BRITISH REGIONAL EMPLOYMENT

AND

DEVELOPMENT POLICIES

A THESIS PRESENTED FOR THE CNAA DEGREE

OF

MASTER OF PHILOSOPHY

DEPARTMENT OF URBAN AND REGIONAL STUDIES

SHEFFIELD CITY POLYTECHNIC

M. Infante

September, 1977

PREFACE

The researcher would like to thank her supervisor, J. A. J. Moohan for his critical review of the manuscript and for his many helpful suggestions. The researcher gratefully acknowledges the constant encouragement of the teaching staff of the Department of Urban and Regional Studies of Sheffield City Polytechnic during the research.

The valuable co-operation of Mrs. R. Freegard of the Department of Computer Studies of Sheffield City Polytechnic is deeply appreciated as is Mr. E. W. Chandler's assistance in typing the manuscript.

ABSTRACT

Regional economic development has become an integral part of the national economic planning process of modern nations. Great Britain was the first country in the western world to adopt a regional development programme as a major component of Government policy.

One of the principal objectives of British regional development policy has been the reduction of unemployment rates in the depressed areas (while controlling labour congestion in the Midlands and South East conurbations). The diversification of the industrial structure of regions, and consequently of its working population, has been considered one of the main solutions in the prevention of unemployment.

This thesis aims to critically assess the effects of regional measures on unemployment by analysing the extent to which a diversification policy has in fact helped to reduce unemployment indices or rather merely created a major shift in the industrial structure of the regions.

The work is divided into two main parts. The first part starts with an introduction to the British regional problem including a brief summary of its origin and nature with the emphasis on the historical, social and economic factors which contributed to the creation of areas of contrasting economic development. A detailed study of the evolution of regional development policies and measures in Great Britain as far back as the setting up of the Industrial Transference Board in 1928 is undertaken in order to give a logical sequence and comprehensive background to the analytical part of the thesis.

The second part of the thesis surveys the different methods used to measure and explain changes in the economic structure of the

regions, emphasizing the effectiveness of the diversification policy in reducing unemployment. It continues with an examination of the use of alternative data disaggregation in the analysis of changes that occurred in the economic structure of the regions.

Finally an attempt is made to assess the most appropriate data disaggregation to be used when interpreting changes over time in regional economic structures.

CONTENTS

CHAPTER ONE

REGIONAL POLICY IN GREAT BRITAIN

> "The regional problem is a natural accompaniment to economic development. A rising standard of living necessitates changing industrial structures and patterns of trade all of which tend to favour some regions and disfavour others." [1]

I Introduction: The Nature of the Regional Problem in Great Britain

A specific characteristic of British economic growth and development has been that most of the more recent industries that have expanded since the end of World War II have shown different locational preferences from many of the older industries which were the basis of the country's industrialization in the nineteenth century.

During the latter period, one of the most important determinants of influence upon the location of enterprises and employment seems to have been the availability of coal and other industrial raw materials. As a consequence of this factor, major industrial and urban concentrations were developed in central Scotland, South Wales, south Lancashire, east and west Midlands, west Yorkshire and the north-east coast.

The development of these regional foci counter-balanced London's power and importance as seat of the Government, largest port in the country and also important industrial and commercial centre. Therefore, during this period the distribution of population in Britain seems to have been more than normally linked to the location of economic opportunity.

Since the first decade of the twentieth century, however, other factors seem to have become more important in the location of economic activity. The proximity to large or specialised consumer markets or to suppliers of

---

1 McCrone, G. Regional Policy in Britain. London, George Allen and Unwin Ltd., 1970, p. 13.

components parts as well as the availability of skilled labour, for example, led many new industries to the south east area of England where these facilities were more readily found.

In the immediate post war years the rising level of national wealth created demands for a wider range of facilities and services such as the importance of the variety of natural environment, the need for innovation and enterprise and the reduction in transport costs. These factors led a growing concentration of people to some larger conurbations and cities which, at the time, could best offer these services.

These tendencies - for both employment and people to move away from the less attractive industrial areas to the London-Midlands centre of national economic gravity - have been considered the principal features of the changing economic geography of Britain. [2]

These characteristics have, therefore, created in the long run two major problems:

(a) by creating some regions of rapid and highly localized economic development, these new locational preferences have presented certain parts of the country with a complex set of difficulties, intense and increasing competition for the use of the land and the need for government intervention to resolve the most appropriate size, location and timing of new and costly infrastructural investments. These problems are to be found in many parts of Great Britain, but more acutely in the south-east and west Midlands regions;

(b) the same spatial economic forces have, at the same time, left certain areas and regions with a generally slow rate of economic

2 Manners, G., Keeble, D., Rodgers, B. and Warren, K: Regional Development in Britain. London, T. Wiley and Sons, 1972, pp. 3-6.

growth and sometimes with characteristics of stagnation and decay. These regions tend to have higher than average unemployment rates, low activity rates and a steady net out-migration. [3] These areas are located particularly in the north and west of the country.

"Some parts of the country are unfortunate in their industrial structure in that they depend heavily on industries whose demand for labour in the country as a whole has stagnated or declined." [4]

Great Britain, therefore, became divided economically into more prosperous and less prosperous regions.

The more prosperous regions - the South-East, East Anglia, East and West Midlands and the South-West - had the advantages of market accessibility, varied labour markets, external economies, a tradition of strong entre preneurship and innovation, accessibility to capital, a wide range of social, cultural and educational amenities and a concentration of research establishments and proximity to central government.

The rapid growth of these parts of the country also created many problems, the most acute of which involved the permanent need of ensuring a certain minimum environmental standard for their urban populations (such as the clearance of slums and the improvement of schools) and a problem of general congestion of facilities such as roads, education and housing.

The less prosperous regions - industrial north-east and north-west of England, some parts of Yorkshire and Humberside, the central valley of Scotland, the industrial areas of Scotland and Wales[5] - have been characterised

---

3 See Appendix A: chart A1, chart A2, table A1, pp. 167-169

4 Brown, A. J.: Appendix "Economic Structure and Employment Growth". Hunt Committee Report. London, HMSO, 1969. p. 229.

5 See Appendix A: map A1, p 160

since the end of World War I, by a high level of unemployment, low economic activity rates and a steady net out-migration. The high levels of unemployment in these areas did tend to vary through time, reaching their peaks in the inter-war years. The industries in these less prosperous areas suffered, therefore, the consequences of Britain's structural changes: the production of specialised craft products in limited quantities be they in iron and steel, cotton, wool, etc. was replaced by modern industries based upon advancing technologies and concerned with mass production of standardised goods. These new industries developed and concentrated elsewhere.

Historical, social and economic factors contributed in creating these areas of contrasting economic development.

Historical factors:

(a) many of the new industries grew from existing lighter engineering trades which had never been very typical of the old industrial areas. The quality of labour needed for these new trades was very different from the labour available in the less prosperous regions. Although the great number of unemployed of those areas could have been retrained, there was high unemployment in south eastern England at the time. Thus, the less prosperous regions of the north and west were not given the attention required;

(b) the oligopolistic structure of most industries in the less prosperous regions created little local initiative for the establishment of new enterprises. This same structure, somehow, appears to have prevented the development of institutions and traditions which tended to make capital more readily available for the small industrialist.

Economic factors:

(a) In the nineteenth century, Britain had been able to open up huge export markets. After 1918, however, these industries had to face severe and ever-increasing competition from overseas nations. Furthermore, the interwar years added to the existing conditions, a currency chaos, a trend towards economic : autarky and a world economic depression. As a consequence, industrial growth in this period was primarily orientated towards the home market. These industries were characterised by low inputs of raw materials, by their assembly of components and high-value sub-assemblies. There was little incentive to locate on or near the country's industrial coal-field areas, which were generally distant to the centre of the national market. The fact that industries in the less prosperous regions were ill-served with transport and communications facilities to the rest of the country, imposed additional inconveniences and higher costs upon industries' operations. The transport situation, thus reflects one aspect of the absence of external economies which faced industries in less prosperous regions of Britain.

Social factors:

(a) Since World War II, the governments of most West European countries attempted to redistribute income from rich to poor through the taxation system, endeavouring also to run the economy at full employment. But the regional imbalance found in Great Britain was such, that not even the operation of monetary and fiscal measures at national level managed to eliminate this social problem;

(b) the less prosperous regions could not offer urban environment and social capital to employers and employees as in south-east

England. The north and west of the country had very little new social investment. After 1914 and even by late 1950's, these areas were characterized by

"an essentially Victorian urban inheritance." [6]

The problems created in the more prosperous as well as in the less prosperous regions varied in time and space. During World War II, for example, full employment was achieved in the economy and the traditional industries were operating under boom conditions. Thus, for a time, the problem of regional differences seemed to have disappeared.

After the war however, the renewed increase in unemployment levels as well as in regional differences in economic growth rates, encouraged the British Government to adopt a more effective body of regional development policies with the general objectives of -

"raising the rates of growth in the less prosperous regions so that labour reserves could be more fully utilized, migration reduced and the income gap between them and other regions closed." [7]

II Regional Development Policies in Great Britain

A The Inter-war Years

"Regional problems are not new in Britain but previously they had been confined, in the main, to declining rural areas, the Highlands of Scotland and Ireland being the most obvious examples. On occasion, special legislation had been passed to assist these areas, but this could hardly be described as a regional policy. In the middle of the nineteenth century, when the crisis in these areas was at its worst, government had neither the economic understanding nor the means to promote regional development." [8]

---

6 Manners, Keeble, Rodgers and Warren: op. cit., p. 45 - 46

7 Mc Crone, G.: op. cit., p. 21

8 Ibid., p. 92.

The inter-war years were a period of such high unemployment throughout Great Britain that the adoption of a regional policy was compelling. During this period (1920's) unemployment affected about one million people and during the worst years of the 1930's about three million people were unemployed.

1. The Industrial Transference Board

Regional policy is generally considered to have begun in the United Kingdom in 1928 with the setting up of the Industrial Transference Board. Although this was more of a labour policy than a regional development one, its purpose was to retrain labour originally trained in skills of declining industries and provide grants and loans to enable them to move and find employment in expanding industries elsewhere.

In the early 1930's, the government commissioned several studies of the worst areas where unemployment averaged forty percent of the total labour force. [9]

2 The Special Areas Act of 1934

As a result of these studies, the Special Areas Act of 1934 (Special Areas Development and Improvement Act) designated four special Areas in Britain: South Wales, north eastern England, West Cumberland and the Clyde-side - north Lanarkshire industrial area in Scotland. [10] To promote the rehabilitation of these areas, two commissioners were appointed, one for England and Wales and one for Scotland. The choice of these areas was severely criticized because some areas - in worse conditions than the Special Areas - were not included and some major towns - such as Newport,

---

9 Reports of the Investigators into Industrial Conditions in certain Depressed Areas. Cmd 4728, Ministry of Labour, HMSO 1934.

10 See Appendix A: Map A2, p. 161

Cardiff, Swansea, Glasgow, Newcastle, etc. - were excluded on the grounds that unemployment in these towns was not so severe as in their surrounding areas.

The Commissioners were given a sum of two million pounds, but they had very limited powers. They were not allowed to finance projects for which a government grant from other sources was received or was payable and they were also not allowed to provide funds for profit-making enterprises. Thus, there was no direct assistance to private industry. Therefore, the Commissioners' resources were spent on settlement of labour on land and in sewage schemes.

By 1935-36, in the Third Report of the Commissioners for Special Areas, attention was drawn to the need for additional finance. In April 1936, the Special Areas Reconstruction Association (SARA) was set up by the Bank of England with Government backing and with the main function of providing loan capital for small businesses in Special Areas. As the operations of SARA were limited to small firms, it became evident that SARA was insufficient to exert major influence on the economic structure of the Special Areas.

By 1936, Lord Nuffield had set up a private Trust to help undertakings in the Special Areas. A year later the Special Areas Amendment Act gave powers to the Treasury - on advice of a Special Areas Loans Advisory Committee (SALAC) - to give loans to firms in Special Areas, provided that this assistance should be available for larger undertakings than those covered by SARA.

3. The 1937 Special Areas Amendment Act

The 1937 Special Areas Amendment Act also encouraged the development of trading estates operated by non-profit making companies, giving the Commissioners wide powers to let factories to private entrepreneurs in any

part of the Special Areas for which the trading estate company would act as agent.

The provision of trading estates has been a characteristic of British regional policy from early years. The idea was first brought up by the public sector in the 1936 Report and the first governmental estates were set up in the Team Valley (north east), Treforest (South Wales) and Hillington (Scotland). The companies operating these estates would lay the basic infra-structure (services) and would build factories to be rented at a cost that would cover only the building expenses they had incurred.

Along with the financial provisions and further development of trading estates, the 1937 Special Areas Amendment Act also introduced several tax incentives.For the first time these incentives were given on a regional basis in the United Kingdom - this measure only to be re-introduced again in the 1963 budget. According to the 1937 Act, the Commissioners were enabled to give contributions in relation to a firm's rent, rates and income tax for a period not over five years and the firms in the Special Areas were exempted from the National Defence Tax.

A further measure to attract industries to the Special Areas was the introduction of labour transference. Mc Crone wrote about the importance of this policy, stating,

> " . . . it is the principle instance in the history of British regional policy of an attempt to promote the movement of workers to the work. [11]

The Industrial Transference Board Report of 1928 regarded the movement of population out of the depressed areas as the only solution to the unemployment problem. Therefore, the principal measures it had used were the provision of grants and loans to help cover removal of people to another area and the setting up of training centres to enable such labour to acquire new skills.

---

11 Mc Crone , G.: op. cit., p. 97

But the movement of labour later proved to be no solution to the problem of the depressed areas. When a surplus of labour was to be found all over the country, the retraining and transfering of labour achieved very little. The exodus of the more skilled part of the labour force from the depressed areas aggravated the problem of these areas, that needed enterprising labour to stimulate new industries.

The failure of this industrial transference policy in the 1930's led to a post-war policy concentrated strongly on taking work to the workers, no matter where they happened to be.

Insofar as the Government had - by 1939 - a definite set of measures to encourage industrialization in the depressed areas, no measures existed to control the development in the more prosperous and congested areas of the country. This made the overall effectiveness of regional policy very limited.

Nevertheless, the position of the Special Areas did improve a little in the 1930's: from an average of 35 to 40 per cent unemployed in 1932-34, unemployment fell to 25 per cent in 1938. The economic structure of the areas, however, were substantially the same in 1938 as in 1934; the reduction of the unemployment rates in this period could have therefore, been more influenced by labour recruitment for the rearmament than as a result of regional policy measures.

The pre-war regional policies were, thus, as a whole, not very effective up to the late 1930's

But even if the results were small, the measures introduced in the 1937 Act at least made regional policy much easier to operate.

One of the most important causes of the failure of regional policy before the war (or, at least, of its trivial results) has been considered

the low level of aggregate demand in the economy as a whole. There was surplus labour all over the country (therefore no need for an industrialist to go to the Special Areas to find labour); despite the generous inducements offered in Special Areas, few industries were interested in relocating when the national demand for their products was depressed.

As early as in the third Report of the Special Areas' Commissioners, attention was drawn to the fact that the further development of congested areas (especially Greater London) should be controlled if the Special Areas' problems were to be solved. At the time, unemployment still persisted, the problems of the depressed areas were hard to solve and the increased concentration of population in already congested areas raised important social and economic issues.

4 The Barlow Report

The Government thus appointed a Commission under the chairmanship of Sir Montague Barlow to examine the problem and,

> ". . . to inquire into the causes which have influenced the present distribution of industrial population . . . , to consider what social, economic and strategical disadvantages arise from the concentration of industries and to report what remedial measures, if any, should be taken in the national interest." [12]

The Report published in 1940 as the Report of the Royal Commission on the Distribution of Industrial Population, found that the geographical trends in distribution of industry and population were undesirable and it was necessary to alter this geographical distribution and to check the growth of London. Its main proposals were:

(a) national action was required to influence the distribution of industry and population and that a Central Authority should be given this responsibility;

---

12 McCrone, G.: op.cit., p. 102.

(b) the objectives should be to redevelop the congested areas together with the decentralisation of industry and population and to achieve a regional balance of diversified industry;

(c) the use of garden cities and satellite towns, as well as the expansion of rural towns and trading estates were to be reviewed as means of implementing this policy;

(d) assistance should be given to the local authorities to tackle development problems regionally and the Central Authority should have the right to inspect all new planning schemes;

(e) the Authority was to be responsible for research on location of industry and the use of natural resources. It was to be able to anticipate depression in particular areas and to encourage development before depression would occur. [13]

The Report of the Royal Commission appeared when the war was in progress and the general attention was diverted to more urgent matters with the Special Areas' problems disappearing for the time.

The Barlow Report is considered an important item in the attack on the regional problem in Britain because it emphasized the economic case for regional development regarding the problem of congestion of some cities and the unemployment of depressed areas as different aspects of the same problem. The Report also stressed the need for research in order to promote sound economic development and to identify the problems of the regions in advance of a critical situation arising so that appropriate redevelopment measures could be taken.

The Barlow Report further stressed the importance of the role of

---

13 Report of the Royal Commission on the Distribution of Industrial Population (Barlow Report) London, HMSO, 1940, p. 84.

planning as well as the relationship between regional economic planning and physical planning, the importance of using new towns and public investment in infrastructure to spread regional economic development, and the concept of "growth areas". The growth area concept, first developed by F. Perroux in France suggests that where a depressed area is incapable of developing, its resources may have to be regrouped in a location within the region which offers a more suitable environment for development. [14]

But the ideas brought forth in the Barlow Report were considered to be too early for their time and it was not until the 1960's that these ideas were to reappear and form the basis of many changes in British regional policies.

B. The War and Post War Period

As already mentioned, the war years brought unemployment in Great Britain to extremely low levels. Most of the industries in the Special Areas were operating at full capacity. The need for armaments and the shipping losses restored the steel and shipbuilding industries. The aggregate demand had risen to such levels that strict controls had to be used to prevent an inflationary situation. Unemployment dropped to the low figure of 75,000 people for the whole of the United Kingdom in 1944 (in comparison with the figure of approximately three million people in the worst years of the 1930's).

Fears of unemployment in the post-war years, however, were present as there appeared to be every indication that the 1930's situation could recur.

The Government and the major political parties, at the time, were determined to prevent the repetition of such a disastrous situation. As a result of their planning, the White Paper on Employment Policy was published by the Coalition Government in 1944.

---

14 Perroux, F.: "Note sur la Notion des Poles de Croissance" in Economie Appliquee, 1955, 1, 2, p. 307-320

1. The 1944 White Paper on Employment Policy

This document was considered of prime importance in British economic life, for it was the first time a British Government pledged to maintain full employment.

It is important to note that although the Government had been able to control the aggregate demand level in wartime there was the possibility of an excessive amount of structural unemployment occurring in certain areas (declining industries areas) insofar as that the demand level appropriate for a national economic policy could result in inflationary pressures in some areas without necessarily eliminating unemployment in others.

Some of the measures suggested in the White Paper were:

(a) to increase the efficiency of the basic industries so as to secure overseas markets (once most of these industries were export-oriented);

(b) to influence the location of new industries;

(c) to give aid to the transfer of workers by such measures as resettlement allowances and the provision of sufficient houses to rent;

(d) to provide labour retraining facilities.

The newly established Board of Trade would be involved in the redesignation of the problem areas and the main policy implications of the White Paper were based on three main points:

(a) the policy had to be basically economic;

(b) some labour movement within the areas would be necessary; and

(c) not every depressed village could be assisted.

2 The Distribution of Industry Act of 1945

The Distribution of Industry Act of 1945 - later supplemented by the Distribution of Industry Act of 1950 and the Distribution of Industry (Industrial Finance) Act of 1958 - is considered the foundation of British

regional policy in the period 1945-1960. It replaced the Special Areas Act of 1934 and renamed and redelimited the assisted areas. They were now called Development Areas and although their boundaries remained approximately the same, the inclusion of some major towns increased the population of these areas from four million inhabitants in 1939 (8.5 percent of the total population of Great Britain) to six and a half millions (13.5 percent of the country's total population). [15]

The policy followed - according to the White Paper - was to choose nuclei, in which development could be most economically established and not to use unemployment rates as the basis for redevelopment measures, The worst problem area - with highest unemployment and lowest level of income per head - was Northern Ireland, whose economy was still based on such declining industries as textiles, shipbuilding and low productivity agriculture.

Being a self-governed area, Northern Ireland had its own legislation to attract industries and although it was not scheduled as a Development Area, inducements were offered through the Northern Ireland Capital Grants to Industry and Industries Development Acts. Industrial estates were organized and run by the Ministry of Commerce and in general the area profited from the British policy of restricting development in the most prosperous regions of the country.

