the great needs for recruiting new manpower. Measures for transfer of labor between various places will be needed, as well as vigorous use of the courses in occupational training and retraining. Continuing efforts must also be made to utilize the resources of the female labor force. . . . For the second and third quarters of 1965, developments in the labor market are likely to continue in the same progressive way, although the forecasts for _____ are a bit more ambiguous than for the rest of the country's industries.

Reports and forecasts such as this one make it possible to visualize the realities behind the statistics of employment and unemployment, labor shortage, and the activities of the employment agencies in various parts of the country. Actions by firms and employment service (carried out and planned) to solve different labor market problems are also often presented in these reports.

H. SUMMARY AND CONCLUSIONS

The full employment that has characterized the Swedish labor market in the postwar period has resulted in a shift in the main part of the analysis from unemployment to labor shortage. Earlier, job vacancies were thought of as a means of reducing unemployment, but nowadays unemployment (registered and disguised) is considered as a means of reducing the labor shortage. Now as well as then, the aim is the canceling out of unfilled supply of and demand for labor, but the emphasis has shifted from excess supply to excess demand.

The change in the climate of the labor market has increased the need to measure demand for labor and its fluctuations. Discussions and investigations have gradually made the demand concept clearer—with the result that this concept is no longer considered to be one that can be determined statistically. Such factors as the subjective

estimates of management, the influence of many exogenous factors, gradual adaptation to the actual state when shortage becomes permanent, make the figures ambiguous and inexact. Mere indicators have to suffice, and they throw light on fluctuations in demand for labor from one point of time to another, from one sector or occupation to others, and from one region to another. This must be taken not as resignation but as a conclusion. Nevertheless, the conceptual and technical difficulties of measuring demand and shortage in the labor market seem minor compared to those of measuring supply and unemployment.

Today there are several indicators of labor demand and shortage, although at first the only measurement was such statistics of the employment service's activities as job vacancies and vacancies filled. Some advertisement statistics on job vacancies were used at times, although they were considered to yield less useful information than the employment service statistics. In the late 1940's many intensive efforts to measure labor shortage in mining and manufacturing were made, but the statistical series (still in existence) is considered today to be of minor interest.

Perhaps the greatest improvement in this context was when the Business Tendency Surveys began in 1954-55 at the Institute of Economic Research. At first these were concerned with only some branches of manufacturing, but today they cover two-thirds of the entire labor market. They likewise, as has been mentioned, cover the situation for various kinds of highly educated manpower. The Business Tendency Surveys imply a qualitative estimate of labor shortage as well as expected development of employment. They have given valuable information as a basis for labor market policy, local and central, short-run and long-run analysis. As regards the last, the Business Tendency Surveys are more relied upon and more frequently used than the figures the employment agencies provide, although those data are indispensable for analysis of the labor market in limited areas.

As "flow demand" for manpower must be considered both gross and net, a necessary condition for studies in demand and excess demand is that there be some measure of labor mobility. Also statistics on employment, absenteeism, and wages may be needed for

correct analysis of the actual situations and the changes in them. Partly because of the interrelations between the variables of the labor market, it has been claimed in the last few years that an "integrated statistical system" for the labor market should be developed. A steering committee connected with the Central Bureau of Statistics is now dealing with this problem.

The major uses of the existing data in demand for and shortage of labor have been mentioned above. The County Labor Boards and local employment service use them as the basis for planning such policies as organization of retraining, vocational guidance at schools, and arranging transfers of labor between various places in the country. Big firms probably use these data often for their employment policies in the short as well as long run. They are used for similar purposes in general labor market policy, and also for business cycle analysis, as a basis for economic policy in general and wage policy in particular, for implementation and revision of forecasts, and so on. In many cases the regular reports from the County Labor Boards provide useful information by describing what the statistics show in figures only.

TABLE A-1
*Number of Job Vacancies Reported to the Employment
 Service, by Sector, 1945-62*
 (thousands)