The main responsibility for this new policy was given to the Board of Trade which was to take over the functions of the former Special Areas Commissioners. The Board of Trade activities included:

(a) the building of factories in the Development Areas, buying the land even by compulsory purchase, if necessary;

(b) making loans, with the consent of the Treasury, to the industrial estate companies;

(c) making provisions for the basic public services;

---

15 See Appendix A: Map A3, p. 162

(d) reclaiming derelict land;

(e) the concession of grants and loans by the Treasury to assist specific industrial undertakings on advice of the Development Areas Treasury Advisory Committee (DATAC), provided that the Committee was satisfied both with the economic viability of the project and that finance could not be raised from other sources.

The 1945 Act did not provide any form of tax incentive as a means of providing industrial development. The development measures in this Act were very similar to the pre-war policies; one difference, however, was the amalgamation of all kinds of loans under DATAC (as against the pre-war situation where SARA was concerned with loans to small companies and SALAC granting loans to big enterprises). Furthermore, the provision of payments to cover part of the costs of rates, rents and taxes which the Special Areas Commissioners did before the war, was abolished in the new legislation.

The Board of Trade's powers were further reinforced by two special measures:

(a) the control of new factory development which had been recommended in the Barlow Report. At first, a building license system, which had been introduced as a war-time control, was used as a control on the location of new development. This temporary measure was used only until 1950. The definite system of location control - the Industrial Development Certificates - was introduced in the Town and Country Planning Act of 1947. This system made it compulsory for new industrial development with more than 5000 square feet to have a Board of Trade Certificate before planning permission could be granted;

(b) the building of new towns was required as an urban development solution to slum clearance, rehousing of the urban population and for repair of war damage.

The awareness of the congestion of large cities, the social desirability of cutting down travel to work and the impossibility of rehousing population -

with acceptable population densities - in areas in which they originally lived indicated the building of new towns as the only viable urban development policy. Besides being created for urban redevelopment, new towns had a potential role in regional economic policy. McCrone remarks that in the 1948 White Paper, the new towns of Aycliffe and Peterlee were linked to and referred in connection with the industrial estates of the North-east. [16]

Most of the post-war new towns, however, were located with the function of serving the needs of urban development policy and were mostly built around London. [17] It was only after 1960 and after the success of the new Towns in central Scotland and north eastern England as centres of industrial growth, that new Towns were recognized as an important measure of regional policy and their future location and size became to be considered with this in view.

The period 1945 - 1960 was a period, therefore, in which the Government gave different priorities to regional policy: at first, great stress was given to the solution of the regional problem. In a second stage, however, the regional problem was given less priority by the Government. In a third stage further measures were introduced to restore governmental priority to regional policy problems.

There was a tremendous impetus for industrial expansion and development in the post-war years and with such prospects of new development to take place, there was greater potential for industrial mobility in Great Britain than ever before. [18] This situation created the favourable conditions necessary to steer industries to new locations.

As a result of the application of new regional policy measures, the Government was able to set up fifty percent of all new industrial buildings in Great Britain in the Development Areas in 1945 - 47, even if these same

---

16 McCrone, G.: op.cit., p. 111

17 See Appendix A: Map A4, p. 163

18 McCrone, G.: op. cit., p. 112

areas had only twenty percent of the nation's total population.

During the whole period of the Distribution of Industry Act (1945 - 1960), the Treasury's expenditure in regional policy was approximately twelve million pounds - between loans and grants - and the Board of Trade's expenditure totalled about seventy eight million pounds spent in building factories and in industrial estates investment. [19]

The industrial structure of the areas, however, was not and could not be greatly changed. The maintenance of unemployment at acceptable levels would have required an economic expansion of these areas to be - at least - as great as the national average. But, being that they were still largely dominated by old industrial structures, it was very difficult for this expansion to take place.

It is important to note here that the apparent economic success of the post-war years was responsible for Government according a lower priority to regional policies in the late 1940's and first half of the 1950's. Therefore, when Great Britain was suffering from balance of payments problems and inflationary pressures, the constriction in Government expenditures also affected the Development Areas policies. The building of advance factories, for example, stopped from 1947 to 1959 and the pressure on businessmen to locate their enterprises in the Development Areas was greatly reduced. The Board of Trade's expenditure on factory building fell by fifty percent in this period and the amount of new industrial development completed between 1948 and 1950 in the Development Areas was only 17.2 percent of the national total, in comparison with a regional population of 18.3 percent of the total population of the country.

The 1951 Conservative Government tried to reduce the amount of controls in the economy. Building licences, for example were abolished in 1954.

---

19 See Appendix A: Table A3, p. 171

Although this appeared to be of little importance in Government control over industrial location, the Industrial Development Certificates (IDC) were easily obtainable at the time even for developments in the Southeast and in the Midlands.

For a time, however, the continuing expansion of the traditional industries - probably still as a result of the provision of new peacetime infrastructure - masked the real problem that was not yet solved. Unemployment in the 1950's was still at a relatively low level, compared with the pre-war years even if it was already above the national average in Scotland, Wales and Northern Ireland. But the Welsh economy, for example, was growing faster than Britain's in the 1950's and the Scottish economy was still keeping pace with the United Kingdom until 1954.

The decline in the traditional industries was unforeseen and it was to be caused by a series of complex factors. In shipbuilding, for example, production caught up with demand and at the same time the international market became highly competitive, while the British yards were insufficiently modernized, poorly managed and troubled by labour problems.

After the apparent economic success, therefore, of the first few post-war years, the British growth rate tended to decline in the second half of the 1950's. Balance of payments problems, inflationary pressures and consequent deflationary measures such as the credit squeeze and the autumn budget of 1955, the post Suez measures of 1956 and the seven percent bank rate of 1957 - all these problems greatly affected the problem regions, hitting the coal and shipbuilding industries most seriously. Steel production also fell below capacity and the traditional textiles industries also suffered in this period.

As a consequence of this deteriorating situation, the Government once again decided to give priority to regional policies. The controls of the

Industrial Development Certificate(IDC) were at once tightened again and some amendments to the legislation were passed. The Estimates Committee study (1955 - 1956) [20] pointed out the need to deschedule some Development Areas - considering their lower level of unemployment in comparison to surrounding regions - and to include others.

In answer to this situation, the Government passed the Distribution of Industry (Industrial Finance) Act of 1958. This Act kept the existing Development Areas that were in need of continuing assistance, adding some smaller development regions where the Treasury's power to give grants and loans were extended under DATAC. Such loans and grants were to cover any sort of trades and were no longer restricted to industry.

The criteria for selecting these additional areas was the existence of high unemployment rates. Regional policy was, thus, regarded primarily from the social point of view with the tendency of being linked to unemployment levels.

The underlying concept of regional development policies in the period 1945 - 1960 was based on the economic aim of stimulating sound economic growth in the regions. Mc Crone, however, does not believe this aim was really followed up. [21] The objectives mentioned in the Barlow Report, in the 1944 White Paper and in the Distribution of Industry Act - reorganization of basic economic structure, reorganization of infrastructure and modernization of regional environments - had not been undertaken.

The economic structures of the problem regions were still largely based on problem industries and the urban environment still suffered from the poor

---

20 Second Report of the Select Committee on Estimates: Session 1955-56, The Development Areas, HMSO.

21 McCrone, G.: op. cit., p. 119

and depressed conditions of the nineteenth century.

C. Regional Policies since the 1960's

1 The Local Employment Act of 1960

The year of 1960 has been considered as the natural dividing line in the development of post-war regional policy. It was in that year that the Distribution of Industry Acts - which had been the basis of post-war policies since 1945 - were repealed and replaced by the Local Employment Act of 1960. It was also in this period and due to the gravity of the economic regional problems of the country that regional policies were given a much higher degree of priority by the Government than in the 1950's.

The Government's attitude towards regional policy in the 1960's underwent several important changes. Greater emphasis was established to be given to economic factors, even if this new outlook was not apparent. The 1960 Act, for instance, ignored economic factors more than any other legislation passed before. Economic growth, however, had become an important issue due to the comparison of Great Britain's low rate of growth regarding Europe and to the frustration of its incessant stop-go cycle.

2 Budget and Local Employment Act of 1963 and the 1964 Labour Party Government

Attention was directed to ways of promoting regional expansion and to the contributions which the regions might make to increase the national rate of growth. This change of attitude began approximately in 1963 with the establishment of growth areas and the beginning of regional economic planning.

Attempts were also made to relate economic planning to physical and transport planning and to create an environment conducive to growth. The role of new towns, urban renewal and infrastructure in creating an adequate environment to stimulate growth began to be considered.

All these ideas were not new. The Barlow Report in 1940 had already emphasized the importance of promoting economic growth based on areas capable of expansion as well as the importance of linking regional economic planning and physical planning.

The development of regional policies in the 1960's is usually divided into three phases: the local Employment Act of 1960, the Budget and Local Employment Act of 1963 - which amended and strengthened the 1960 measures - and the changes introduced by the Labour Government in 1964.

3 Policy Measures since 1960

The group of measures adopted in regional development policies since 1960 covered a vast range of incentives.

a The scheduled areas, qualifying for assistance were changed in the 1960 Local Employment Act. The old Development Areas were abolished. Since their original scheduling in 1945 they had been altered only once for the inclusion or exclusion of areas, depending on Parliament's approval.

Under the new 1960 legislation, the Board of Trade had the power to schedule the new Development Districts, which were based on the Local Employment Exchange areas. These districts could be scheduled and/or descheduled without Parliamentary approval, but the choice of areas was to be based on unemployment criteria. The Development Districts were defined by the Board of Trade as

> "localities, in which a high rate of unemployment exists or is imminent and is likely to persist." [22]

The Board of Trade adopted four and a half percent of the insured population unemployed as the critical figure. But as the Board of Trade had ample powers, it included areas without hesitating if their unemployment

---

22 Local Employment Act, 1960 London, HMSO, p. 1.

rates were likely to rise or excluded them if any announced expansion was likely to lower the unemployment levels.

The areas of the country included as Development Districts were South Wales, north-eastern England, west Cumberland, Merseyside, part of Scotland and many more little areas since almost every region in the country had a pocket with four and a half unemployment rate. Some rural areas such as Cornwall, north Devon, parts of Wales and the whole of the Highlands and Islands of Scotland were also added. [23] It was the first time that rural areas were included; they were considered in the 1948 White Paper but had not been added because the industrial measures of the former Development Areas would not apply to them.

The geographical extent of the new Development Districts varied, therefore, according to the level of activity of the economy and the percentage of regional unemployment.This system, however, did present two disadvantages: first, the frequent changes of inclusion and exclusion of Development Districts upset industrialists' plans for expansion and made long-term planning by the public authorities very difficult. A certain area, for example, was in a Development District. Then, the Board of Trade would decide to exclude it, giving it no more incentives. If unemployment in the area increased again, then this same area would be included once more. Any industry wanting to locate in one of the Development Districts could never know if the area would remain a Development District or not.

The second disadvantage was in regard of the usage of unemployment rates as a criterion for scheduling Development Districts. If the variable unemployment is to represent a measure of social distress and of additional work needed to bring about full employment then it does not necessarily represent a measure of an area's economic potential for development. [24]

---

23 See Appendix A: Map A5, p. 164

24 McCrone, G.: op. cit., p. 125

The Special Areas Commissioners as well as the Barlow Report in 1940 had already recognized the impossibility of creating new employment in some areas and in such cases some labour movement was acceptable. This approach had been expressed in post-war legislation but had been dropped in the 1960 Act. The emphasis given on unemployment percentages of the Local Employment Exchange Areas meant that the worst areas were often the ones with the least chance of development. Yet they were chosen to be Development Districts where greatest Governmental priority was given. More suitable and better located sites for development could be found but if they did not have four and a half per cent unemployed, the area would not be scheduled as a Development District.

The efforts to stimulate development in the Development Districts appear to have failed not only because some locations were unsuitable and other possible successful areas had not been encouraged but also due to the greater emphasis given to social rather than to economic aspects, even though the Government had committed itself since 1960 to give greater priority to economic factors. There was more concern in providing employment than stimulating economic growth.

All these problems were brought up in two documents published in the autumn 1963: the White Paper on central Scotland and the White Paper on north eastern England. These documents can be considered to have been the first attempts toward linking regional planning to the growth area policy. The important characteristic of these White Papers is that they modified the scheduling of the assisted areas. Both central Scotland and north eastern England suffered badly from unemployment, reaching a peak rate during the 1962-1963 recession for the 1960's.

The White Papers, therefore, adopted the policy of stimulating viable growth areas. They designated eight growth areas in Scotland and a growth zone in north eastern England, to which all the benefits of the Development

Districts would be applied plus the retention of these benefits, regardless of the level of unemployment which might subsequently prevail. These areas ought to be built up as centres of economic growth with a programme of public investment outlined in the White Papers.

But this approach was only applied to Scotland and north eastern England leaving the scheduling of the rest of the Development Districts still dependent on the unemployment criteria.

A final change came with the new Labour Government of 1964. New legislation was passed - the 1966 Industrial Development Act - which abolished the Development Districts and created new Development Areas. These new areas selected were the whole of Scotland, the northern region and the Furness peninsula, Merseyside, Wales (except parts of the northern coast and around Cardiff) and Devon and Cornwall. [25] They included fifty-five per cent of the land area of Great Britain and approximately twenty per cent of the country's working population. New areas could be added according to need although they were no longer selected on basis of their unemployment rates. As the new areas covered a large extension of land, industry would be expected to select a preferential site and no longer be restricted to unemployment blackspots. This policy hoped to concentrate industries to natural growth points in the regional economies.

An economic squeeze in 1966-67 as well as the closedown of many mines led to severe unemployment in the coal-mining areas. There was no indication, furthermore, that the available labour could be easily absorbed.

These specific areas were, therefore, scheduled by the Government as Special Development Areas and were to receive special priority. They were the coalfields in Scotland, north east England, west Cumberland and Wales.

---

25 See Appendix A: Map A6, p. 165

These areas had already been included as Development Areas by the 1966 Act, but this new legislation granted them especially favourable terms such as a larger building grant, assistance to cover operating costs and availability of Board of Trade factories, rent-free for a period of five years.

This policy seems to have been the result of the acute social distress and political pressure. The unemployment approach was being used again without considering the growth potential of the areas chosen. The transformation of any of these areas into growth poles would have required massive public investment and planning.

There has been little change in the coverage of the Development Areas since they were originally designated in 1966. Special Development Areas have been created within them. The Local Employment Act of 1970 created, further, Intermediate Areas, which were extended in 1971 and 1972. These Intermediate Areas include the area around Edinburgh, Leith and Portobello in Scotland, the north western part of England, the north east and south east coasts of Wales, the Plymouth area in south west England, Yorkshire and Humberside and the Nottinghamshire and Derbyshire areas of the East Midlands region. The North Midlands Land Clearance Area includes the upper north part of the East and West Midlands. This separate designation was scheduled in order to give immediate stimulus to industrial buildings and for the restoration and modernisation of existing enterprises.[26]

b. The use of controls: The 1960 Local Employment Act did not introduce alterations in the measures to control new industrial development. The Industrial Development Certificates (IDC), originally created by the Town and Country Planning Act of 1974, still remained and had to be obtained from the Board of Trade for any industrial development - outside the Special Development Areas, the Development Areas and Northern Ireland. Apart from these areas, an application for planning permission for industrial floor

---

26 See Appendix A: Map A7, p.166

space of an area greater than 10,000 square feet in the south east and greater than 15,000 square feet elsewhere, had to be obtained and had to be supported by an Industrial Development Certificate.

During the early 1960's this regional measure was severely criticized for leaving office development subject to no restraint except the normal local authority planning permission. The country's office employment was largely concentrated in the South east region. A White Paper study in 1963 estimated that of about 40,000 jobs created annually in the London conurbation, only twenty per cent were in manufacturing industries and that at least 15,000 new office jobs were created each year in central London alone. Office growth is still considered to be the main cause of London's congestion and of the over-loading of its public services, even though it is the main source of employment growth in that area.

In 1963 a Location of Offices Bureau was set up to tackle the office congestion problems and to try to encourage office development to move from central London to the peripheries.

The new Labour Government in 1964 required all new office development in London to obtain Board of Trade permission as from November 1964. This measure was formalized in the Control of Office and Industrial Development Act of 1965. Under this Act, no office building over 3,000 square feet of floor space could be built in the London Metropolitan region without first obtaining an Office Development Permit from the Board of Trade. This same Act also gave the Board of Trade the power to designate areas outside the London Metropolitan region which would need control. In August 1965, for example, Birmingham was put under control and by July 1966 the Southeast, East Anglia, West Midlands and East Midlands were all controlled regions. The Board of Trade, however, exercised its power especially in the London area. Before issuing an Office Development Permit for any of the controlled areas, the applicants had to satisfy three criteria:

(a) residential accommodation was not required for their employees in another area;

(b) no satisfactory alternative office accommodation was available;

(c) development was essential to the public interest.

The Industrial Development Certificates are still necessary in order to obtain permission for industrial development outside the Special Development Areas, the Development Areas and Northern Ireland, if the industrial floor space to be created by that development exceeds 5,000 square feet in south eastern England, 10,000 square feet elsewhere in England outside the Intermediate Areas and 15,000 square feet in the Intermediate Areas in England and Wales.

c. Selective assistance loans: the 1960 Act continued the system of granting special loans to firms in scheduled areas for expansion schemes on advice of advisory committees. The extent of this kind of assistance in the 1950's was very small due to the restrictions imposed by the Committees: a project, asking for assistance had to be economically sound and firms had to show they could not raise money elsewhere. In 1960, the Advisory Committee of the Development Areas (DATAC) was transferred to the Board of Trade and was renamed Board of Trade Advisory Committee (BOTAC), having removed the conditions by which firms requiring assistance had to prove inability to raise money elsewhere. This measure not only increased greatly the Committee's ability to provide assistance but also made much larger sums available.

BOTAC'S assistance, however, was linked to the requirement of the projects benefitting employment. This system had the advantage that it could be used to discriminate in favour of particular types of industries, such as labour-intensive developments or in favour of particular areas. One must note, however, two big disadvantages this system incurred: first, the negotiations took such a long time and the inducements were not always very clear;

secondly, so much attention was paid to costs per job created that inter-industry linkages were sometimes neglected.

Under Section 7 of the Industrial Act of 1972, the Department of Industry - under the Ministry for Industrial Development, it is now the government department responsible for private sector industry generally and for industrial development in the Areas for Expansion - still makes available to industry selective financial assistance to encourage industrial projects which will improve the employment prospects in the Special Development Areas, the Development Areas and the Intermediate Areas.

Assistance is still considered on the basis of employment to be provided. This assistance is provided on favourable terms for general capital purposes projects or on non-proferential terms for other projects that maintain and safeguard employment, but that the finance required could not be obtained from commercial sources. As an alternative to loans on favourable terms, interest relief grants are provided. These grants are towards interest costs of finance provided from private sector sources for projects which create additional employment. The normal rate of grant is three percent per year for up to four years. In special cases, where an interest-free period on a Department of Industry loan is applicable, a grant may be at a higher rate per year for up to two years and three per-cent per year for up to a further four years.

Still in the category of employment-creating projects, the Department of Industry offers removal grants. When an undertaking is moved from any part of Great Britain outside a scheduled area into one of these areas, a grant may be provided of up to eighty per cent of the costs of removal of the plant and machinery, stocks, materials and the employer's net statutory redundancy payments at the old location.

Selective assistance is, therefore, granted to two categories of projects, first the category of projects and expansions which create additional employment -

and secondly the category of modernisation and rationalisation projects, which will not necessarily provide extra jobs but will maintain or safeguard employment. This second category includes two types of assistance, both of which will be given only where finance cannot be reasonably obtained from commercial sources. The assistance will be in the form of loans at broadly commercial interest rates.

The first type of assistance is towards service industries moving into the assisted areas. A service industry, company office, or research and development unit moving into a Special Development Area, Development Area or Intermediate Area with a genuine choice of location between the assisted areas and the rest of the country and creating at least ten new jobs in the assisted areas as a result of the move can qualify for a fixed grant of eight hundred pounds for each employee moved with his work. This loan, however, is limited to fifty per cent of the number of additional jobs being created in the new location.

The other type of assistance in this category is a loan that may be given to cover the whole cost of approved rent of premises in the new location for a period of up to five years in a Development Area and up to three years in an Intermediate Area. Equivalent help may be given where premises are bought rather than rented. It is important to note that moves which qualify for help under this category may also receive other selective assistance described earlier (the employment-creating category).

The range of industries that qualify for selective assistance loans include mining, manufacturing and construction industries. Some service industries such as transport and communications, distributive trades, professional and scientific services are also considered if they provide ten or more new jobs in an assisted area and if they are mobile projects with a genuine choice of location between the assisted areas and the rest of Great Britain.

d. Building grants: in the 1960 Act, regional development building grants were introduced with the purpose of giving firms that built factories in the Development Districts, the same advantages as those that leased Board of Trade factories at favourable rents. Building grants, however, were not automatic and the formula by which the grant was determined was very complicated and raised much criticism at the time. Firms could claim up to eighty-five per cent of the difference between the cost of building the factory and its value once completed. The advantage of this system - instead of a percentage payable on the cost of construction - was claimed to be its greater effect in regard to the depressed regions: the more depressed the region, the lower the current market value of the factories.

But the complications of the formula made this grant's benefits obscure and its effects, as inducements, were rather diminished.

The 1963 legislation corrected this fault by introducing a standard system of grants and inducements, thus replacing the 1960 building grant with a new payable standard rate of twenty-five per cent of the actual construction costs including essential services, fixtures, etc. For most areas, this system was better and more generous towards areas with hopes of growth.

The 1966 Industrial Development Act retained the standard rate of twenty-five per cent in the new Development Areas, but also made a provision to raise it to thirty-five percent in the Special Development Areas.

In 1972, the new Industry Act introduced some alterations in the rates of building grants: twenty-two percent of construction costs in Special Development Areas and twenty percent in Development and Intermediate Areas. These regional development building grants are still in force, at these rates, towards providing new buildings or works (excluding mining works) and on adaptations of existing buildings on premises used wholly or mainly for carrying on manufacturing, mining and construction activities. For the purpose of this grant, eligible costs normally include site preparation but exclude the

cost of the site.

This grant may be paid to an occupier of a premise if he provides the building or to a developer or anyone else (including local authorities and New Towns Development Corporations) who provide a building for occupation by a tenant for use as qualifying premises. Where two or more persons contribute to the cost of providing a building, each can receive a grant on their respective shares.

e. Machinery and plant grants: the 1960 Act had not established any standard grant or loan for machinery and plant works. Firms were obliged to rely on the special grants released from BOTAC. The need for a standardized system of grants and inducements led the Government to pass the Finance and Local Employment Acts of 1963. Grants for new plants and machinery in the Development Districts were to cover ten percent of the costs. The only condition imposed on firms requesting this grant was the creation of additional employment in the new investment.

The most important innovation of the 1963 legislation, however, was considered to be the adoption of "accelerated depreciation". Under this scheme, any industry in the Development Districts was entitled to amortize its investment in plants and machinery against its profits at whatever rate it chose. The firm was thus allowed to pay no tax until the full cost of the capital investment was recovered. This scheme could be interpreted as an interest-free loan from the Inland Revenue giving firms an increased liquidity. For example, if a firm reduced its profits to zero in the first year amortizing the investment at an accelerated rate, the firm would escape tax liability in this first year. In the end, the total tax to be paid would be equal. But accelerated depreciation gave the firm the option of delaying tax payment until the whole cost of the investment was recovered.

This scheme was very popular with industry and was considered one of

the mosteffective of the 1963 measures.

In 1966 plants and machinery grants and accelerated depreciation were replaced. The Labour Government introduced major tax changes in the economy and established the Corporation Tax, which had the side effect of reducing the value of incentives for regional development. The value of any tax exemption was diminished because Corporation Tax set at forty percent was less than the fifty six percent due for income tax plus profit tax.

The need to redress the balance of the British economy forced the Industrial Development Act of 1966 to make some drastic changes. Plants and machinery grants, accelerated depreciation and tax allowances were all abolished. The main change in Development Areas' policy, though, was the establishment of investment grants to be paid at twenty per cent generally and at forty percent in the Development Areas. These grants were not limited by employment created or by the soundness of the investment. The system was very simple and granted more incentives to firms in Development Areas than under the 1963 legislation. [27]

At present, regional development machinery and plants grants are again available in Special Development Areas or in Development Areas towards capital expenditure in new machinery and plant on premises used wholly or mainly for qualifying activities and on mining works. The grant may be paid to the purchaser of the asset or, in case of hired assets, to the owner. The grants are not made on individual items of plant and machinery costing less than one hundred pounds or on individual building schemes costing less than a thousand pounds. In a Special Development Area the rate of regional plant and machinery grant is twenty two per cent; and twenty per cent in the Development Areas, Intermediate Areas and North Midlands Derelict Land Clearance Area. For the construction industry the grant may be paid for new machinery and plant provided its use is in the Special Development Areas and

27 See Appendix A: Table A3. p.171

the Development Areas, even though it may not be confined to premises used wholly or mainly for qualifying activities. If it is not so confined, the rate of grant is twenty per cent whether or not the equipment is used in the Development Areas.

These grants are also available to firms already established in the assisted areas on the same basis and at the same rates as the incoming firms. They are available, furthermore, for the modernisation of an existing enterprise without securing any increase in employment as well as for new projects that provide additional jobs.

f. The Regional employment premium, introduced in 1967, was the first regional policy measure to subsidize labour costs directly. The premium was paid by using the Selective Employment Tax machinery, under which an employer in manufacturing industry was able to claim back the full value of Tax paid on his employee plus a premium of 7s. 6d. per man per week with smaller premiums for women and boys and girls. The manufacturing employers in the Development Areas could claim a further 30s. per man per week.

This legislation was modified in the autumn of 1967 by post-devaluation measures. The 7s. 6d premium for employers outside the Development Areas was abolished and the employer in the Development Area received a total premium of 37s 6d per man per week plus the reimbursement of his tax. Employers outside Development Areas only received the reimbursement of the Selective Employment Tax. The premium was payable to all employers in industry in the Development Areas and was not limited to schemes for expansion as were the previous inducements. Certain parts of the Development Areas, however, - the rural areas of the Scottish Highlands, Cumberland and Westmoreland, Wales and Cornwall - suffered greatly as a consequence of the regional employment premium. These regions depended heavily on tourism and as the REP was limited to the manufacturing sector, they did not benefit from this incentive at all.

Theoretically, the REP was based on Keynesian techniques of economic management at the regional level rather than based primarily on the need for labour-intensive industries. The idea was that since the scheme would lower production costs for the industries in the Development Areas, it would have the effect of a regional devaluation, improving the competitive position of regional production and thus stimulating exports with a consequent gain to the balance of payments. And as labour was the excess resource of the problem regions, a labour rather than a capital subsidy was required.

The REP was originally set up to be phased out over a period from September 1974. But in March 1974 the Chancellor of the Exchequer announced that this scheme would be continued beyond September 1974 and in July he announced the new rates which would come into effect in August 1974. The new rates for full time employees were: £3 for men over 18; £1.50 for women and boys and £0.95 for girls. Part-time employees' rates were: £1.50 for men over 18; £0.75 for women and boys and £0.47½ for girls.

Broadly, any employer with a manufacturing establishment in a Special Development Area or a Development Area which was registered under Section 1 of the Selective Employment Payments Act of 1966 qualified for REP for his employees at that establishment. Firms engaged in scientific research or training related to manufacturing would also qualify.

At present the REP has been phased out. In August 1975 a "temporary employment subsidy" was introduced to help firms located in areas of high unemployment which are faced with the necessity of declaring large redundancies. In the April 1976 Budget, the Chancellor of the Exchequer proposed an increase of the short term subsidy from £10 to £20 a week to industry as well as extended the subsidy to include redundancies of ten workers (previously the minimum of twenty five redundancies were necessary to apply for the 'temporary employment subsidy').

g. Labour training and transfer costs: the expansion of new industries in the assisted areas was slowly changing the industrial structure of the regions creating, therefore, the need for new skills to operate these new enterprises. The concept of labour surplus in an area has to be very clearly established for according to the kind of labour required, there may even exist a labour shortage. The re-employment of labour surplus, therefore, may require an extensive re-training programme.

The 1963 Budget had set aside ten million pounds for a retraining scheme and the Labour Government in 1964 put an even greater emphasis on this policy. The Industrial Training Act of 1964 empowered the Ministry of Labour to set up training boards for the different branches of industry and commerce with the purpose of ensuring sufficient training and to help finance this programme through grants paid out of levies imposed on industry. This finance provided by the Government to assist the training boards plus the grants paid were to help the employers install machinery for training purposes. Primarily, the arrangements were orientated towards on-the-job training. Where more skills were required, the retraining could be undertaken in the Government's training centres. These grew from 13 centres in 1963 to 48 in 1969.

When the cost of training workers doubled in 1967, the firms in the assisted areas received further subsidies from the Government. The grants were limited to training lasting from two weeks to fifty-two weeks and firms renting accommodation for training could receive an extra grant to cover half of the rent and rates for a period of two years plus half of the cost of adaptations required in the buildings. The Government also introduced another subsidy in labour training: firms in the assisted areas could have half of tuition costs repaid when managerial, supervisory and technical staff undertook approved instruction courses.

At present there are several training services offered to all firms in the Special Development Areas, Development Areas and Intermediate Areas,

in addition to national programmes operated by the Industrial Training Boards. These special, free services cover a wide range of measures:

- instructors from the Department of Employment will help train new workers and existing employees in a firm's own workshop for intermediate skills in engineering and similar trades and also help the firm's nominees take over the training schemes;
- special Training Within Industry (TWI) and Training Development Service (TDS) facilities are designed to develop skills in instructing and communication, the handling of staff problems, improvement of working methods, prevention of accidents and the training of operator-instructors. This scheme also covers training in clerical and commercial procedures including export documentation;
- supervisory, operator-instructor and clerical training are made available to firms in the assisted areas throughout the country. A firm's nominated staff can also be trained to present any course by attending the Department of Employment's training centre;
- where training in instructional skills is needed, a firm's staff can attend special Instructor Training Courses and Instructor Training Units (ITC and ITU). These courses are held in several different parts of the country, but if a firm cannot release its staff to attend these centres, they may be arranged on the employer's premises. They may also be modified to meet a firm's special needs;
- training is also available at Government Training Centres in or near the assisted areas. By agreement with the Department of Employment an employer can interview trainees and arrange for the last few weeks of their courses to be directed towards his own needs. He can also sponsor his own employees for either initial training or training in additional skills. Sponsored training is free, but the employer must pay the trainees' wages and expenses during their course and take the trainees back into normal employment when the training is finished, and
- facilities are available for assessment of workers' aptitudes and

adaptability for a particular type of work through the Industrial Rehabilitation Units.

Many industries have Industrial Training Boards that are empowered to raise a levy on employers in order to pay grants to foster training in industry. According to a publication of the Department of Industry in August 1974 [28], the Boards' administrative expenses as from April 1975 would be met by the Exchequer and funds would also be made available to support key training activities. Levy rates would be subject to a maximum of one per cent of the payroll and all firms with adequate training would be able to obtain exemption from levy.

Until March 1974, grants were available to firms in the assisted areas, through the Industrial Training Boards for seventy per cent of the capital cost of new machinery and equipment or fifty per cent of the cost of second-hand or reconditioned machinery needed for additional off-the-job training places at the semi-skilled level. A capital grant of sixty per cent of the agreed cost of additional training places for craft, technicians, commercial and administrative training was also available until that date. Alternatively, a per capita grant of one hundred pounds a year was available to such trainees who on January 1, 1974 had been employed for three months or more.

In August 1976 some 30,000 extra training places in industry were provided by the Manpower Services Commission at an approximate cost of fifty five million pounds.

The transfer - permanent or temporary - of employees to a new plant in the Special Development Areas, Development Areas and Intermediate Areas also got special financial help from the Department of Employment. To qualify, employees had to be recognised by the Department of Employment as Key workers, i.e., workers needed to install plant or machinery, to train local

28 See Reference and Bibliography page. 325

employees or to form a nucleus around which a local labour force could be built. To obtain this help, the Department of Employment had to be satisfied that suitable unemployed workers with equivalent experience were not available in the assisted areas.

If a firm was expanding business already located in a Special Development Area, Development Area or Intermediate Area, employees brought into the Area were only eligible for help provided a new type of production requiring new skills and techniques was introduced. Employees recruited from outside the firm and going straight into the new project were not eligible for assistance as key workers.

The benefits for all key workers included free second class fare to take up employment in the new area, plus return fare if the move was temporary; settling in grant of seven pounds on arrival; and, second class fares for the worker or nearest relative in emergencies such as illness or domestic difficulties.

Depending on whether a key worker had dependants or not, or if his move was temporary or permanent the assistance provided by the Government varied. As a rule, however, assistance was limited to two years from the date of transfer, with temporary key workers not expected to remain in the new area for more than twelve months.

Another form of labour assistance involved the recruitment of unemployed workers living in the assisted areas. If a business set up in a Special Development Area, Development Area or Intermediate Area or if it expanded an existing business by introducing a new type of production, assistance would be granted by the Government to transfer (temporarily) formerly unemployed workers of the assisted areas to a parent factory of the new undertaking for special training. During a training period of up to six months, these workers would benefit from the same grants and allowances as temporarily transferred key workers under the key workers scheme.

Transfer costs assistance like labour training programmes are still part of the Government's regional measures to alleviate unemployment in the assisted areas.

h. Tax Allowances: under the provisions of the Finance Act of 1972, capital expenditure incurred anywhere in the country after March 21, 1972 on machinery and plant would qualify for a first year 100% allowance in the period for which the expenditure is incurred. Likewise, capital expenditure incurred after March 21 on the construction of industrial buildings would qualify for a first-year allowance of forty four per cent, followed by annual writing down allowances of four per cent of costs.

The cost to a trader of equipment and buildings used for scientific research related to his trade was written off entirely in the year in which it was incurred.

If trading profits in the year the expenditure was incurred were insufficient to absorb the full tax allowance for that period, the excess could be carried forward indefinitely and set against future profits of that trade. In case of a company entitled to a first year one hundred per cent allowance on machinery and plant, any excess related to this allowance would be carried back and set against profits of the three preceding years.

In the period 1973 - 1974, these tax allowance concessions cost the Government approximately one hundred and fifteen million pounds.

i. Contracts preference schemes: firms in the Special Development Areas and the Development Areas were given every opportunity to enter public contracts and where price, quality, delivery date and other considerations were equal, Government purchasing departments, nationalised industries and other public institutions would be encouraged to place contracts with firms in these areas in preference to those elsewhere. Furthermore, in special

appropriate cases, Government purchasing departments would operate a scheme under which firms in Special Development Areas and Development Areas that had been unsuccessful with their first tender, would be given a second chance to tender again for up to twenty five per cent of the requirement and at a price that would not increase the total cost.

At present, firms in the assisted areas are still given preference in tendering for contracts with Government departments, nationalised industries and other public bodies.

j. Finance from European Community funds: the European Investment Bank (EIB) and the European Coal and Steel Community (ECSC) have for several years made available loans on favourable terms for regional development projects. The elegibility of projects for regional selective assistance under Section 7 of the Industry Act of 1972 did not affect applications for Community finance, though firms applying were expected to ensure the greater part of the cost of the project from outside the public sector.

In 1974 the EIB would lend up to forty per cent of the fixed capital costs of projects which were:

- for the development of less developed regions;
- for modernisation, converting undertakings or for developing new activities relevant to the establishment of the Common Market;
- of common interest to two or more member states.

The EIB offered attractive interest rates and the duration of industrial projects loans varied generally from seven to twelve years. Loans were made in a mixture of currencies and repayments were made in the similar mixture. The EIB loans were generally for large projects and the Bank preferred to make direct loans of not less than 500,000 units of account, (approximately £250,000 in 1974). Loans for smaller or medium-sized projects were usually handled by a financial intermediary - the Industrial and Commercial Finance Corporation (ICFC) - which had three and a half million pounds

in August 1974 from the EIB for on-lending to support smaller projects in the United Kingdom's assisted areas.

The European Coal and Steel Community (ECSC) loans were available for:

- direct assistance to projects in the coal and steel industries under article 54 of the Treaty of Paris;
- assistance under Article 56 of the Treaty of Paris to projects in areas affected by coal and steel run-down where there was a probability that a proportion of new jobs (normally thirty per cent, but a low ten per cent would also be considered) would be provided for redundant coal and steel workers.

The interest rate for ECSC loans was seven and a half per cent in August 1974, but for reconversion loans under Article 56 the interest rate was four and a half per cent for the first five years and seven and a half per cent thereafter. The maximum loan amount would be generally thirty per cent of the fixed capital costs (excluding working capital) and the duration for repayment was usually 15 years.

With the entry of the United Kingdom as a full member of the European Economic Community in 1975, Great Britain and Northern Ireland have been receiving further subsidies in their programme to alleviate unemployment and steer economic growth in the assisted areas.

k. Industrial estates and Government factories: up to 1960, industrial estates accounted for the largest governmental expenditure in regional policy.

After the war, factories were built in advance creating, therefore, many problems of a speculative nature. The Local Employment Act of 1960 brought about a complete change in this situation. The redefinition of the assisted areas from Development Areas to Development Districts made the old system of management of industrial estates virtually impossible. Before this redefinition, separate Industrial Estates Companies had existed for each of the major areas. With the designation of the Development Districts,

however, the areas were too small. The former companies were replaced by three Industrial Estates Management Corporations: one for England, one for Scotland and one for Wales. This system has been retained to the present.

Government factories have been considered an important feature of regional policy. One must note, however, that the 1964 Labour Government put so much emphasis on this measure, that of the thirty two factories built in 1964, only twenty one were occupied until 1967. This excess building was a direct consequence of using unemployment rates as measures of an area's potential for economic growth.

Today, the Department of Industry still offers factories - new or previously used - in industrial estates or in single sites in the assisted areas. These factories are provided for projects creating additional employment or for the re-housing of an operation already in business when the existing premises are unsuitable.

The new factories are of two main types: advance or custom-built. The former are built on advance of demand and are normally readily available, ranging in size from 10,000 to 50,000 square feet. These advance factories are usually located on sites which allow for expansion. Both advance and custom-built factories may be either for rent or sale.

Rents for the Department of Industry's factories are based on current local market values and are usually below those in the Midlands and south-east England. For projects providing additional employment, the factory may be rent-free for the first two years of occupation (subject to a "cost per job" limit). The Department of Industry also sells existing rented factories as well as new ones. Repayment of capital and interest is usually spread over a period of fifteen years at a fixed rate of interest and the first payment of capital and interest is usually due only after six months of completion.

III Regional Councils

In recent years policy measures have been variously introduced in the British regional development programme. The establishment of the National Economic Development Council (NEDC) in 1963 with the general purpose of planning a faster growth rate for Great Britain - by switching emphasis from eliminating regional unemployment differentials towards showing how each region might best contribute to the performance of the national economy - contributed to a new approach towards regional policy.

At the regional level, England was divided into eight planning regions plus Scotland, Wales and Northern Ireland designated as three separate regions. Regional Economic Planning Councils were set up in each region and were supported by Regional Planning Boards.

The National Economic Development Council (NEDC), was and is, the body of regional policy in Great Britain co-ordinating, at a national level, the work of the regional bodies. The Regional Economic Planning Councils were originally designated to: assist in the formulation of regional plans, having regard to the best use of a region's resources, advise on the steps necessary to implement such plans with aid provided by information from the planning boards, and advise on the regional implications of national economic policies.

The early works of the regional bodies included descriptions of each region's structure and amenities, forecasts of population and employment changes, determining regional priorities and giving suggestions on how the Government could assist in promoting each region's economic objectives. These reports also studied the housing problems and estimated the housing needs of each region and examined the implications of regional growth for the population distribution within each region.

Since the beginning of 1974, however, unemployment in Great Britain has been rising very fast. The rate of increase has varied considerably from region to region (the biggest proportionate rises occurring in the West Midlands and the South East, the lowest in Scotland and the North).

It is argued that the widespread increase in unemployment in recent years has had its origins in the explosion of oil prices nearly four years ago, the subsequent recessions in many industrial countries and, to a large extent, wage-generated inflation in the United Kingdom.

Traditionally high unemployment areas, such as Scotland and the North, have continued to suffer higher unemployment rates than other parts of the country, but unemployment has been rising faster in lower unemployment areas, such as the South East and the Midlands, and the gap has narrowed in proportionate but widened in absolute terms. To some extent could this represent an acceleration of a long-term narrowing of regional relativities which has been occurring since the mid-1960's when regional policy was considerably strengthened?

CHAPTER TWO

SURVEY AND ANALYSIS OF REGIONAL UNEMPLOYMENT PROBLEMS: METHODS AND TECHNIQUES USED TO MEASURE AND EXPLAIN THE RELATIONSHIPS BETWEEN UNEMPLOYMENT AND CHANGES IN THE ECONOMIC STRUCTURE AND DEVELOPMENT OF THE REGIONS.

I The choice of variables - population and employment - in the study of regional unemployment and growth

Historically, regional economic growth in Great Britain has tended to be examined and analysed in quantitative terms using the variables of population and employment. In the absence of long run regional income statistics, the emphasis on population and employment data as indicators of quantitative growth and change can be attributed to two main issues.

Firstly, the measurements of the volume and growth of economic activity are usually based upon the size and rate of growth of population and employment and upon the size and distribution of incomes. The distribution of population as well as its concentration and growth reflect, broadly, the relative economic developments in different parts of the national economy. A period of rapid regional population increase, for example, usually tends to be associated with increased economic activity, since people tend to move towards locations with good job opportunities. Population growth and distribution also give a general indication of variations occurring in consumption and since it is the source of a major production input - labour - it also tends to reflect upon the pattern of production. [29]

It is important to note a number of limitations when using population

---

29 Lee, C. H.: Regional Economic Growth in the United Kingdom since the 1880's. McGraw Hill, Maidenhead, 1971, pp. 21 - 24.

statistics as a unique indicator of economic growth and change. Population statistics do not tend to show accurately the quantitative differences between regional consumption levels; these are best determined by the level of employment and of wages and incomes. Neither does this data reflect the level of employment or activity rates of a region. [30] The rapid growth of population, for example, tends to reflect booming economic activity, although the decline of population or even of the rate of growth does not necessarily indicate economic stagnation.