| Year | Mining and Manuf. | Building and Const. | Agri- culture | Forestry | Road Transp. | Domestic Work | Total |
|---|----------------------|------------------------|------------------|----------|-----------------|------------------|---------|
| 1945 | 166.7 | 156.6 | 98.2 | 153.3 | 48.0 | 272.4 | 1,341.1 |
| 1946 | 201.6 | 200.4 | 90.2 | 92.2 | 74.1 | 270.0 | 1,455.4 |
| 1947 | 199.5 | 167.7 | 67.5 | 108.1 | 102.9 | 270.2 | 1,460.4 |
| 1948 | 199.4 | 151.3 | 67.7 | 77.1 | 109.8 | 266.6 | 1,417.2 |
| 1949 | 176.2 | 154.8 | 61.5 | 42.3 | 128.5 | 250.0 | 1,331.1 |
| 1950 | 181.5 | 150.3 | 64.2 | 55.6 | 208.4 | 242.3 | 1,469.3 |
| 1951 | 185.3 | 132.4 | 53.7 | 60.5 | 236.8 | 224.7 | 1,453.0 |
| 1952 | 139.1 | 133.7 | 56.8 | 41.2 | 145.8 | 214.6 | 1,232.4 |
| 1953 | 131.4 | 138.3 | 52.4 | 30.7 | 145.4 | 207.9 | 1,175.1 |
| 1954 | 156.8 | 132.5 | 54.1 | 45.6 | 151.8 | 198.3 | 1,238.1 |
| 1955 | 151.4 | 122.9 | 39.1 | 37.8 | 188.8 | 192.2 | 1,244.0 |
| 1956 | 120.8 | 125.1 | 39.3 | 35.5 | 187.2 | 181.2 | 1,173.8 |
| 1957 | 119.7 | 119.5 | 38.6 | 28.3 | 143.4 | 178.5 | 1,075.1 |
| 1958 | 100.4 | 123.5 | 37.2 | 24.9 | 131.6 | 171.6 | 1,012.7 |
| 1959 | 129.5 | 118.4 | 33.0 | 29.2 | 146.2 | 174.7 | 1,084.0 |
| 1960 | 158.6 | 112.3 | 35.1 | 31.0 | 139.0 | 175.7 | 1,167.2 |
| 1961 | 158.8 | 106.0 | 32.3 | 28.5 | 116.7 | 167.8 | 1,125.9 |
| 1962 | 147.1 | 109.2 | 28.3 | 22.6 | 126.8 | 155.7 | 1,102.6 |
| PERCENTAGE INCREASE (+) OR DECREASE (-) | | | | | | | |
| 1945-50 | +8.9 | +4.0 | -34.6 | -63.7 | +334.2 | -11.0 | +9.6 |
| 1950-55 | -16.6 | -18.2 | -39.1 | -32.0 | -9.4 | -20.7 | -15.3 |
| 1955-60 | +4.8 | +8.6 | -10.2 | -18.0 | -26.4 | -8.6 | -6.2 |
| 1960-62 | -7.3 | -2.8 | -19.4 | -27.1 | -8.8 | -11.4 | -5.5 |

NOTE: The figures for 1963 cannot be compared with those of previous years because of new sector classifications.

Some remaining wartime regulations affect the figures for the late 1940's for some groups. Hence, up to September 1948 production in forestry was regulated, and it was compulsory for employers to make reports to the employment service agencies about the number of workers employed. Also certain positions continued to be affected by the regulations for building and construction.

TABLE A-2
Quarterly Change in Employment and Labor Shortage in Mechanical Workshops According to the Business Tendency Surveys, 1955-64
 (per cent)

| Year | CHANGE IN EMPLOYMENT ^a | | | | | | | | SHORTAGE OF ^b | | | | | | | |
|------|-----------------------------------|---------|---------|---------|---------|---------|---------|---------|--------------------------|----|-----|----|---------------|----|-----|----|
| | I | | II | | III | | IV | | Skilled Workers | | | | Other Workers | | | |
| | Ex Ante | Ex Post | Ex Ante | Ex Post | Ex Ante | Ex Post | Ex Ante | Ex Post | I | II | III | IV | I | II | III | IV |
| 1955 | -- | 57 | 1 | -2 | 27 | 15 | 36 | 23 | 79 | 76 | 75 | 73 | 60 | 59 | 49 | 31 |
| 1956 | 26 | 26 | 8 | 7 | 14 | 11 | 26 | 7 | 75 | 74 | 72 | 62 | 30 | 38 | 32 | 12 |
| 1957 | 17 | 18 | 13 | 18 | 10 | 10 | 6 | 1 | 66 | 55 | 57 | 46 | 7 | 22 | 6 | 2 |
| 1958 | -1 | -7 | -22 | -24 | -15 | -19 | -9 | -8 | 43 | 38 | 38 | 38 | 1 | 1 | 1 | 0 |
| 1959 | 5 | 5 | 4 | 26 | 23 | 46 | 33 | 55 | 38 | 56 | 52 | 60 | 3 | 13 | 27 | 50 |
| 1960 | 50 | 47 | 29 | 26 | 28 | 24 | 50 | 39 | 57 | 78 | 81 | 81 | 48 | 57 | 46 | 34 |
| 1961 | 39 | 12 | 17 | 37 | 51 | 50 | 37 | 40 | 79 | 86 | 84 | 71 | 39 | 57 | 51 | 46 |
| 1962 | 42 | 18 | 34 | 19 | 28 | 25 | 24 | 6 | 71 | 65 | 71 | 63 | 35 | 47 | 32 | 16 |
| 1963 | -1 | -3 | 14 | -8 | 20 | 16 | 21 | 13 | 51 | 56 | 58 | 64 | 26 | 38 | 36 | 30 |
| 1964 | 30 | 20 | 26 | 18 | 42 | 25 | 44 | -- | 58 | 67 | 74 | | 35 | 53 | 54 | |

NOTE: The firms are asked to adjust their estimates for seasonal fluctuations; however, the adjustments seem to be difficult for the firms to make. For that reason the different seasons are reflected in the figures to some degree.