Population statistics must, therefore, be used with employment and income data when analyzing differences in economic growth between regions. [31]

The second main issue upon which the importance of population and employment data is based is the availability of official statistics. For the United Kingdom, regional data on population is one of the few economic variables that can be measured back over a long period of time - as far back as 1861 - with reasonable accuracy. Employment and unemployment figures for the regions of Great Britain are available since the 1920's. This data, however, also has important weaknesses: no figures, for example, are available on unemployment in the regions prior to the 1920's; although the Ministry of Labour Gazette provides unemployment figures from the mid 1920's, changes in regional definitions inhibit comparability over time; another limitation of employment data is the non-registration of potential workers at labour exchanges in periods of high and persistent unemployment; short-time working is yet another form of concealed unemployment, unrevealed in employment data.

---

30 D. M. Smith has questioned this parameter in the case study of Liverpool. Smith, D. M.: Industrial Location - An Economic Geographical Analysis. John Wiley and Sons Ltd., New York, 1971.

31 Lee, C. H.: Op cit., pp. 22 - 23.

The weaknesses of the British method of measuring overall unemployment rates are considered numerous and have been pointed out by the American Bureau of Labour Statistics and the National Institute Economic Review. Some authors believe that the origin of all limitations derive from the fact that the British data are collected according to the payment of unemployment benefits and only those registered at the employment exchanges at the beginning of each month being considered unemployed. [32]

Although the weaknesses of the figures available are relevant information to bear in mind, the purpose of this Chapter is to examine and analyse certain aspects of the regional unemployment problem based on available statistical material rather than to evaluate the merits of the different series of data.

II Survey of different analyses of the unemployment problem in Great Britain.

Thirty three years have gone by since the British Government first pledged itself to maintaining full employment in the national economy by publishing the White Paper on Employment Policy in 1944. [33] Although regional unemployment measures had been created and adopted as early as 1928, it was during the past three decades that Government involvement became increasingly greater with considerable interest directed towards the spatial allocation of human resources.

A. The Governmental Policy Objectives

As already mentioned in Chapter 1, the policy objectives of regional intervention were aimed at reducing unemployment in Northern Ireland, Scotland,

32 Bosanquet, N. and Standing, G.; "Government and Unemployment 1966-1970: a Study of Policy and Evidence" British Journal of Industrial Relations, July, 1972, Vol. X, No.2, p. 181.

33 White Paper on Employment Policy: Cmd. 6527, HMSO, 1944.

northern and western England and Wales bringing these high regional unemployment rates nearer to the national average; and it was also involved in problems of congestion arising from uncontrolled growth of conurbations like London and Birmingham.

The strategies used in both cases were based on the assumption that it was better to stimulate employment in areas with a large percentage of workforce out of work than to encourage migration from these areas to places where demand for labour was chronically in excess of supply.

The spatial variations in unemployment levels at the time were regarded primarily a consequence of the structural changes occurring in the economy. For this reason, certain industries had special provisions granted in order to reduce their rate of decline. The coal industry, for example, was protected by a tax on fuel oil in the 1950's as well as restrictions imposed on coal imports and pressure was used on the Central Electricity Generating Board to use coal in preference to other fuels. The textile manufacturing sector was helped by massive subsidies for re-equipment and by import quotas. The shipbuilding industry was granted special investment incentives along with placement of government orders for naval vessels as a special aid for the restructuring of the industry.

The group of policies applied to discourage growth of employment in the London - Midlands conurbations (in order to stimulate expansion into the less favoured regions) involved the general inducements such as investment grants, the Regional Employment Premium (REP) as well as the use of powers to encourage firms to move from one part of the country to another through the issuing of Industrial Development Certificates (IDC), building of advance factories, special housing provisions for key workers, etc. [34]

The main purpose of the policy measures directed to affect the

---

34 See Chapter 1: p. 22-43

geographical distribution of employment was to increase the aggregate number of jobs in the less fortunate areas. This implied the introduction or expansion of new industries in the less favoured regions or the fostering of industries which were under-represented and potentially viable.

As a result and consequence of government policies, the areas of high unemployment rates should have experienced a great change in their industrial employment structure - towards the diversification of job opportunities - as new industries replaced traditional declining ones.

1 Analysis of the impact of Government policy

Many articles and papers have been written analysing the successes and/or failures of the British regional unemployment policies.

a. Chisholm and Oeppen and the impact of mobile industries on the employment structure of the regions

Chisholm and Oeppen use the evidence collected by Howard (1968) relating to mobile manufacturing plants in the period 1945 - 1965 to suggest that the mobile industries had a rather great impact on the employment structure of some regions. Due to factors previously discussed in Chapter 1 [35], the structure of the industrial sector tends to vary substantially from one region to another. In the same way, the movement of manufacturing plants from one area to another tended to cause changes in the distribution of employment. [36]

Both authors, based on Howard's evidence, defend the principle that government policy has indeed contributed to regionally differentiated shifts in employment structure. They further argue that if the mobility of

---

35 See Chapter 1: p. 1-6

36 Chisholm, M. and Oeppen, J.: The Changing Pattern of Employment Croom Ltd., London, 1973, pp. 10 - 12.

industries did in fact produce spatially differentiated shifts in industrial structure, the role of new development in the primary sector was even more important. The primary industries had experienced a severe decline in employment and the coal mining sector, for example, had its decline located in limited geographical areas. In this way, the authors suggest that government policies trying to balance the loss of mining jobs by encouraging new industrial development resulted in the structure of total employment undergoing an even more radical change in this sector than in manufacturing alone. [37]

b. Thirlwall and the self-perpetuating phenomena of regional unemployment rate differences

A. P. Thirlwall, on the other hand, believes that regional planning legislation has been unsuccessful in its attempts to narrow unemployment rates. Based upon facts such as "over the period of 1948 to 1963 the growth of individual industries in the underemployed regions was no faster than in the overemployed regions and that the dispersion of regional unemployment rates around the national mean (. . . .) showed no tendency to lessen over time", [38] he suggests that regional unemployment rate differences in a free market may tend to be a self-perpetuating process. Policies concentrating on the geographic distribution of demand for labour which ignore the supply side of labour contribute to the inability of the Government to control labour migration from the underemployed regions to the overemployed areas, and thus to the failure of past regional policy. [39]

Analysing the direction of geographic mobility in Great Britain, a

---

37 Chisholm, M. and Oeppen, J.: op. cit., pp. 17 - 18

38 Thirlwall, A. P.: "Migration and Regional Unemployment: Some Lessons for Regional Planning" in Westminster Bank Review, November 1966, p. 32.

39 Thirlwall, A. P.: op. cit. pp. 31 - 32.

predominant movement from north to south has occurred. Despite the existence of regional policies for bringing work to the workers in the underemployed regions, there has been a net outflow of workers from within these areas.

In support to his argument of a close interdependence between the demand and supply of labour in a free labour mobility market, Thirlwall establishes the following reasoning: if the regional unemployment rate expresses, as a percentage, the relationship between the absolute numbers of unemployed in a region and the total number of employees, and given that the total number of employees equals the sum of the numbers employed and unemployed and that the rate of employment measures the strength of demand for labour, then the rate of unemployment is a measure of the lack of demand for labour in relation to the supply available. In this way, regional unemployment rate differences are interpreted to be caused by the different strengths of labour supply and demand in different parts of the country. [40]

The self-perpetuating aspect of the regional unemployment rate differences is explained in that the process of migration starting from movements of labour from regions where unemployment rates have risen to regions where they have remained the same, tends to continue in order to "maintain the differences, of which it is a function". [41] If no regional differences exist in the rate of natural population growth, regions with net immigration will tend to have more rapidly expanding markets than regions from where the movement originated.

The Governmental intervention in the geographical distribution of demand for labour has not influenced the imbalance between demand and labour supply in Great Britain, thus permitting the continuation of the self-perpetuating process of the flow of labour from the north to the

---

40 Thirlwall, A. P.: op. cit., pp. 34 - 35

41 Thirlwall, A. P.: op. cit., p. 38

south. [42] The demand for labour in the southern part of England has been greater than the supply, while the opposite trend has been characteristic of the northern part of the country.

Concluding, Thirwall believes that an end to the self-perpetuating phenomenon is possible as long as action is taken by the Government in either bringing the demand for all labour under stricter control or by discouraging the movement of labour from the north to the south. [43]

c. Thirlwall and the regional cyclical sensitivity to unemployment

In another article, Thirlwall explains the persistence of regional unemployment rate differences and consequently the failure of regional policy in this field by alluding to

> "the fact that fluctuations in the percentage level of national unemployment have tended to be associated with unequal changes in the percentage level of unemployment in different regions of the country." [44]

In order to measure the degree to which unemployment can be considered to be a major or minor regional problem, standard deviations are used, comparing the deviations of regional unemployment percentages from the national average at specific dates. If the deviations have widened, unemployment is considered to have become more of a regional problem and if they have narrowed unemployment has become less of a regional problem. The results obtained by Thirlwall tend to show that as the dispersion widens, national unemployment percentage rises, thus supporting the author's argument

---

42 Thirlwall, A. P.: op. cit., p.41

43 Ibid., p. 43

44 Thirlwall, A. P.: Regional Unemployment as a Cyclical Phenomenon" in Scottish Journal of Political Economy, June 1966, Vol. XIII, No. 2, p. 205.

that "the regional problem is partially a cyclical one." [45]

As far back as the 1930's, the unemployment problem of the underemployed areas was usually explained in terms of the industrial structure of those areas, particularly by the concentration of the labour force in contracting, declining industries rather than in expanding ones. This assumption led to the general belief that structural imbalance causing the persistence of the regional problem had not been successfully handled by the Government in so far as their policies had not been able to provide a more even distribution of expanding industries throughout the country.

Thirlwall believes this approach tends to neglect other aspects of regional unemployment rate differences. The underemployed areas, for example, did have a larger percentage of their labour force in declining industries, but the expanding industries existing in the areas had a slower growth rate than other expanding industries located in other parts of the country. He believes, therefore, that the underemployed regions experienced a reduced capability of absorbing unemployed workers. [46]

Analysing the statistics available, he concludes that regional unemployment differences may arise from the percentage level of unemployment varying more in one region than in others, since he finds no reason to believe that regional and national unemployment rates should be of the same magnitude. As each region has its own characteristic industrial composition, this will cause each region's sensitivity to changes to differ from one another. [47]

Thirlwall calculates a series of regression coefficients (obtained by regressing each region's unemployment rate onto the national unemployment

45 Thirlwall, A. P.: op. cit., p. 207.

46 Ibid. page 208

47 Ibid. pp. 208 - 209.

rate) and uses these measures as indicators of each region's sensitivity to unemployment. His results reveal some differences in sensitivity between regions in relation to changes in national unemployment. These differences, according to Thirlwall, stem from two major determinants: the industrial structure of the regions and the sensitivity of an industry between regions. The industrial structure of regions is an important determinant of each region's cyclical sensitivity to unemployment in that it explains why some regions are more sensitive than others.

However, the industrial structure factor alone does not exhaust all of a region's sensitivity for "industries differ in their sensitivity as between regions".[48]

For this reason, Thirlwall regresses the percentages unemployed in an industry onto the percentage unemployed nationally in order to obtain the measure of each industry's sensitivity to unemployment. The differences found among the several sensitivities to unemployment between industries are considered to be caused by two main factors: firstly, some industries have a stronger tendency than others towards unemployment in periods of economic recession; this could be due to the relative income elasticity of demand of the products these industries produce. The second issue involves the greater difficulties of the unemployed in some industries as against the unemployed in other industries to be re-absorbed into the labour force.[49]

According to Thirlwall, Government action should be directed towards the reduction of regional unemployment rates around the national mean. The increase of the sensitivity of a region in the downward direction (when national unemployment is falling) or the decrease in sensitivity in the

---

48 Thirlwall, A. P.: op. cit. p. 211

49 Ibid., p. 214

upward direction (where national unemployment is rising) is necessary if some regions have higher unemployment percentages than the national average and are, at the same time, cyclically sensitive to unemployment. [50]

These measures tend to depend, ultimately, upon the Government's disposition in deciding with more rigour on the types of industries to encourage to specific regions, although there are numerous difficulties involved in such actions. [51]

d. Moxon and the influence of the Industrial Development Certificates on employment creation

J. W. J. Moxon studied the influence of issues of Industrial Development Certificates (IDC) on new employment growth in Scotland. He first analyzed two articles by Holmans [52], who examined the degree to which the (IDC) system assisted controlled employment growth in the South East and who concluded that the system had limited effect in reducing the industrial expansion of that region. Moxon points out a number of limitations in Holman's study, especially the inadequate relationship established when comparing gross employment figures (the IDC employment estimate) with the net estimate of employment change. [53]

---

50 Thirlwall, A. P.: op. cit., p. 215

51 Ibid., p. 218

52 Holmans, A. E.: "Restriction of Industrial Expansion in South-East England: a Reappraisal" Oxford Economic Papers, Vol. XVI, No. 2, 1964 and "Industrial Development Certificates and Control of the Growth of Employment in South East England" Urban Studies, Vol. I, No. 2, 1964, pp. 138 - 152.

53 Moxon, J. W. J.: "The IDC System and Employment Creation" Urban Studies, 1972, Vol. 9, pp. 229 - 230.

His own analysis, based on gross changes in employment compares the gross increases in employment at the establish ment level for all of Scotland's industries between 1963 and 1967 with the volume of employment connected with IDC's issued over the same period. Although employment associated with IDC's did not represent all employment expansion occurring in the industrial sector at the time, Moxon's results did tend to show that -

> "a considerable growth in expansions took place in sufficiently large concentrations to suggest that it fell within the range of employment growth normally thought detectable by the IDC controls." [54]

In three different approaches reviewed above, Chisholm and Oeppen, Thirlwall and Moxon examine specific aspects of the unemployment problem in Great Britain, either assessing the positive results of the application of Governmental policies or critically analysing the failures of Government intervention.

e Conceptual framework of manpower policies in Great Britain

It is important to mention at this stage, however, that a conceptual synthesis of general manpower policies to be adopted in Great Britain has been elaborated by several authors.

Thirlwall believes, for instance, that -

> "ignoring social objectives, national manpower policies exist primarily to encourage employment and reduce unemployment in the interests of growth; to foster labour mobility also for the sake of growth; and, to reduce imbalances in the labour market." [55]

---

54 Moxon, J. W. J.: op. cit., p. 233

55 Thirlwall A. P.: "Government Manpower Policies in Great Britain: their Rationale and Benefits" British Journal of Industrial Relations, July, 1972, Vol. X, No. 2, p. 165.

In 1970, the Government spent approximately 750 million pounds per annum financing manpower policies in Great Britain. About one half of this total was directed to the promotion of industrial development and location policy (including the Selective Employment Premium); training schemes and employment services received approximately 200 million pounds; and, the insurance schemes (set up to lessen the effects of industrial change) absorbed another 200 million pounds. [56]

When studying the actual benefits of unemployment policies in relation to its costs, a distinction is made between the micro and the macro benefits of such policies. The micro benefits are envisaged as those which identify themselves with each individual policy and occur as a consequence of the application of such policies. Macro benefits, on the otherhand, are those resulting from the more general objective of reducing the disequilibrium existing in the labour market. [57]

The imbalance existing in a labour market may affect the stability of an aggregate economy either by increasing the conflict between wage stability and full employment or by increasing the conflict between full employment, full growth and balance of payment stability. In the first case, Thirlwall believes that a reduction in labour imbalance could decrease the general rate of change of wages without increasing the unemployment level by assuming -

> "a positive relation between the level of employment in labour markets and the steepness of individual market wage rate adjustment functions . . . often referred to as the Phillips relation." [58]

The case of labour market imbalances causing difficulties to the

---

56 Thirlwall, A. P. op.cit., p. 166.

57 Ibid, ., p. 166

58 Ibid, p. 167.

balance of payments stability at full employment is considered to be an unresearched hypothesis. Thirlwall, however, considers it a plausible hypothesis in the sense that in so far as the labour and product market are closely linked, an excess demand for labour will also cause an excess demand in the product market. Thus, planned expenditure will tend to be larger than the output available. If no international trade exists, a decrease in stocks will occur as well as an inflationary process. But if the market considered does produce for export or if import substitutes exist, the exports may be directed towards the home market and imports can increase in order to eliminate the differences between expenditures and output. In either cases, the trade balance will tend to deteriorate. This argument assumes a functional relation (similar to the relation in the labour imbalance and inflation case) between the level of employment and the state of the balance of payments. In this case, Thirlwall believes the relation will depend on the degree of disequilibrium in the product market, although it is the labour market imbalance that will be responsible for the lack of labour mobility. [59]

The solutions suggested to maximize the macro benefits of unemployment policies differ according to whether mobility occurs between either occupations and regions or in the regions. If the aim is industrial and occupational balance, the solutions offered include the continued emphasis on planning and forecasting the supply of and demand for labour force as well as the adequate provision of employment services and training and retraining schemes. On the other hand, considering the aim of regional balance, the remedies submitted are the reduction in the flow of labour from low to high unemployment regions and the maintenance of the policy of taking work to the workers. [60]

---

59 Thirlwall, A. P.: op. cit., pp. 170 - 171

60 Thirlwall, A. P.: op. cit., p. 173

When dealing with the micro benefits of unemployment policies, Thirlwall suggests that the benefits required to exceed costs in manpower policies aiming to stimulate employment and reduce unemployment can be considered in two ways; either by estimating how much unemployment must be kept below the level that would exist in the absence of policy or by calculating the degree to which re-employment must be accelerated compared with the market mechanism.[61]

The role of the Employment Exchange Service in finding new employment for the employed and unemployed tends to be somewhat underutilized with seventy five per cent of the employment placement occurring in the free market outside the public employment system. Thirlwall believes a more diffused information system on job vacancies throughout the country and a greater efficiency in the placement service in regions where the labour imbalances are most serious are both measures urgently needed to be undertaken by the Employment Exchange Service.[62]

> The training and retraining of unemployed labour is -
>
> "the most effective means of remedying unemployment and labour market bottlenecks simultaneously."[63]

The Government Training Centres (GTC), according to Thirlwall, provide training almost exclusively in skilled trades and more than fifty per cent of the people attending its courses are already employed prior to entering the centres. Several suggestions for a more efficient use of the GTC include: a greater adaptability of the training centres' programmes, as well as their expansion; a greater collaboration between the employment services and the training centres; and, changes in the financial arrangements

---

61 Thirlwall, A. P.: op. cit., p. 174

62 Ibid, p. 177

63 Ibid, p. 178.

in regard to the trainee in order to make training more attractive to the unemployed. [64]

B. Survey of several aspects of the unemployment problem in Great Britain.

The literature on general unemployment problems, policies and remedies includes not only assessments directly involved with the results of the application of governmental policies, as reviewed above, but covers a wide range of theoretical studies of the unemployment problem in Great Britain.

1 Types of unemployment in the regions of Great Britain

The classification of the various types of unemployment, for example, is a rather complex methodological task in so far as it has to satisfy the possibility of measurement as well as requiring clear definition in order to avoid inconsistencies in the process of measurement.

The most common approaches used in classifying unemployment tend to be those distinguishing between the "ex-ante" basis for measuring types of unemployment (which involves measurement before solutions have been applied to reduce unemployment) and the "ex-post" basis (involving measurement of the types of unemployment depending on the results of the application of various policies). [65]

Both the "ex-ante" and the "ex-post" approach distinguish between three different types of unemployment. Difficulties in measuring unemployment, however, do tend to arise because of the different definitions given to demand-deficient, structural and frictional unemployment. Considering

---

64 Thirlwall, A. P.: op. cit., p.178

65 Thirlwall, A. P.: "Types of Unemployment with Special Reference to 'Non-Demand Deficient' Unemployment in Great Britain" Scottish Journal of Political Economy, February, 1969, Vol. XVI. No. 1, pp. 22 - 24.

the "ex-ante" basis for classification, demand-deficient unemployment is defined as the amount of unemployment in excess of the demand for labour. This situation may occur, for example, when the total expenditures of an economy are not enough to create jobs for all of those willing to be employed.

Frictional unemployment, on the other hand, occurs when the unemployed who have the right skills to meet the labour demand are in the process of moving to new jobs. This type of unemployment is usually associated with frictions in the labour market such as barriers to mobility and lack of information. Structural unemployment may exist in specific social groups or geographic areas and tends to be a consequence of the demand for labour not matching the unemployed labour available in skill or location. [66]

Two of the most important limitations of this "ex-ante" approach to unemployment classification are the need for an index of demand for labour and an awareness of the different types of labour in demand and supply. Without knowledge of these two basic requirements, it becomes extremely difficult to establish the percentages of people unemployed due to a demand deficiency, due to technological changes or due to long or short-term changes in the demands for goods and services. [67]

The "ex-post" basis approach for classifying unemployment has been heavily criticized and Thirlwall believes this approach has even failed to meet the requirements of the second condition needed to become a useful classification. [68]

The definition of demand-deficient unemployment, according to this approach, implies the introduction of a certain price inflation rate. The

---

66 Thirlwall, A. P.: op. cit.,pp. 22 - 23

67 Ibid: p. 24

68 Thirlwall, A.P.: op. cit., p. 24

reason for this lies in the assumption that if the demand for labour were strong enough, all the unemployment could only be eliminated at the cost of an increase in wages and prices. Thus, demand-deficient unemployment would be considered as the difference between the actual rate of unemployment minus the amount associated with a tolerable rate of price increase.

Structural unemployment tends to be considered as the residual left after the amount of demand-deficient unemployment has been estimated. Structural unemployment on an "ex-post" basis would, therefore, include frictional unemployment which would have to be measured in other ways.

Several definitions have been given to structural unemployment on an "ex-post" basis. It has been defined as all the unemployment that cannot be eliminated when increasing demand without altering the price constraint. Bergmann and Kaun defined structural unemployment as -

> "that amount of unemployment less minimum frictional and seasonal which cannot be removed by monetary and fiscal policy without creating substantial continuing inflation." 69

A third definition envisages structural unemployment as the quantity of unemployment that can be eliminated through labour market policies, thus enabling the economy to operate at a higher rate of employment without altering the price constraint. 70

Lipsey defines structural unemployment as that amount of unemployment that can be eliminated by structural solutions -

---

69 Bergmann, B. R. and Kaun, D. E.: Structural Unemployment in the United States. Brookings Institute for the U.S.Dept. of Commerce, Washington, 1966, p. 1.

70 Thirlwall, A. P.: op. cit., p. 25

"some of which pay for themselves on an analysis of the money costs and money benefits and some of which are justified because the non-pecuniary social benefits are judged to justify the net money cost of the schemes." [71]

Both the "ex-ante" basis and the "ex-post" basis for classification have, as stated before, severe deficiencies specifically arising from the lack of precise conceptual definitions. Thirlwall suggests, therefore, that -

"the problem is not to classify unemployment but to define the types of unemployment in an operationally meaningful way." [72]

He, furthermore, suggests the use of vacancy statistics as a more precise and objective criteria for the classification of unemployment. In order to separate demand-deficient unemployment from other types of unemployment (which the author denominates globally as "non demand-deficient" unemployment), the point of balance between the available supply of labour and the unsatisfied demand for labour is established as the dividing line between the two categories of unemployment.

"the amount of unemployment in excess of the point of balance could justifiably be called demand-deficient unemployment and the unemployment at the point of balance could be legitimately referred to as "non demand-deficient" unemployment." [73]

A major difficulty could arise using this concept and that would involve estimating the level of unemployment at which labour supply would equal unsatisfied demand. And it is at this point that Thirlwall introduces the use of vacancy statistics as a measure of unsatisfied demand for labour having equalised the amount of unemployment to the supply of labour available

---

71 Lipsey, R. "Structural and Deficient-Demand Unemployment Reconsidered" in Ross, A. M. (ed): Employment Policy and the Labour Market. University of California Press, 1965, pp. 210 - 255.

72 Thirlwall, A. P.: op. cit., p. 24.

73 Thirlwall, A. P.: op. cit., p. 27

for employment. According to these assumptions, therefore,"non-demand deficient" unemployment is considered the amount of unemployment existing when the number of unemployed is equal to the number of vacancies and demand-deficient unemployment is said to occur when the number of unemployed is greater than the number of vacancies. [74]

This classification also tends to have its own deficiencies. These involve the doubt whether it is appropriate to equalise unemployment to the supply of labour available and unfilled vacancy figures to unsatisfied demand for labour. Several studies, however, have indicated that the margin of error when equalising unemployment and vacancies is so small that unfilled vacancies figures do tend to be in fact a reliable indicator of the strength and magnitude of the demand for labour. [75]

It is relevant to mention here that the unfilled vacancy data have also been used to distinguish between frictional and structural unemployment (both in the "non-demand deficient" unemployment category) as long as the level of unemployment and the skill composition of vacancies are known.

For this purpose, total vacancies (V_T)can be divided into vacancies of the right type to absorb the unemployed (V_R) and vacancies of the wrong type (V_W). If all the vacancies would then fit the characteristics of the unemployed, all the "non demand deficient" unemployment would be considered frictional. On the contrary, if the characteristics of the unemployed would not be equal to the characteristics of the vacancies available, all the "non demand deficient" unemployment would be said to be structural. In this way, Thirlwall built a complete framework of unemployment.

---

74 Thirlwall, A. P.: op. cit., pp. 27 - 28

75 Ibid, , p. 28.

$$U_T = U_F + U_S + U_{DD}$$

$$U_F = V_T - V_W = V_R$$

$$U_S = V_T - V_R = V_W$$

therefore $$U_{DD} = U_T - V_T = 0$$ [76]

Thirlwall has also applied this classification of unemployment to the regions in Great Britain, measuring the magnitude of each type of unemployment nationally and regionally, as well as undertaking a study testing whether structural unemployment in the nation as a whole is mainly due to geographic immobility or to immobility between occupations. [77]

After measuring the unemployment levels and vacancy rates per occupation in each region by building unemployment/vacancy matrices for each year since 1963 to 1972 and after classifying the types of unemployment based on the characteristics of vacancies (both when the aggregate unemployment is greater than the total vacancies as well as when the aggregate vacancies exceed aggregate unemployment), Thirlwall demonstrates the dependence of structural unemployment on the pressure of demand. [78]

a. Causes of structural unemployment

The dependence of total "non demand deficient" unemployment (thus including frictional and structural unemployment) on the pressure of demand for labour arises from the fact that unless the demand for labour consists entirely of the people with the skills (and in the locations) represented by the unemployed, unfilled vacancies are bound to rise at the same time

---

76 Thirlwall, A. P.: op. cit., p. 29

77 Thirlwall, A. P.: "Types of Unemployment in the Regions of Great Britain" Manchester School, December, 1974, No. 4, pp. 325 - 338.

78 Thirlwall, A. P.: op. cit., p. 29

unemployment is falling. As long as U > V, a rise in V is equal to an increase in "non demand deficient" unemployment.

This dependence is a characteristic of any measure of structural unemployment considered when an excess demand for labour is occurring in specific sectors of the economy with unemployment existing somewhere else in the economy. A depressed economy, for example, tends to offer fewer jobs for the unemployed to occupy even if they had the right skills. When the aggregate demand is expanding, however, skill shortages do tend to increase and excess labour demand in some occupations and excess supply in others tend to occur simultaneously.

This situation reflects structural unemployment due to occupational mobility, where -

> "the tighter the labour market, the more structural unemployment will tend to manifest itself." [79]

But not all structural unemployment is caused solely by the unemployed's skills not matching the skills available. The geographic immobility of structural unemployment has to be considered also; i.e., the travelling distance involved between the location of the unemployed and the location of the unsatisfied demand. [80]

By measuring the geographic dimension of structural unemployment as well as the occupational immobility of structural unemployment in the regions of Great Britain, the extent of geographic immobility has been determined to be less acute than the extent of occupational immobility. The numbers of unemployed wishing to move from a region with excess supply of labour to another area with excess demand are much lower than the number of unemployed not having the proper skills to be absorbed by the jobs available.

---

79 Thirlwall, A. P.: op. cit., p. 330

80 Ibid.; p. 330

The implications resulting from this analysis once more stresses that -

> "given the predominant cause of structural unemployment, it makes sense for manpower policy to devote the major part of its resources to schemes for occupational training and retraining as opposed to schemes for encouraging labour mobility from one region to another, especially when labour mobility usually means migration to the southern half of the country where the social costs imposed on the community by migration are probably the highest in the country." [81]

The analysis of types of unemployment in each region of Great Britain tends to show that the major reason for inter-regional differences in the percentage level of unemployment is again the differences in the pressure of labour demand. Attempts to narrow these inter-regional unemployment rate discrepancies should, therefore, be directed towards the expansion of demand in the depressed regions, while isolating the rest of the economy from the effects of these policies. Thirlwall, furthermore, suggests that the aimed expansion of demand in the depressed regions could be achieved if the concession of incentives to industries were to be granted according to certain structural characteristics of the industries (like, for example, the nature of their products). [82]

2 Interregional variations in regional sensitivity to unemployment

As already mentioned in another section of this chapter[83] regional cyclical sensitivity to unemployment is measured by regressing each region's unemployment rate onto the national unemployment rate. These regression coefficients will then indicate each region's sensitivity to unemployment.

What remains to be mentioned on this subject, however, is the

---

81 Thirlwall, A. P.: op. cit., p. 335

82 Ibid, p. 338

83 See pp. 53 to 56

possibility of a more systematic and conceptual grouping of the causes of inter-regional differences in regional sensitivity to unemployment as well as the possibility of measuring the contributions of these factors to each region's sensitivity to unemployment.

Two groups of factors can be distinguished as causes for inter-regional sensitivity to unemployment differences: inter-industry factors relating to the fact that fluctuations in the rate of unemployment are not the same in all industries and thus regional differences in industrial structure will tend to produce inter-regional variations in the cyclical sensitivity to unemployment; and, intra-industry factors, relating to the possibility that fluctuations in the rate of unemployment in a given industry may vary in different regions. [84]

Harris and Thirlwall measured the contributions of each of these factors based on the use of "standardisation procedures", by analysing first the absolute differences between the region's rate of unemployment and the national rates, for any point in time. It is important to mention here, however, that the standardisation procedures used to measure the contributions of particular factors to a total variation are subject to weighting problems. For this reason, the calculating method must define the difference between the observed value of a particular item and the mean of all observed values of that item. The weighting term must also be decided beforehand. [85]

If Y is the rate of unemployment in a region, its value will be given by the equation $Y = \sum_{j=1}^{n} P_j r_j$ and where P_j is the proportion of a region's work force in industry j and r_j is the regional rate of unemployment in industry j. If X is the national rate of unemployment, its value

---

84 Harris, C. P. and Thirlwall, A. P.:"Interregional variations in Cyclical Sensitivity to Unemployment in the U.K. 1949 - 1964 in Richardson,H: Regional Economics-a Reader.London, McMillan & Co. Ltd., 1970, p. 151.

85 Harris, C. P. and Thirlwall, A.P.: op. cit., p. 152.

will be determined by $X = \sum_j P_j^1 r_j^1$ where the ^{1} indicate the corresponding national values. The contributions that a given industry may make to a region's rate of unemployment and to the national rate may differ as P_j can be different from P_j^1 and / or r_j can be different from r_j^1.[86]

Harris and Thirlwall measure the effect of the two inequalities on differences between a region's rate of unemployment and the national rate by standardising for "proportions" and for "rates" separately.

Standardisation for "proportions" involves substituting the national proportions of work force in each industry (the p_j^1 series) for the actual regional values (the P_j series) in order to obtain a hypothetical rate of unemployment for the region, based on the assumption that it has the same industrial structure as the nation. Y^* is defined as the rate of unemployment resulting from the above substitution and its value is given by the equation $Y^* = \sum_j p_j^1 \cdot r_j$ where Y^* is called composition-constant rate of unemployment.

Standardisation for "rates", on the other hand, involves substituting the national unemployment rates in each individual industry (the r^1_j series) for the actual regional values (r_j series) in order to obtain a second hypothetical rate of unemployment for the region based on the assumption that the rate of unemployment in each individual industry located in the regions is the same as the national rate. Y^{**} is the second standardised rate of unemployment for a region and its value is $Y^{**} = \sum_j P_j r^1_j$ and where Y^{**} is called the region's rate-constant rate of unemployment.[87]

Several formulae determine the various ways in which the differences between regional rates of unemployment (Y) and the national rate (X) can

---

86 Harris, C. P. and Thirlwall, A. P.: op. cit., pp. 152 - 153.

87 Ibid. pp. 153 - 154.

be analyzed on basis of the inter-industry factors (composition differences) and the intra-industry factors (rate differences).

(a) $y - x = \sum_j r_j (P_j - P^1_j) + \sum_j P^1_j (r_j - r^1_j)$

(b) $y - x = \sum_j r^1_j (P_j - P^1_j) + \sum_j P_j (r_j - r^1_j)$

(c) $y - x = \sum_j r_j(P_j - P^1_j) + \sum_j P_j(rj - r^1_j) + \sum_j (P_j - P^1_j)(r^1_j - r_j)$

(d) $y-x = \sum_j r^1_j(P_j - P^1_j) + \sum_j P^1_j(r_j - r^1_j) + \sum (P^1_j - P_j)(r^1_j - r_j)$

(e) $y - x = \sum_j 1/2(r_j - r^1_j)(P_j - P^1_j) + \sum_j 1/2(P_j + P^1_j)(r_j - r^1_j)$

It is relevant to mention that equations (a) and (b) have inconsistent weights; the weight for the first difference term in equation (a) for example, is a regional value and the weight for the second term is a national value (P^1_j). Equations (c), (d) and (e) have consistent weights and the contribution each factor makes to the total variation will vary according to the form taken by the difference terms of the equations.

Applying the standardisation procedures to empirical data of the administrative regions of the United Kingdom, Harris and Thirlwall analyse the interregional variations in cyclical sensitivity to unemployment according to inter-industry (composition differences) and intra industry (rate differences) factors. They do so by, first, calculating each region's cyclical sensitivity using the yearly values of Y, Y^*, Y^{**}. The actual sensitivity to unemployment of a regions (byx) is obtained by regressing the first differences of its rate of unemployment for May of each year (y) onto the first differences of the corresponding rate for the U.K. (x). If the regression coefficient (byx) for a region is larger than 1, the region will be considered cyclically sensitive to unemployment. If (byx) is smaller than 1 for a certain region, this region is considered cyclically insensitive to unemployment. The "sensitive" regions, therefore, are those whose annual rates of unemployment tend to be higher than the

/national average:

national average; the "insensitive" regions are those with annual rates of unemployment below the national average. [88]

(Byx) - the actual sensitivity of the region-can then be compared with the sensitivity of the region, had the region the same industrial structure as the nation; this result Harris and Thirlwall define as the composition-constant sensitivity ($b^{*}yx$). The actual sensitivity (byx) can also be compared with the sensitivity of the region, had the region experienced the same rate of unemployment in each of its industries as the nation and this result is defined as the rate-constant sensitivity ($b^{**}yx$). [89]

These results, byx, $b^{*}yx$ and $b^{**}yx$, used to measure the independent contribution of inter and intra-industry factors to a region's cyclical sensitivity to unemployment, involve the same weighting problems found in the analysis of absolute differences between regional and national unemployment rates. The same formulae, used to determine the various ways in which the differences between regional and national unemployment rates can be analyzed, [90] are applied, although now relating to the sensitivity index. In each of the several forms of the formulae, the first term will determine the contribution of inter-industry factors (composition differences) to a region's sensitivity and the second term will determine the contribution of the intra-industry factors (rate differences) to a region's sensitivity.

(a) $b - 1 = (b - b^{*}) + (b^{*} - 1)$

---

88 Harris, C. P. and Thirlwall, A. P.: op. cit., pp. 151 - 152

89 Ibid, [illegible], p. 154

90 See p. 69-71

(b) $b - 1 = (b^{**} - 1) + (b - b^{**})$

(c) $b - 1 = (b - b^{*}) + (b - b^{**}) + \left[(b^{**} - 1) + (b^{*} - b)\right]$

(d) $b - 1 = (b^{**} - 1) + (b^{*} - 1) + \left[(1 - b^{**}) + (b - b^{*})\right]$

(e) $b - 1 = 1/2 \left[(b - b^{*}) + (b^{**} - 1)\right] + 1/2 \left[(b - b^{**}) + (b^{*} - 1)\right]$ [91]

The results of Harris' and Thirlwall's analysis tended to demonstrate that interregional variations in cyclical sensitivity to unemployment over the period 1949 to 1964 were due mainly to interregional differences in the cyclical sensitivity of individual industries to unemployment (intra-industry factors) rather than to regional differences in industrial structure.[92]

3 Relationship between regional growth and the industrial composition of employment.

a. Measurement of changes in industrial composition of employment.

Shift and share analysis has been the technique frequently used to analyse the relationship between regional growth differentials and the industrial composition of employment. Due to the number of limitations involved, Stilwell has suggested a modification of the technique and applied it to the standard regions of the United Kingdom demonstrating -

> "that regional policies in the sixties seems to have had at least some effect in securing a more favourable industrial mix in the less prosperous region." [93]

---

91 Harris, C. P. and Thirlwall, : op. cit., pp. 154 - 155

92 Ibid, , pp. 157 - 161

93 Stilwell, F.J.B.: "Regional Growth and Structural Adaptation" Urban Studies, 1969, Vol. 6, No. 2, p. 162.

In order to analyse why employment grows faster in some regions than in others and more rapidly in some industries than in others, shift and share analysis divides the growth of the regional variable-employment - into three categories. The regional share (or national growth) component "R" is defined as the amount of change occurring in total regional employment had it grown at the same rate as national employment. The proportionality shift (or industrial mix) component "P" is considered as the extra change of regional employment growth due to a regional specialisation in nationally fast growing or slow growing industries. This component will be positive if the region specialises in fast growing industries and negative if the region specialises in declining industries. The third component, the differential shift (or regional) component "D" is the extra change of employment growth in the region resulting from employment in each industry in the region growing at a faster or slower rate than the national growth rate. This shift can also be positive or negative depending whether employment in the region grew faster or slower than its industrial mix. [94]

The sum of the proportionality and differential shifts (P + D) will determine the net gain or loss (or shift) to the region over and and above the regional share.

Based on these three components, Stilwell built an algebraic model for regional growth of total employment. He considered,

E_{ij} as the number employed in the i industry in region j;

$\Sigma_i E_{ij}$ as the number employed in all industries in region j;

$\Sigma_j E_{ij}$ as the number employed in the i th industry in all regions, and

$\Sigma_i \Sigma_j E_{ij}$ as the number employed in all industries in all regions.

---

94 Stilwell, F. J. B.: op. cit., p. 163

In the equations that follow, however, we have reproduced Stilwell's notations, i.e., omitting the i and j subscripts which should be attached to each E. The subscripts are only shown beneath the Σ signs to indicate the range of summation.

In this way, the total growth in region j would be determined by

$$j = \Sigma_i E_T - \Sigma_i E_o$$

(where, E_T = terminal year of period studied and

E_o = base year of period studied) and

$$j = R + P + D.$$

The regional share (R) is equal to:

$$R = \Sigma_i E_o \left(\Sigma_i \Sigma_j E_T / \Sigma_i \Sigma_j E_o \right) - \Sigma_i E_o \ ;$$

in other words, - the regional share R is equal to:

regional employment at the start of period o x $\frac{\text{National employment (time t)}}{\text{National employment (time o)}}$ - Regional Employment at start of period

The total shift (P + D) is equal to:

$$P + D = \Sigma_i E_T - \Sigma_i E_o \left(\Sigma_i \Sigma_j E_T / \Sigma_i \Sigma_j E_o \right) \ ;$$

the total shift (P + D), therefore, equals:

Total employment in region at end of period t - Regional employment at start of period o x $\frac{\text{National employment (t)}}{\text{National employment (o)}}$

The proportionality shift (P) is equal to:

$$P = \Sigma_i E_o \left[\left(\Sigma_j E_T / \Sigma_j E_o \right) - \left(\Sigma_i \Sigma_j E_T - \Sigma_i \Sigma_j E_o \right) \right] \ ;$$

which can be expressed as:

Regional employment at start of period o x $\frac{\text{Total employment in region j time t}}{\text{Total employment in region j time o}}$ - $\frac{\text{National employment time t}}{\text{National employment time o}}$

The differential shift (D) is equal to:

$$D = \sum_i \left[E_T - E_o \left(\sum_j E_T \,/\, \sum_j E_o \right) \right] \quad ;$$ [95]

which represents:

Employment in industry i at end of period t in region j − employment in industry i at start of period o in region j −

$$\frac{\text{total employment all regions in i at t}}{\text{total employment all regions in i at o}}$$

summed for all industries

The use of the shift and share method is considered to be somewhat limited to an initial analysis of the behaviour of employment in regional growth. It is considered useful in determining results of factors operating uniformly nationally and in determining results of factors operating specifically in a particular region, but "in order to arrive at more fundamental explanations of the differential growth patterns, a deeper look is needed at factors relevant to both the composition (proportionality) and local-factor (differential) effects. The composition effect raises this key question: why do some employment sectors of the national economy expand more than others? The local-factor effect raises another key question: why does the same employment sector expand more rapidly in some regions than in others?" [96]

In order to answer these and other questions, Stilwell points out that knowledge of other elements, other than the ones provided by shift and share analysis, are needed. To understand the national growth rates of different industries, for example, an analysis of the changing pattern

---

95 Stilwell, F. J. B.: op. cit., pp. 163 - 164

96 Perloff, H. S. (1963) "How a Region Grows". Supplementary Paper No. 17, N. York, Committee for Economic Development in

Stilwell, F. J. B.: op. cit., p. 164.

of demand and supply for the individual industries is needed, as well as some knowledge on income elasticity of demand, changing tastes and technological progress. The study of the magnitude and direction of the proportionality shift also involves the need of other tools such as location analysis and regional productivity differentials. [97]

In order to overcome all these limitations, Stilwell introduces the use of variance analysis to the shift and share technique, with the purpose of identifying in a much easier way the general direction and effect of structural change.