^a The figures for change in employment relate to "net tendency," i.e., the percentage difference between firms that have denoted increase in employment and those that have denoted decrease. The weighting has been done proportionately to the number of workers in each firm. "Ex post" denotes accomplished development in the past quarter; "ex ante," expected development in the next quarter. The surveys were carried out to the end of December, March, June, and September.

^b The shortage figures relate to the percentage of firms which have answered yes to the question "Do you have a labor shortage?"

TABLE A-3

*Developments in the Swedish Labor Market, According to
Various Statistical Series, 1945-63*

| Year | Number of Job Vacancies (thousands) (1) | Number of Advertisements (thousands) (2) | Shortage of Workers (per cent) (3) | Unem- ployment- (per cent) (4) | Change in Employment Mining and Manuf. (per cent) (5) | Accession Rate (per cent) (6) | Separation Rate (per cent) (7) |
|------|--|---|---|---|--|--|---|
| 1945 | 1,341.1 | 126 | -- | 4.5 | 5.7 | -- | -- |
| 1946 | 1,455.4 | 146 | -- | 3.2 | 3.9 | -- | -- |
| 1947 | 1,460.4 | 144 | -- | 2.8 | 0.8 | 1.1 | 0.9 |
| 1948 | 1,417.2 | 137 | -- | 2.8 | 1.3 | 0.9 | 0.8 |
| 1949 | 1,331.1 | 126 | 3.3 | 2.7 | -0.6 | 0.7 | 0.7 |
| 1950 | 1,469.3 | 140 | 4.4 | 2.2 | 0.0 | 0.9 | 0.7 |
| 1951 | 1,453.0 | 143 | 3.8 | 1.8 | 2.0 | 0.8 | 0.7 |
| 1952 | 1,232.4 | 125 | 2.2 | 2.4 | -2.1 | 0.4 | 0.4 |
| 1953 | 1,175.1 | 111 | -- | 2.8 | -2.6 | 0.5 | 0.5 |
| 1954 | 1,238.1 | 129 | 3.4 | 2.6 | 0.8 | 0.6 | 0.6 |
| 1955 | 1,244.0 | 146 | 3.3 | 2.5 | 2.9 | 0.6 | 0.6 |
| 1956 | 1,173.8 | 118 | 2.2 | 2.9; 1.5 | 0.0 | 0.5 | 0.6 |
| 1957 | 1,075.1 | 104 | 1.4 | 3.0; 1.9 | -0.8 | 0.4 | 0.4 |
| 1958 | 1,012.7 | 88 | 0.4 | 2.5 | -1.6 | 0.3 | 0.4 |
| 1959 | 1,084.0 | 98 | 1.2 | 2.0 | 0.8 | 0.6 | 0.5 |
| 1960 | 1,167.2 | 131 | 2.4 | 1.4 | 4.9 | 0.7 | 0.6 |
| 1961 | 1,125.9 | 136 | 3.4 | 1.2 | 1.9 | 0.7 | 0.6 |
| 1962 | 1,102.6 | 119 | 2.3 | 1.3 | -0.4 | 0.6 | 0.5 |
| 1963 | 1,143.2 | 97 | 2.2 | 1.4 | -1.3 | 0.7 | 0.7 |

Source by Columns

1. Reported to the employment service by the Labor Market Board.
2. Advertisements in *Dagen Nyheter*, Stockholm.
3. According to the autumn inquiries on investments in mining and manufacturing (see Section C above): to 1962, Board of Trade; from 1962, Central Bureau of Statistics.
4. Average of twelve months: 1945-57, union statistics; 1956-63, employment service statistics. First figure for 1956 and 1957 is comparable with earlier years, second figure with later years.
5. Change in man-years since previous year according to statistics on production, etc., in mining and manufacturing: to 1962, Board of Trade; from 1962, Central Bureau of Statistics.
- 6, 7. Workers who began (6) or left (7) their jobs during one week as a proportion of all employed workers during that week: to 1962, Social Welfare Board; from 1962, Central Bureau of Statistics.