This modification will permit shift and share analysis to take account of the impact on total regional employment of changes in the industrial composition of employment during the period studied. This may be obtained by subtracting the employment growth expected in a region - given its industrial structure at the start of the period - from the employment growth expected, given the industrial mix at the end of the period. Using final weights rather than initial weights, Stilwell thus measures the effects of reversing the standardisation procedures. [98]

The reversed proportionality shift (RP) is defined as -

$$\Sigma_i E_T \left[\left(\Sigma_i \Sigma_j E_o / \Sigma_i \Sigma_j E_T \right) - \Sigma_j E_o - \Sigma_j E_T \right]$$

and it will measure the net shift of employment in or out of a region that might be expected, given the national growth rates of each industry in the period studied and the industrial structure of employment in a region at the end of the period. [99]

---

97 Stilwell, F. J. B.: op. cit., p. 165

98 Ibid. , p. 168

99 Ibid. , p. 168

The difference between the reversed proportionality shift (RP) and the simple proportionality shift (P) will determine the net shift occurring from there having been a difference between the initial and final industrial structure of employment in a region. This shift, indicating the occurrence of a modification in a region's industrial mix during the period studied, is defined by Stilwell as the proportionality modification shift (PM). If the result of the proportionality modification shift equation is positive, it will indicate that the region has modified its industrial structure, specialising more in industries in which employment is growing faster than the national rate and specialising less in industries whose employment rate is growing slower than the national rate. If the shift result is negative, the opposite will be occurring. [100]

A final element introduced by Stilwell is the residual differential shift (RD) calculated by removing the proportionality modification shift (PM) from the simple differential shift (D). This element reflects the total shifts minus the sum of the proportionality and proportionality modification shifts and is considered important in further analysis of positive and negative shifts at industry level. [101]

Stilwell concludes that these refinements introduced to the traditional shift and share technique have yet some further advantages. The PM shift, for example, indicates whether or not the region has improved its industrial mix relative to the nation as a whole. In a broader sense, -

> "the magnitude of each shift in each region can be shown as a proportion of the total gross positive or negative shifts

---

100 Stilwell, F. J. B. : op. cit., pp. 168 - 169

101 Ibid, , p. 169.

between all regions." [102]

The isolation of the proportionality modification shift, furthermore, is considered to facilitate a more precise and elaborate classification of regional types. Boudeville had classified regional types in a sixfold basis using the traditional shift and share technique. Stilwell managed to develop a range of fourteen possible regional types. He suggests that his classification helps identify areas not yet suffering from declining employment shares but having potential tendencies of becoming employment problem areas and he, therefore, defends his classification as being of much more use to the formulation of regional policy. [103]

Based on the Governmental regional policy - the need to develop a more favourable industrial structure in the less prosperous regions - Stilwell applied his refined shift and share analysis to test the success of regional policy in Great Britain. He identified and measured the proportionality modification shift (PM) in different regions considering this element as the direct measure of the improvement of industrial mix in the regions. He, furthermore, examined the regional share component (R) and the differentiation between proportionality shifts (P) and differential shifts (D) to determine whether the rapid growth of employment in some regions was due to a more favourable industrial composition or to some other differential advantages. [104]

Due to some data restriction (Stilwell's data referred to Standard Regions and not to Development Areas) the author believed his test to

---

102 Stilwell F. J. B.: op. cit., p. 169

103 Ibid, p. 170

104 Ibid, pp. 171 - 173.

be more of an examination of trends in the industrial growth of regions than a proper test to ascertain the efficiency of Development Area policy. Nevertheless, he arrived at several conclusions. Regional differences in initial industrial structure, for example, were considered to be an important cause of regional differences in employment growth. The more prosperous regions had a more favourable initial industrial composition than the less prosperous regions and, as a result, this could have influenced the more rapid growth of employment in the more prosperous regions.

Furthermore, Stilwell's PM -

> "reflects the effect on a region's employment growth of adjustment in its industrial composition." [105]

To a certain extent, Stilwell considered that his analysis of the PM shift could be interpreted as a measure of some degree of success in regional policy in the United Kingdom. The success (or failure) of regional policy would be determined by -

> "the extent to which the regions which had the most unfavourable initial industrial mix have improved the favourability of that mix." [106]

It is important to note here, however, that Chalmers studied Stilwell's proportionality modification shift (PM), concluding that it is not a satisfactory measure of the extent of a region's industrial structure improvement. He exemplified his criticism by demonstrating that a region which had positive differential shifts (D) in a group of fast-growing industries -

---

105 Stilwell, F. J. B.: op. cit., p.175

106 Ibid., p. 175.

"could be recorded by the PM shift to be suffereng a relative deterioration in its industrial mix." [107]

Chalmers suggested that Stilwell's error was to interpret the difference between the index calculated with initial period weights and the index calculated with final period weights as the difference between the beginning of period and end of period industrial mix. In other words, the shifts calculated with different bases were in fact measuring what was happening over an interval and not measuring what was happening at different points within an interval. [108]

4 The behaviour of unemployment and vacancy rates in Great Britain

The use of vacancy rates statistics as a measure for unsatisfied demand for labour has already been referred to earlier in this Chapter. [109]

We must, however, return briefly to this concept in order to understand Thirlwall's forecasting model of regional unemployment rate differences, as well as the use of the model to examine the regional pattern of demand measured by vacancy rates.

According to Thirlwall, the ineffectiveness of Governmental policy in narrowing the gap between regional unemployment rates is due to the fact -

"that regional economies are such, that when policy generates demand and activity in depressed regions as much activity (if not more) is generated in the prosperous regions because depressed

---

107 Chalmers, J. A.: "Measuring Changes in Regional Industrial Structure: a comment on Stilwell and Ashby" Urban Studies, 1971, Vol. 8, No. 3 and 4, p. 292

108 Chalmers, J. A.: op. cit., pp. 290 - 291

109 See pp. 64-66

regions buy their inputs from prosperous regions in large quantities." [110]

He advocates the need to know the interregional input-output relations, without which it is not possible to determine the extent of interregional linkages as well as determine the allocation of new demand so as to generate a more equal distribution of demand among the regions. In order to achieve this, Thirlwall suggests an analysis of the labour market relating regional unemployment to regional indices of labour demand in a general equilibrium framework and the setting up of a simultaneous equation system linking regions (unemployment in one region related to demand in all other regions). In doing so, he suggests the use of a region's vacancy rate as the best indicator of regional demand for labour and as the best expression of the extent of unsatisfied demand for labour relative to the size of the labour force. [111]

Thirlwall's model, based on the Standard Regions of Great Britain, was thus built for forecasting and analysing the differential regional demand pressure required to equalize unemployment. To determine the interregional linkages (by simultaneously calculating unemployment in each region), it was necessary to assume that each region's unemployment rate was a function of the pressure of demand for labour within the region (measured by each region's vacancy rate) and a function of the state of demand for labour outside the region (measured by the national aggregate rate of unemployment). [112]

---

110 Thirlwall, A. P.: "Forecasting Regional Unemployment in Great Britain" Regional Science and Urban Economics, August 1975, p.357.

111 Ibid., p. 358.

112 Ibid., pp. 358 - 359.

The results of the model indicate that the pattern of labour demand required to equalize unemployment levels (measured by vacancy rates) is the reverse of the pattern that had prevailed in the past. In other words,the regions with the highest vacancy rates over a period require the least demand pressure to achieve the tolerable and established two per cent unemployment level and the regions with the lowest vacancy rates need the greatest demand pressure.

The different demand pressures needed to equalize unemployment rates are considered to reflect three main factors: the differences in the amount of unemployment in regions that exist independent from the pressures of demand; the differences in responsiveness of unemployment to demand within the regions; and, the differences that the repercussions of demand in one region have on others. [113]

It is important to mention, however, that according to studies already undertaken in this field, it has been established that the rate of unemployment independent of the pressure of demand does not vary significantly between regions and sensitivity of unemployment to demand is higher in high unemployment regions than in low unemployment regions. Therefore, the differential pattern of vacancies tends to be mainly caused by interregional labour demand variations. [114]

Thirlwall's results led him to conclude that equalisation of unemployment between regions (with the reduction of unemployment in the north without creating labour shortage in the south) can only be attained if labour demand is restrained in the south and expanded in the north. He stresses the importance of the issue of the difference involved in

---

113 Thirlwall, A. P.: op. cit., p. 373

114 Ibid., p. 374.

demand patterns between regions, once they are not taken in isolation but considered in the context of their interregional linkages. Therefore, -

> "to equalize unemployment, it would not only be necessary to raise demand in the north to the level of the south, but in excess of the level in the south because the north apparently makes much heavier demand on the south than the south does on the north." [115]

The variable - unemployment - on the supply side and the variable - unfilled vacancies - on the demand side of the labour market are expected, theoretically, to move in opposite directions. A rise in unemployment should tend to bring about a decrease in unfilled vacancies and the rise of unfilled vacancies is usually a reflection of decrease in unemployment.

a. The influence of legislation on unemployment and vacancy levels

Since 1966, however, the unemployment levels in Great Britain tended to rise in spite of the behaviour of vacancy rates. An attempt to explain this phenomenon was undertaken by Gujarati, who determined the changes in Social Security payments as responsible for the upward shift in the unemployment/vacancy relationship. [116]

The Redundancy Payments Act of 1965 introduced the requirement that employers should pay compensation payments ("redundancy payments") to workers who were dismissed because of redundancy. Likewise, the National Insurance Act of 1966 replaced the flat-rate system of short-term benefits and contributions by a mixed system of flat-rate and "earnings-related benefits and contributions" which tended to increase the unemployment benefits. [117]

115 Thirlwall, A. P.: op. cit., p.374

116 Gujarati, D.: "The Behaviour of Unemployment and Unfilled Vacancies: Great Britain 1958 - 1971" Economic Journal, 82, March 1973 pp. 195 - 199.

117 Ibid., p. 195

Although the main objective of this legislation was to aid the unemployed, Gujarati believes these acts unintentionally brought about an artificial increase of registered unemployment, because -

> "the unemployed person is now under less pressure to look for a job immediately and may spend more time looking for a job." [118]

Gujarati statistically compares the rates of unemployment and unfilled vacancies in order to determine the effect of the legislation on the increase of unemployment. He also predicts the expected rates of unemployment since 1966 given the values of vacancy rates and assuming the traditional inverse relationship between unemployment and vacancy rates. He furthermore, calculates a correcting factor to be used to transform current unemployment rates to the old basis. [119]

Despite all the statistical evidence, Gujarati's study has been criticized and questioned by Taylor, who sustained that the increase in unemployment levels after 1966 has been caused by a "shake-out" of hoarded labour. [120]

He questions Gujarati's conclusion that the upward shift in the unemployment and vacancy relationship was caused solely by changes in the behaviour of unemployed workers by maintaining that registered unemployment is not an appropriate indicator of the unemployment gap, which includes labour hoarding and hidden unemployment. [121]

---

118 Gujarati, D.: op. cit., p. 195

119 Ibid., p. 202

120 Taylor, J.: "The behaviour of Unemployment and Unfilled Vacancies - Great Britain 1958-1971: an alternative view" Economic Journal, 83, December 1972, p. 1352

121 Ibid., p. 1353

Taylor argues that the artificial increase in registered unemployment after 1966 was due to the shift of unused manhours from the labour hoarding part of the unemployment gap to the registered unemployment part of the gap. By investigating the changing structure of the unemployment gap since 1966, he finds yet another explanation for the upward shift in unemployment level; a deliberate "shake-out" of labour as a result of employers increasing output after 1966 by raising labour productivity, through an increase in overtime working, without taking on more labour. [122]

---

122 Taylor, J.: op cit. pp. 1354 - 1362

CHAPTER THREE

Regional Employment Policies and the Measuring of Specialisation or Diversification of Regional Employment Structures

During the nineteenth century, a high degree of regional specialisation developed in Great Britain as a consequence of the localisation of industries. However, as mentioned in the introductory chapter of this thesis, [123] several factors occurred at the beginning of the twentieth century that helped reduce the level of employment specialisation in most parts of the country. In this way, a differentiated employment pattern is considered to have been generally maintained up to World War I and much throughout the inter-war period.

It is important to remember that as early as the 1930's, diversification was already considered by some as an important means of reducing unemployment. At the time, however, the classical doctrines of economic thought - the idea of comparative advantage in the theory of international trade, the theory of location of industry and the theory of large scale production - all pointed out towards regional specialisation as the means to economic efficiency. [124]

It was after World War II that the structural adaptation of economic activity received special Government attention and ever since policies have tended to be implemented with the specific aim of diversifying the economies of the less prosperous areas.

---

123 See pages 1-6

124 Chisholm, M. and Œppen, J.: op. cit., pp. 17 - 18

The Government's concern with the diversification of industry was based upon the conclusions of the Barlow Report of 1940 which examined policies to be adopted by Government regarding the distribution of population. The conclusions were that the Government should intervene in order to affect spatial distribution of population and employment and that one aim of such intervention should be the encouragement of a reasonable balance of industrial development throughout the various divisions and regions of Great Britain, as well as a certain diversification of industry in each division or region throughout the country. [125]

Regional diversification was, therefore, seen to be a logical consequence of getting new kinds of employment into depressed areas and also a -

> "desirable goal in its own right, as a means of reducing risks of future unemployment heavily concentrated in a few unfortunate areas." [126]

Besides the original concepts of being a means of reducing unemployment and of limiting the risks of spatially concentrated declining industries, the regional diversification issue has also been considered more recently under two new different aspects.

Some researchers have suggested that the degree of diversification is positively related to the long-term rate of growth of regions. Hauser and Keeble studied the effect of specialized employment structures on the rates of growth for sub-regions in south east England. They used the following index of specialisation, calculated for each area:

$$I = \sqrt{P_1^2 + P_2^2 + \ldots + P_N^2}$$

where I is the index of specialisation, P is the percentage of employment

---

125 Barlow Report: op. cit., p. 206

126 Chisholm, M and Oeppen, J: op. cit., p. 19

in each industry class and N is the number of industries. [127] Their index was used on 22 industry classes and they concluded that the degree of specialisation measured in this way -

> "is particularly important in that it is the only independent variable to appear in exactly the same form in all main dependent variable results. [the percentage of unemployment in each industry class being the dependent variable]. This indicates that areas which have specialised or particular industries, even in the growth region of south east England, are especially vulnerable to absolute decline." [128]

Other authors have examined this problem and using the same multiple regression technique arrived at a different conclusion from Hauser and Keeble. Britton, for example, studied the Bristol area and concluded that faster growth appeared to be associated with greater specialisation in the sub-regional economies. [129]

The second different aspect of the importance of the study of specialisation and diversification refers to the question of cyclical stability or instability of employment. Thompson studied this aspect by assuming that the cyclical instability of a city's economy is related to its total population. He argues that large urban economies tend to have diversified industrial structures and, therefore, tend to reflect the national degree of cyclical instability. The smaller urban economies, on the other hand, have a much greater degree of cyclical instability due to their heavier specialisation, in both the more stable and the

---

127 Hauser, D. P. and Keeble, D. E.: "Manufacturing Growth in Outer south-east England" Regional Studies, 5, 1971, p. 27.

128 Ibid., p. 29

129 Britton, J. H.: Regional Analysis and Economic Geography, London, Bell, 1967.

more unstable industries. [130]

Although there is some empirical evidence collected in this field by Chisholm, Thompson himself never tested his hypothesis. Furthermore, the limited amount of work in Great Britain on the local economic instability as measured by the unemployment variations at the Employment Exchange Level also reduces the possibilities of testing the validity of Thompson's hypothesis. [131]

It has been possible, however, to examine the hypothesis that the smaller an area's total employment, the more specialised the employment structure tends to become and vice-versa. According to Chisholm and Oeppen, the changes in the degree of local specialisation may also be examined as arising from either one or both of the following processes:

(a) the individual industries may be becoming less highly localised which would imply that each area has a more even mix of employment; and / or

(b) if each industry remains highly localised or becomes more localised still, it is possible that local economies can nevertheless become more diversified. [132]

The changes in localisation of industries are believed to be related to three main variables:

(a) some industries have tended to be more affected by Governmental intervention than others, through such measures as the Industrial Development Certificate controls, investment incentives, the

---

130 Chisholm, M. and Oeppen, J.: op. cit., pp. 20 - 21

131 Ibid., p. 21

132 Ibid., p. 21

Regional Employment Premuim, etc.;

(b) some industries that have had rapid growth may have experienced major changes in their geographical distribution due to the fact that these growth industries are those which generate investment proposals that are affected by Governmental policies;

(c) some industries subject to contraction may also have experienced substantial changes in their geographical distribution, especially if their decline was concentrated on specific sub sectors that were themselves highly localised. [133]

Notwithstanding the fact that the Government has been adopting regional diversification policies since the post-war period, -

> "one of the most neglected areas of study in sociology and economics is the analysis of the development of industrial diversification." [134]

I Population Size and the Extent of Industrial Diversification

The hypothesis that there is a direct relationship between the size of a population and the extent of the diversification of its industrial structure has been a long and generally accepted proposition, in spite of having been subjected rarely to empirical test.

A Clemente and Sturgis

F. Clemente and R. B. Sturgis tested this hypothesis selecting 1899 urban areas in the United States, all of which had over 10,000 inhabitants. The - population size - measure was based on the American

---

133 Chisholm, M. and Oeppen, J.: op. cit., pp. 22-23

134 Clemente, F. and Sturgis, R. B.: "Population Size and Industrial Diversification"
Urban Studies, 1971, Vol. 8, No. 3, p. 65.

Census Bureau's report which defines population as the number of people who live and sleep in a specific community for most of the time.

Industrial diversification, on the other hand, was measured by Gibbs and Martin's method which determines that the more evenly the labour force is distributed throughout the industrial structure, the greater is the extent of industrial diversification. [135]

Gibbs and Martin's method of measuring industrial diversification consists in selecting two hypothetical communities: one, where industrial diversification is at a minimum and another where it is at a maximum. They devised the following formula to measure the deviations of communities from these extreme types:

$$1 - \frac{\Sigma x^2}{(\Sigma x)^2}$$

where x is the number of persons in each of the 12 industrial categories chosen. Where minimum industrial diversification exists (complete concentration of the community's labour force in one industry), the index yielded by the formula would be 0.0000. In the case of maximum diversity (even distribution of labour throughout all industrial categories) the index would be 0.9167. [136]

Therefore, the higher the result obtained, the greater is the extent of industrial diversification in the area under consideration.

It is relevant to mention, however, that Clemente and Sturgis have pointed out some limitations in Gibbs and Martin's formula to measure the index of industrial diversification. In the first place, the result

---

135 Clemente, F. and Sturgis, R. B.: op. cit., p. 65

136 Ibid., p. 66.

obtained will always tend to be a function of the number of industrial categories used. They exemplified their restrictions by demonstrating that if four industrial categories were to be used, the maximum diversity index would be 0.7500 and if ten categories were to be employed, the index would be 0.9000.

A second limitation regards the fact that for a community to reach maximum diversification, the workforce involved in minor industries (like, for example, private households) should be considered on the same grounds as the workforce of major industries (like construction). This restriction tends to imply that it is practically impossible for a community to attain maximum diversification. [137]

In spite of these limitations, Clemente and Sturgis tested the hypothesis of a direct relationship between the number of people who live in a community and the score on the measure of industrial diversification by using Pearson product-moment correlation and further employing Fischer's r to z transformation to test the significance of the correlation. [138]

The results obtained did prove the expected direct relationship for the United States and for all its regions by yielding a statistically significant positive correlation coefficient. The results,however, did tend to reflect the failure of the independent variable (population size) to explain more fully the variations in the dependent variable (extent of industrial diversification). The authors tended to believe that community size would be a stronger predictor of industrial diversification. Their test, however, proved that community size did not explain even as much as one-third of the variation in industrial diversification. [139]

---

137 Clemente, F. and Sturgis, R. B.: op. cit., p. 66

138 Ibid., p. 66

139 Ibid., p. 67.

They suggested three reasons that might elucidate the less than expected influence of community size on industrial diversification: In the first place, they believed that the degree of transportative efficiency in the United States had become so great that it had led to the formation of a division of labour among communities. They described this phenomenon as a "system of cities", where a growing functional interdependence among cities can result in the decrease of diversification within any particular community since they stated that the industrial structure of any city is determined by its place within the system;

Clemente and Sturgis' second explanation for the low correlation between population size and industrial diversification was based on a study by Lampard (1955) in urban economics. According to Lampard, functional heterogeneity is culturally linked to economic progress. For this reason, he believed the diversification of functions to be a consequence of the efforts of a population toward greater productivity;

And finally, Clemente and Sturgis' third reason for the low correlation between population size and industrial diversification was based on Durkheim's explanation of the development of the division of labour. Durkheim believed that the causes for advances in functional differentiation were partly explained by "material density" (population increase) and "social density" (frequency of interaction among the members of an aggregate system). For this reason, unless an increase in "material density" was accompanied by a corresponding increase in "social density", a population would tend to maintain the segmentalised structure which prevents heterogeneity.

Clemente and Sturgis' major conclusion, however, was the suggestion concerning the need for further investigation in the field of industrial diversification. [140]

---

140 Clemente, F. and Sturgis, R. B.: op. cit., pp. 67 - 68

B R. Crowley

R. Crowley investigated the internal specialisation index used by Clemente and Sturgis,modified it and applied his index to a study of the industrial structure of Canadian cities. Like Clemente and Sturgis, he concluded that larger cities do tend to be more diversified than smaller ones. Crowley, however, broadens the argument by trying to explain why the independent variable (community size) has been found to have a less important influence on the dependent variable (industrial diversification) than otherwise believed. [141]

Crowley questions Clemente and Sturgis' findings by discussing a number of points. Firstly, the author refers to Parr (1965) when he remarks that not all the numerous measures of diversification and/or specialisation rank cities in the same order.

Secondly, he believes that once the hypothesis given has been tested and proven to establish a direct relationship between city size and industrial diversification, further analysis will just tend to require a degree of precision of statistical tools and data base.

Furthermore, he believes Clemente and Sturgis have not sufficiently employed all statistical means for explaining why their calculated correlation coefficients were not greater. Advancing the hypothesis that the relationship between the variables may not have been linear, Crowley also suggests that Clemente and Sturgis' correlation coefficient may have been influenced by the large number of small cities involved in their investigation. In other words, -

---

141 Crowley, R. W.: "Reflections and Further Evidence on Population Sizes and Industrial Diversification." Urban Studies, 1973, Vol. 10, p. 91.

"there exists not only the possibility of 'nonsense' correlation but also the possibility of severe data limitations." [142]

Crowley's third point concerns Clemente and Sturgis' ommission of both cross-sectional and time series corroboration for the stability of the relationship which they measured.

Crowley's additional evidence on Canadian cities for 1951 and 1961 is initially fore-worded by the definitions of the terms "specialisation" and "diversification" which the author believes have been far too much misinterpreted.

"Specialisation refers to the extent to which the labour force is concentrated in a small number of industry groupings; diversification refers to the extent to which it is dispersed over the same groupings. They may, therefore, be considered opposite poles of a spectrum." [143]

Crowley recommends caution when comparing and calculating these indices, for specialisation and/or diversification can refer to the internal structure of a city or to a particular city's relationship to other cities. The formula used by Clemente and Sturgis

$$1 - \frac{\Sigma x^2}{(\Sigma x)^2}$$

is considered to be the measure of internal specialisation. Crowley uses another formula for internal specialisation developing some other formulas that relate cities to each other, with the purpose of examining to what extent different indices may result in the same conclusions.

Ranking all industries in each city from largest to smallest and considering:

---

142 Crowley, R. W.: op. cit., p. 91

143 Ibid., p. 92

x_{ij} = employment in industry i in city j;

n = number of industries; and

r = number of cities, Crowley obtains the following formulas:

$$S_1 = \frac{\sum_{i=1}^{n} x_{ij}}{\sum_{i=1}^{n} x_{ij}}$$ which is the measure analogous to concentration indices used in studying a particular industry;

S_2 = the reciprocal of the number of industries required to account for 80% of the labour force;

S_3 = the Gini index resulting from plotting the successive accumulation of x_{ij} from 1 to n;

$S_4 = \sum K_i^2$ for all values when $K_i > 1$

$$K_i \left(\frac{x_{ij}}{\sum_{i=1}^{n} x_{ij}} \right) \Big/ \left(\frac{\sum_{j=1}^{n} ij}{\sum_{i=1}^{n} \sum_{j=1}^{n} x_{ij}} \right)$$

$$S_5 = \sum_{i=1}^{n} m_i^2 \quad \text{for all values when } K_i > 1$$

$$m_i = \frac{x_{ij}}{\sum_{i=1}^{n} x_{ij}}$$

$$S_6 = \sum_{i=1}^{n} \left[\frac{(mi - Mi)^2}{Mi} \right] \Big/ \left[\frac{\sum_{i=1}^{n} mi - \sum_{i=1}^{n} Mi}{\sum_{i=1}^{n} Mi} \right]$$

144

$$M_i = \frac{\sum_{j=1}^{n} x_{ij}}{\sum_{i=1}^{n} \sum_{j=1}^{n} x_{ij}}$$

---

144 Crowley, R. W.: op. cit., p. 92

The indices S_1, S_2, S_s are Crowley's measure for internal specialisation; S_4 and S_6 measure one city relative to all others, and S_5 is a composite of S_4 and S_6. [145]

The results of his investigations tend to demonstrate that only the measures of internal specialisation are significantly correlated with population size. The measures of the extent to which industries were geographically concentrated show no relationship between population size and industrial diversification. Furthermore, Crowley believes that labour force as a measure of population size yields higher coefficeents than population in itself. Discussing his results, Crowley confirms Clemente and Sturgis' findings insofar as his test also proved that larger cities tend to be more diversified than smaller ones, but he rejects Clemente and Sturgis' explanations regarding the weakness between the variables of the relationship. He believes that this is caused by data limitations as well as statistical techniques constraints, since his evidence for Canadian cities shows that the relationship between population size and industrial diversification is not necessarily a stable relationship over time and may even be a decreasing one. [146]

C. C. Paraskevopoulos

C. Paraskevopoulos analysed Clemente and Sturgis' and Crowley's approaches to the strength of the relationship between population size and industrial diversification. He rejects Clemente and Sturgis' interpretation of their results as being correct andhe argues that any such analysis using cross section data will typically produce low values

---

145 Crowley, R. W.: op. cit., p. 92

146 Ibid., pp. 92 - 94.

of the coefficients of determination between the two variables. [147]

Furthermore, he suggests that such relationships could be better analysed in regards to growth stability. He quotes Thompson who argues that -

> "growth creates size and size reacts to restructure the local economy so as virtually to ensure further growth at a near average rate - reacts, that is, to produce growth stability. The simplest, most dramatic and thus most widely appreciated structural change accompanying large size is toward a diversified mix of current exports." [148]

The author uses shift and share analysis to identify the industrial mix component of employment change and argues that this industrial mix component will measure the industrial composition and inter-industry competition in a given region, exemplifying the favourable or unfavourable impact of current industrial structure on the general behaviour of the region. If the total industrial mix component of a region is a positive index, it will indicate that the region is characterised by rapidly growing industries and/or that the relative majority of the labour force employed in the region is concentrated in above-average growth industrial activities. The reverse is true for a negative industrial mix component. [149]

Therefore, a positive association between population size and

---

147 Paraskevopoulos, C.C.: "Population Size and the Extent of Industrial Diversification: an Alternative View" Urban Studies, 1975, Vol.12, p. 105

148 Thompson, W. R.: "Internal and External Factors in the Development of the Urban Economics" Issues in Urban Economics, ed. H.S.Perloff and L. Wingo,Jr. Baltimore: J. Hopkins Press, 1968 in Paraskevopoulos, C.C.: p. 106

149 Paraskevopoulos, C. C.: op. cit., p. 106

industrial mix would tend to indicate that the larger populated areas are usually highly diversified in industrial structure while the smaller areas are usually highly specialised. In order to test this above hypothesis, Paraskevopoulos used correlation analysis between the two variables and the significantly positive values of the correlation coefficients confirmed his hypothesis of a positive association between population size and industrial mix.

II Aspects of measuring employment specialisation/ diversification in Great Britain

Besides the investigations regarding population size and the extent of industrial diversification, the existing literature on regional specialisation and diversification in Great Britain tends to deal more specifically with changes over time rather than analyzing the spatial distribution of specialisation and diversification within a certain area at one point in time. [150]

A. R. C. Tress

In 1938, R. C. Tress presented a paper before the British Association for the Advancement of Science at Cambridge, with the purpose of examining diversification policy as a means of reducing unemployment as well as devising a statistic to measure the diversity of employment in an area. [151]

1 Diversification policy as a means of reducing unemployment

---

150 Chisholm, M. and Oepper, J.: op. cit., p. 24

151 Tress, R. C.: "Unemployment and the Diversification of Industry" Manchester School, 1938, Vol. 9, pp. 140 - 141

Considering the application of a rational diversification policy to particular local areas, Tress established two cases calling for a local diversity policy. The "primary case" (usually considered the one and only case for local diversity by traditional economic belief) concerns local industrial districts in depression. This is the well-known and firmly-established argument that an area with a large majority of its labour force concentrated in a single industry does run the risk, sooner or later, of incurring severe unemployment problems. An industry in depression, therefore, tends to affect an area more, the greater the number of people employed in that area who are dependent upon the specific industry. In other words, the rate of unemployment in a region is roughly dependent upon the prosperity of its main industries (the industries' size being measured by the number of their employees). [152]

But, according to Tress the problem of depressed industries does not fully explain the existence of distressed areas. He believes the problem of those that have been unemployed for lengthy periods is particularly serious in the distressed regions and, therefore, the secondary case for local diversity should be concerned with providing greater facilities for labour transference. In this case, he is aware that -

> "local diversity ceases to be the absence of over-great local specialisation and becomes something much more positive. A diversification policy on this basis would be required to consider much more than prohibiting industries in an area from being developed beyond a certain proportionate size or than encouraging the setting up of any kind of alternative industries in existing over-specialised areas. It would be much more limited in its choice of what would be successful planning and

---

152 Tress, R. C.: op. cit., pp. 141 - 142

would require a much greater knowledge both of the present relationships between industries as regards alternative employment, and of their future prospect." [153]

2 Measuring the diversity of employment in an area

Therefore, an index of local diversification was devised by Tress, following the idea that as long as the industrial activity of an economy could be divided into a number of distinct industries and given the number of people in an area, employed and unemployed, who are occupied in each of these industries, one may express the relative importance of each of the industries in the particular area - in terms of employment - as a percentage of the total industrial working population in that area. The percentages should then be -

> "ranged in descending order of magnitude and, side by side with them, may be written a series of progressive totals, the first of which is the percentage figure for the largest industry, the second is the percentage total for the two largest industries together, the third for the three largest industries together and so on. When the last industry in that area has been accounted for in this way, the progressive total is 100." [154]

The index designated by Tress as the CRUDE DIVERSITY INDEX for an area is, therefore, the aggregate of those progressive totals. The index will be at its lowest when diversity is at its maximum and will be at its highest when diversity is at its minimum. The REFINED DIVERSITY INDEX (ranging from o) for maximum diversity to 1 for minimum diversity) may be obtained from a formula using the crude diversity index. The refined index (R.D.I.) is equal to =

---

153 Tress, R. C.: op. cit., p. 142

154 Ibid., p. 145

Actual crude index - Crude Index for greatest diversity [155]

Crude index for least diversity - Crude Index for greatest diversity

The calculation of these indices do reflect the importance of the largest industries in an area both from the unemployment point of view, if the industries are depressed, and from a transference point of view, if they are expanding. The adding together of the progressive totals in order to obtain a diversity index does reflect the decreasing weights of the industries. If there are twelve industries, for instance, the largest will be weighted by twelve, the second by eleven and so on. In this way, the more rapidly the progressive totals approach 100, the less diversified the area will be. [156]

As Tress himself explained, assuming there were twelve possible industries and that the whole population of a certain area were concentrated in just one of these industries; then, the first progressive total, as well as each subsequent one would be 100 and the crude diversity index would be 1200. [157]

Tress, furthermore, illustrates his theory graphically in two different ways. In the first graphic representation, block diagrams represent each successive number of industries and the area covered by each rectangle equals the percentage of the working population in the given number of industries or, in other words, the progressive total. The crude diversity index is given by the sum of the areas of the rectangles and the refined diversity index is the difference between the actual area and the minimum area. [158]

---

155 For examples of calculation of the RDI, please see Chapter 4, p. 141-146

156 Tress, R. C.: op. cit., p. 145

157 Ibid., p. 145

158 See Appendix A: Figure A 1, p. 172

The second graphic representation follows the same principle except that the cumulative percentages of working population are shown by a series of points rather than by a number of adjacent rectangles. The measurement of the number of industries along the abscissa is changed from a number of equal and adjacent lengths to a number of equidistant points. Joining these points, Tress obtained a graph, similar to a Lorenz curve. [159]

It is interesting to note that as far back as 1938, Tress already advocated that a diversification policy should be a long-run policy directed towards preventing new distressed areas arising from local specialisation. His arguments, therefore, were based on the principle that the mere absence of specialisation did not reduce unemployment rates. He stressed the fact that absence of specialisation tended to be more important locally than nationally and that diversification for the country as a whole -

> "must depend for its advantages upon its greater facilities for labour transference." [160]

B. S. Florence

1 Location quotients and the location of an industry in a particular region

Professor A. Florence in 1944 introduced the concept of location quotients to be applied to the location of an individual industry in a particular region. He obtained the location quotient for any industry (I) in any region (J) by using the following formula:

---

159 See Appendix A: Figure A-2, p. 172

160 Tress, R. C.: op. cit., p. 151

$$LQ = \frac{\text{Number employed in industry I in region J as percentage of national total for that industry}}{\text{Number employed in all industries in region J as percentage of national total employment for all industries}}$$

If the results produce a ratio > 1.0, the location quotient will reflect the fact that an industry is more highly localised in the region than is employment generally. [161]

Hall in 1962 applied Florence's technique to industries in London and his results revealed location quotients of lower value in 1951 than in 1961. In relation to this, he wrote:

> "this is characteristic of a tendency, not only for greater London, but for all regions of the country to approach more closely in industrial structure to the national average." [162]

W. Smith in 1953 noted similar tendencies as the ones described by Hall in the Merseyside region and Lloyd studying the Northwestern conurbation in 1970, found little change in the employment structure of those areas between 1950 and 1958, although he did note a great acceleration occurring between 1960 and 1967 towards the national average. [163]

2. Coefficients of localisation

Besides determining location quotients, Professor Florence also devised a coefficient of localisation for individual industries. Given any one industry distributed among several regions, he was able to obtain the percentages of employment in each region. These percentages for the one industry were then compared with the variety of percentages

---

161 Chisholm, M. and Oeppen, J.: op. cit., pp. 24 - 25

162 Ibid., p. 25

163 Ibid., p. 25

for total employment. Whenever positive differences between the percentages for the industry and for all employment totals were obtained, they were summed and then divided by 100, yielding an index with the following properties: if the spatial distribution of industry is identical to that of all employment, the index will be 0.0. If, on the other hand, the industry is located entirely in one region, the coefficient of localisation devised by Florence will tend to approach 1.0. [164]

Florence calculated coefficients of localisation for 140 employment categories in 1930, 1935 and 1951. His overall conclusion was that there was a wider geographical dispersal of employment categories, therefore, confirming the findings of other authors. [165]

C. Leser

1. The coefficient of specialisation

In 1948 Leser took up Florence's ideas and developed his own measure to determine the extent to which a region has a specialised employment structure. He took the national distribution as the norm and expressed each employment category as a percentage of the total. He, furthermore, calculated the same percentages for the regions. The national and regional percentages were then compared in order to try and determine how much of a region's employment was common with the national. [166]

Lesser's coefficient of specialisation, thus, summed up the positive differences in order to obtain a measure of specialisation that ranged from 0 to 100. The 0 represented no specialisation with respect to the

164 Chisholm, M. and Oeppen, J.: op. cit., p. 25
165 Ibid., p. 26
166 Ibid., p. 26

national average and 100 represented full specialisation.

Leser's conclusion, using data for 1939 and 1947, was that there had indeed been a marked trend towards greater diversification in all regions, although this trend was most evident in those regions where specialisation had been most characteristic in 1939. [167]

D. Conkling

1. The index of diversification

Sixteen years after Leser's investigation, Conkling examined the question of diversification in South Wales and devised an index of diversification very similar to the one used by Tress. Conkling divided the entire labour force among 23 employment categories and ranked the industries by their percentage share in the total employment in ascending order from low to high. By cumulating the percentage values, Conkling was able to plot these values in a concave curve, lying below a diagonal straight line that represented the situation in which each industry was of equal importance. Furthermore, taking the area under the curve as a percentage of the area of the triangle bounded by the diagonal line, he obtained an index ranging from 0 to 100. In this case, the 0 represented concentration of employment in one industry and 100 reflected the uniform distribution of employment among all the categories. [168]

Conkling's results determined an increase in diversification between 1939 and 1949 both in Great Britain and in South Wales. Between 1949 and 1959, he believed the situation was more stable with a slow decline in diversification at the national level, but with an increase in

---

167 Chisholm, M. and Oeppen, J.: op. cit., p. 26

168 Ibid., p. 26 - 27.

diversification in South Wales. [169]

E. Britton and Hauser and Keeble

1. The study of the "I - index"

Britton examining a different area at a different period found a reverse tendency from Conkling's, that is, a greater specialisation trend between 1952 and 1962. He studied 14 sub-regions in the Bristol area and found only 3 sub-regions with greater diversification, while all the others were tending towards specialisation. He based his studies on an index called the "I-index", which later was also used by Hauser and Keeble. [170]

The "I-index" is given by the square root of the sum of the squared percentages shares of each industrial category:

$$I = \sqrt{(P_{il}^2 + P_{i2}^2 + \ldots + P_{in}^2)}$$

for i regions and n industries and where P_{in} is the percentage share. The upper limit of this range, i.e., complete concentration, is always 100; the lower limit or diversity if using the 152 Minimum List Headings (MLH) industrial grouping will be :

$$I = \sqrt{152 \times (100 / 152)^2}$$

which equals 8. [171]

F. A. J. Brown

1. Florence's coefficient of localisation

---

169 Chisholm M. and Oeppen, J: op. cit., pp. 26 - 27

170 See p. 88 , and footnote 127

171 Ferguson, A. G. and Foror, P. C.: "Aspects of Measuring Employment Specialisation in Great Britain" Area, 1973, No. 5, p. 122

In 1972, Brown used Florence's coefficients of localisation and specialisation and applied them to the Main Order industries in 9 regions of Great Britain. His investigation led him to believe that from 1953 to 1966 all the Standard Regions of Great Britain experienced a trend towards diversification of their employment structures. Like Leser, Brown also found that the greatest changes towards diversification occurred in those regions where specialisation in employment structures had always been greater. [172]

G. I. Horowitz

1. The entropy approach to employment concentration

Several other authors have studied and investigated the changes occurring in the employment structures of particular regions. D. M. Smith in 1969 and Cunningham in 1970 both analysed the northwestern region of England and concluded that diversification in that area occurred mainly during the post-war period and as a consequence of governmental regional policy. Steed and Thomas in 1971 examined the problem of employment structures in Northern Ireland and also acknowledged the Governmental efforts towards diversification as the main cause of the changes in that area. [173]

Horowitz measured employment concentration using the entropy formulation as an index for industrial structure. The formula used by Horowitz was :

$$H_i = - \sum_{j=1}^{n} (Y_{ij})(\log_2 Y_{ij})$$

---

172 Brown, A. J.: The Framework of Regional Economics in the United Kingdom Cambridge University Press, 1972, pp. 147 - 151.

173 Chisholm, M. and Oeppen, J: op. cit., pp. 27 - 29

where H_i is the entropy measure of the i th region, n is the number of existing categories and Y_{ij} is the share of the total employment in region i accounted for by category j. The base two for the log was established by Horowitz as an empirical convention, since the doubling of the numbers of employment groups having equal shares will add one unit to the entropy measure. [174]

The upper limit of this index is when $H = \text{Log}_2 N$. This will occur when all Y_{ij} are equal or, in other words, where perfect diversification is occurring. The lower limit, where all employment is concentrated in one group, is when $H = 0$, since all the $Y_{ij} = 0$ except one which will equal 1, taking the convention that $\text{Log}_2 (0) = 0$. [175]

According to Horowitz -

"entropy measures the degree of uncertainty associated with the market structure of an industry" and

"the greater the entropy, the greater is the uncertainty as to which of the firms in the industry will secure the custom of a buyer chosen at random." [176]

The author uses the concept of entropy as a measure of competitiveness, as against a measure of industrial concentration, in order to analyze the extent to which the degree of competition in an industry will be influenced by the size and number of competitors and thus determine the effects of these variables on entropy. His results do indeed tend to suggest that industrial concentration will be greater and -

"competition lessened when the average firm size increases" and -

"the degree of competition will tend to move further away from the

---

174 Ferguson, A. G. and Forer, P. C.: op. cit., p. 122

175 Ibid., p. 122

176 Horowitz,I.: "Employment Concentration in the Common Market: an Entropy Approach" Journal of the Royal Statistical Society, 133, 1970, p. 463.

I. Chisholm and Oeppen

1. Patterns of Specialisation and/or diversification of employment structures

Due to the absence of a complete national study of trends in specialisation and diversification, Chisholm and Oeppen have attempted a national study emphasizing patterns of specialisation and/or diversification in employment structures as well as also examining the changing localisation of individual industries. They analysed 61 economic planning sub-regions of Great Britain during the period 1959 to 1968 and used the 152 MLH industrial grouping for data on employment disaggregation. [183]

Chisholm and Oeppen believe that neither the Tress statistic nor Conkling's version of the Lorenz curve analysis nor Britton's index of specialisation determined the statistical significance of any change in the level of diversification in an area between two time periods. To consider a geographical area at two points in time as well as to consider two areas of employment by industry class, they believe that the distribution of employment at the second point in time is (to a large extent) conditioned by the situation in the first point in time. For this reason - when there are two sets of data dependent of each other - they suggest the chi - squared test not to be a significant method to determine whether relevant changes have occurred in industrial structure and therefore they introduce the Wilcoxon matched-pairs signed-ranks test for this analysis. [184]

The Wilcoxon test involves three steps: first, obtain the

---

183 Chisholm, M. and Oeppen, J: op. cit., pp. 28 - 30

184 Ibid., pp. 31 - 33

differences in absolute employment for each industry class; second, rank these differences, irrespective of their signs; and thirdly, question whether the pluses or minuses (depending on which of the signs gives a lesser sum) are randomly distributed over the range of differences. A distribution which is not significantly different from random suggests no structural change and a distribution different from random indicates that there has been a change in structure and that this change cannot be attributed to chance. In order to use the Wilcoxon test successfully, it was first necessary that they standardized the employment data in order to eliminate the temporal trend effects that may occur in this kind of data. [185]

The Wilcoxon test, however, is considered to be a suitable tool only insofar as significant structural changes over time are concerned; it is not considered appropriate for comparing two different areas at the same time. [186]

Based upon the conclusions of three studies undertaken by D. Kershaw, Forer and Fergusen and Hart (investigation concerning the differences or similarities of results using different measures of industrial specialisation), Chisholm and Oeppen chose two statistical methods to examine the changes in the degree of local specialisation and / or diversification: the Tress statistic to measure the magnitude and direction of change and the Wilcoxon matched-pairs signed-ranks test to determine the significance of the change. [187]

The Wilcoxon test, used to identify parts of the country in which

---

185 Chisholm, M. and Oeppen, J.: op. cit., p. 33

186 Ibid., p. 34

187 Ibid., p. 34

significant changes had occurred, yielded, however, discouraging results. According to the test, only eight of the sixty-one sub-regions showed sufficient change in structure to be regarded as significant and these eight sub-regions were scattered around the country, representing both fast and slow-growing areas and including rural as well as urban areas. Thus, -

> "a discouragingly fragmented pattern providing few clues as to the likely explanatory factors." [188]

Chisholm, and Oeppen, believed that the short time period studied, considering the relative stability of the economic system over considerable periods of time, may have been the main cause for the unsuccessful results of the test. They do remark, however, that although the statistical significance of the test was doubtful, the matched-pairs signed-ranks test provided useful information concerning the direction of the relationship between growth and structural change of employment, i.e., it proved that the faster the growth in a sub-region, the smaller the area's structural change and vice-versa. [189]

Due to the results of the Wilcoxon test, Chisholm and Oeppen's investigation on the degree of specialisation and/or diversification of the sub-regions of Great Britain was based solely on the Tress statistic. After calculating the Tress scores for the 61 sub-regions the authors were able to analyze the data and explain the several patterns observed.

With regard to diversification, for example, they established that apart from certain areas like the London area and central Scotland, the diversified regions formed a continuous belt in the country from Cumberland to Dorset, while the eastern parts of the country as well

---

188 Chisholm, M. and Oeppen, J: op. cit., p. 42

189 Chisholm, M. and Oeppen, J.: op. cit., p. 44

as Wales were characterized as highly specialised local economies. [190]

When observing changes over time in the Tress scores, they thought it became apparent that between 1959 and 1968 there was no significant trend toward diversification in the sub-regions but a strong tendency of convergence toward the national average. In other words, the highly specialised sub-regions were tending to diversification and the well diversified ones were becoming more specialised. Chisholm and Oeppen, therefore, suggested that the part of the country identified by the Wilcoxon test as having experienced significant structural change in employment was changing towards diversification. [191] They also observed that the larger the total employment in a sub-region, the more diverse the structure of employment would be. By regressing the Tress score for each sub-region on the total employment for 1959 and 1968 they proved that -

> "where total employment is less than one million, there is a close association between diversity of employment structure and the total workforce. Above the million mark, this relationship is much weaker, if not entirely absent." [192]

2 Government assistance to the sub-regions

a. The index for assistance

The issue of government assistance to the sub-regions was also analysed by Chisholm and Oeppen.

Due to the lack of data and more specific information, they suggested that the only possible way to assess government aid to an area was to consider first the Employment Exchange Areas as the basic

---

190 Chisholm, M. and Oeppen, J.: op cit., p. 47

191 Ibid., p. 49

192 Ibid., p. 55

geographic unit. The variations that have occurred in regional delimitations have always been based upon the Employment Exchange Areas and, therefore, the sub-regions are considered to be, in fact, mere amalgamations of these Areas. Having available the figures for employed population as well as duration of time in which each area has received Government aid, Chisholm and Oeppen estimated an "index of assistance" ranging from 0.0 (for no aid) to 100.0 (for continuous assistance to the whole sub-region). [193]

This index was calculated by multiplying the number of months designated for aid for each Exchange Area by the mean quarterly employment figure of each area obtaining, in this way, an employment - weighted measure of the time during which a region was assisted. Chisholm and Oeppen, however, do point out several limitations inherent to this assistance index: firstly, the nature and value of regional aid varies over time, so that one month of assistance cannot possibly have the same significance as any one other; also, a simple linear regression between the change in the Tress score and the assistance index did not prove to be significant, unless the regression between manufacturing industries only and the sub-regional Tress score for 1959 was considered. [194]

As the index for assistance, therefore, proved to be an unsatisfactory measure for assessing Governmental aid, the variable - floor area of industrial building - was chosen as the only other variable for which sufficient data was available. Once again, the authors found limitations with these data: they are restricted to England and Wales and 1964 is the earliest date for which figures are available. Finally, the variable 'gross area of factory floor completed'

---

193 Chisholm, M. and Oeppen, J.: op. cit., 60 - 61

194 Ibid., p. 61.

was used; these figures are registered with the award of Industrial Development Certificates and were found available for all the sub-regions of Great Britain since 1960. [195]

With the proposition that -

> "the greater the volume of gross completions the greater the likelihood that there will be a change in the industrial structure and hence of the degree of employment specialisation," [196]

Chisholm and Oeppen calculated a measure of success in attracting new employment by relating gross construction from 1960 - 1968 to the mean employment total obtaining, in this way, the average of employment in 1959 and 1968 and therefore estimating the gross construction in square feet per person employed in manufacturing. [197]

The simple correlation of this variable and the change in Tress score did not prove to be very significant, although it yielded a better result than was obtained with the "index for assistance". Using multiple correlation, however, made it possible to conclude that -

> "the amount of industrial building per worker in manufacturing employment is in no way related to the degree of specialisation exhibited by a sub-region in 1959" [198]

In other words, Chisholm and Oeppen suggested that the diversification which occurred in the period was mainly caused by the degree of specialisation existing in 1959 and that this tendency towards diversification in the regional economies was stronger than any influence that Government policy may have had. [199]

---

195 Chisholm, M. and Oeppen, J: op. cit., p. 62
196 Ibid., p. 62
197 Ibid., pp. 62 - 63
198 Ibid., p. 63
199 Ibid., p. 63

CHAPTER FOUR

An Analysis of an Appropriate Spatial Disaggregation in Employment Categories and Geographical Boundaries with Respect to an Examination of Trends in Industrial Diversification or Specialisation in Great Britain

I The Original Aim of the Research

A The Establishment of an appropriate spatial disaggregation in employment categories and in geographical boundaries with respect to an examination of trends in industrial diversification or specialisation in Great Britain

The main purpose of this thesis had been to establish an appropriate level of data disaggregation with which to analyse the influence of Governmental regional measures upon the industrial structure of the regions in Great Britain. As mentioned in Chapter 1, [200] the two main Governmental policies adopted over the years in Great Britain to try and reduce the regional imbalance of the national economy have been the reduction of unemployment in the less prosperous regions and the control of industrial congestion in the more favoured areas. These policy measures, therefore, were designated to affect the geographical distribution of employment and consequently the industrial structure of the regions, not only by increasing the number of jobs in some areas but by introducing new industries and skills in certain regions.

For this reason, it was decided that an investigation into the changes which have occurred in the industrial structure of the

---

200 See Chapter 1, pp. 11 -

regions towards the diversification or specialisation of employment opportunities would generally reflect - ceteris paribus - the success or failure of the Governmental measures introduced to reduce the differentiated economic pattern of the regions in Great Britain.

1 The Data Disaggregation Choice

Having studied several researchers who have analysed the problem of the diversification or specialisation patterns of the industrial structure in Great Britain, [201] one became aware of the different data disaggregation which can be used when trying to measure quantitatively the changes in employment pattern of the regions.

The data involved in an analysis using the Tress statistic, for example, consist of the categories of employment or industry classes, the time periods and the geographical units to be considered.

a The categories of employment

The categories of employment or industry classes in Great Britain are classified in two different ways: a general grouping of industry classes called the 25 Standard Industrial Classification (SIC) or a detailed sub division of each of the 25 SIC called the 152 Minimum List Headings (MLH).[202]

b The spatial disaggregation

In regard to the geographical units to be considered, one may estimate the diversification and/or specialisation trends of

---

201 See Chapter 3, pp. 91- 117

202 For the complete list of 25 SIC and 152 MLH, See Appendix B, pp. 174- 178

industries by a random selection of cities (like Tress), by sub-regions, (like Chisholm and Oeppen) by the standard planning regions (like Florence and Brown) or even by the Employment Exchange Areas, which are areas formed by the grouping of adjacent towns and are the smallest geographical unit for regional planning purposes. Each and every one of these geographical delimitations have their advantages and limitations. Chisholm and Oeppen, for example, believe that the standard economic planning regions "are far from homogeneous" [203] to be the geographical basis of a regional study; at the same time, however, they are aware that the economic planning sub-regions are not perfect units for analysis. They recognize that lack of data for units smaller than the standard regions is an ever present obstacle as well as the problem of data handling requirements for smaller geographical units.

Apart from the problem of the different geographical areas which can be used when measuring the diversification and/or specialisation in industrial trends, it is relevant to note here that Chisholm and Oeppen were the first researchers to undergo a thorough national study of changes in industrial trends without restricting their analysis to a specific area or areas of the country. For this reason - for being the first complete NATIONAL study of diversification and/or specialisation trends of industrial structures in Great Britain - Chisholm and Oeppen's research was chosen as the basis for this investigation.

B Chisholm and Oeppen's research

In Chapter 3, [204] a brief description was made of Chisholm and

---

203 Chisholm, M. and Oeppen, J.: op. cit., p. 106

204 See pp. 114- 117

Oeppen's analysis of patterns of diversification and/or specialisation of employment structures as well as of their study of the changing localisation of individual industries.

1 The nature of the data

Their analysis was based on the 61 economic planning sub-regions of Great Britain during the period 1959 to 1968 and used the 152 MLH classification for employment categories. They chose the 61 economic planning sub-regions because these geographical units were the smaller areas for which data were made available to them by the Department of Employment: for the year 1968 they received a tabulation of all employment totals for each of the 152 MLH employment categories and for each of the 61 economic planning sub-regions; for 1959, as there was no prepared tabulation organized on a similar basis as 1968, the Department of Employment made available the records of employment totals for each Employment Exchange area.

From these records, they compiled the totals for the 61 sub-regions trying to overcome two main difficulties: some of the 1959 Employment Exchange Areas crossed the boundaries of the 1968 sub-regions; and, some of the MLH categories in some Exchange areas were amalgamated to prevent disclosure of employment on work of strategic importance. [205]

The choice of the years 1959 and 1968 was determined by the fact that these years represent the largest run of statistics using the same industrial classification. Although data for 1958 are available on the same basis, they are considered unreliable because 1958 was the first year in which the new classification was used. 1968 is the last year

---

205 Chisholm, M. and Oeppen, J.: op. cit., pp. 38 - 39

before a new classification of the MLH categories was introduced.[206]

Furthermore, from 1948 to 1969 the Department of Employment's main annual series of employment statistics were based on counts of national insurance cards; so also was the less detailed quarterly series where one card in four was due for exchange each quarter. By counting the total number of cards exchanged it was possible to obtain quarterly national and regional estimates of the total number of employees (employed and unemployed) in the working population. By subtracting the numbers unemployed from this total, estimates of the numbers of employees in employment were obtained. In the June quarter the cards exchanged were also analysed by industry and local area.[207]

In 1969, however, the Government put forward the proposals for contributions and benefits related to earnings.[208] These proposals involved the payment of national insurance contributions for employed persons through the PAYE system and consequently the abolition of national insurance cards for such persons. On the implementation of these proposals, it would no longer be possible to obtain employment statistics from counts of national insurance cards.

2 The choice of a statistical technique

In Chapter 3[209] it was explained why Chisholm and Oeppen chose

---

206 Ministry of Labour Gazette, February 1959, p. 55

207 Department of Employment Gazette, January, 1973, pp. 5 - 7

208 White Paper on National Superannuation and Social Insurance Cmd 3883 HMSO, London, 1969

209 See Chapter 3, pp. 115 - 116

the Tress statistic technique as the most convenient measure of the magnitude and direction of change of industrial structures in the regions of Great Britain.

3 Aims and results of their investigation

Chisholm and Oeppen's research had three main aims: firstly, to establish if in areas of high unemployment, Government policies did in fact have a marked impact on the employment structure and particularly towards the diversification of job opportunities, as new industries were introduced to replace the old and declining industries. Secondly, they were determined to prove that the smaller an area's total employment, the more specialised the employment structure would be and vice versa. And finally, they aimed to find evidence to support the propositions that either the introduction of new industries in areas of high unemployment reduced the unemployment levels, or merely resulted in spatially differentiated changes in the degree of specialisation of local economies. [210]

After having calculated the Tress statistic for 61 economic planning subregions by the 152 MLH employment categories for 1959, it became evident that the areas more diversified formed a "more or less continuous belt of country from Cumberland to Dorset" [211] as well as included the areas around London, in Central Scotland and around Newcastle-upon-Tyne and Hull. The areas more specialised, on the other hand, were found towards the western part of Great Britain in Wales and along the eastern parts, including parts of Yorkshire. For 1968,

---

210 Chisholm, M. and Oeppen, J.: op. cit., pp. 13 - 23

211 Ibid., p. 47

the Tress statistic revealed approximately the same pattern with the exception of the areas in Scotland and the south west regions which became more specialised and the London - Merseyside axis which became even more diversified.

When calculating the Tress statistic for the 152 MLH employment categories, it is important to mention that the range of the Tress index varies from 7,650 (in the case of complete diversification, i.e., assuming a uniform distribution of employment among all the 152 categories) to an index of 15,200 (in the case of complete specialisation, i.e., assuming all employment is concentrated in one industry).

Between 1959 and 1968, Chisholm and Oeppen found that the Tress score for the 61 sub-regions declined slightly from 13,705 to 13,610. This could imply that during the period a small, although not very significant, trend toward diversification occurred with a strong tendency of the sub-regions to converge to the national mean, i.e., the highly-specialised areas tended to diversify and the highly-diversified regions tended to specialise.

The change in Tress scores from 1959 to 1968 was obtained by subtracting the 1968 Tress score from the 1959 value. Where a positive difference was found, diversification occurred during the period and where the difference was negative, it reflected a tendency towards specialisation.

For the country as a whole, their results indicated that twelve sub-regions tended to become more specialised and forty-nine sub-regions showed tendency toward diversification of their employment structure.

Of the total of 152 employment categories or industry classes,

108 are manufacturing industries, 37 are service industries and 7 are primary industries. Chisholm and Oeppen, therefore, were able to disaggregate the Tress score between manufacturing industries and service industries. The Tress statistic's range for manufacturing industries only is from 5,450 (complete diversification) to 10,800 (complete specialisation) and their results showed a greater tendency towards diversification for Wales, the south West and the north regions.

For the 37 service industries, the range of the Tress statistic varies from 1,900 (complete diversification) to 3,700 (complete specialisation). The general pattern of change for service industries reflected an overall tendency for the sub-regions to become more specialised, although three areas showed signs of greater diversification: much of the South East except London itself, the Severnside, South Wales area and the east coast from the Wash to south of Teeside. The north-western part of England and north Wales tended towards greater diversification also, although to a much lesser extent than the three areas mentioned before. Among the more specialised areas, Scotland and central Wales were the regions with the higher degree of specialisation of service employment.

In order to test their assumption - that the larger the total employment in a sub-regions, the more diverse the structure of employment is likely to be - Chisholm and Oeppen regressed the Tress score (of the 152 MLH industry classes) for each sub-region on the total employment for 1959 and 1968. For 1968 they obtained the following result: $Y = 17{,}145 - 6695 \log X$ with $r^2 = 0.690$ and $F = 127.345$; and for 1959 their result was: $Y = 17{,}864 - 791.2 \log X$, $r^2 = 0.748$ and $F = 175.218$, where Y is the Tress score and X is the

employment for the sub-region. Based on the high significance obtained with their calculations, the authors suggested that the results did in fact prove the association between diversity of employment structure and the absolute size of the workforce.

In order to interpret further the association between the Tress score and the logarithm of employed population, Chisholm and Oeppen carried out two other exercises: the first was to calculate the Tress scores for 1968 for the standard economic planning regions and then regress these scores on the logarithm of employment. This relationship was found to be not acceptable even at the 95 per cent level of significance. The second exercise was to randomly select some sub-regions among the 61 existing sub-regions of Great Britain, form synthetic regions by amalgamating these sub-regions and then calculate the Tress scores for these synthetic regions. The reason of these synthetic regions was to create a selection of areas which would have a larger labour force than the original 61 sub-regions. They obtained the following result: $Y_1 = 15,767 - 458.6 \log X_1$ with $r^2 = 0.470$ and $F = 76.352$. The correlation yielded for the synthetic regions was much lower than the one for the 61 sub-regions. Chisholm and Oeppen's explanation for this result is that the working population of most synthetic regions exceed one million employees and thus the association between diversity of employment and size of total workforce tends to be much weaker or even non-existent when total employment is greater than one million people.

Although Chisholm and Oeppen believed that their results did indicate a close association existing between diversity of employment and size of working population, they recognised that there had been a decline in the degree of association over the time period studied (in 1959 $r^2 = 0.748$ and in 1968 $r^2 = 0.690$). For this reason, they

investigated further the regression equations used. Assuming once again that a given level of diversification could only be attained with a larger total workforce, Chisholm and Oeppen suggested that the intercept value of the regression equation (the "a" coefficient) would increase between 1959 and 1968 and the inclination of the slope (given by the "b" coefficient) would remain constant. This change would reflect that for any given population, the Tress score would be higher in 1968 than in 1959, a higher Tress score indicating a more specialised employment structure.

In actual fact, however, the intercept value of the equation declined between 1959 and 1968 and the slope of the regression equation flattened. These changes were consistent with the decline in the level of correlation and indicated that sub-regions with small employment totals had a greater chance of diversifying their employment pattern than before. This result, according to the authors, could have relevant policy implications insofar that the establishment of large centres (in order to diversify employment) could become less important than currently believed.

Summing up Chisholm and Oeppen's main conclusions it can be said that:

(a) their main hypothesis - that assisted areas should display greatest tendency towards diversification of employment - did not find support;

(b) their investigation based on standard regions yielded insignificant results; at the same time they recognized that studies based on sub-regions are far from perfect. Therefore, they suggested the need for urgent research as to which is the best level of geographical disaggregation in studies of this nature;

(c) the low level of explanations achieved in their research was caused by lack of appropriate data or poverty of data when the figures were made available. They believed this was a strong indication of the need of much better statistical information for geographical units smaller than the standard regions.

Their more specific results can be summarized into six main points:

(a) a general trend, between 1959 and 1968, towards the diversification of employment structures in the sub-regions of Great Britain, although the reverse tendency - greater specialisation - did occur in some areas around London, around Birmingham and Merseyside and other pockets scattered around the country;

(b) diversification has been more characteristic of employment in the manufacturing industries than in the service trades;

(c) more significant than the general tendency towards diversification, was the convergence of employment structures towards the national mean, although there was in fact a slight trend to an overall diversification. Chisholm and Oeppen suggested, furthermore, that this convergence appeared to be sufficiently strong to mask any effects of Governmental policies, insofar as no evidence was found to support one of their initial hypotheses that Government policies to aid assisted areas should have resulted in greater diversification in those areas;

(d) the level of diversification in an area of given total employment was tending to increase rather than decrease. This conclusion, less expected by the authors, did not confirm their a priori expectations regarding the concept of scale economies increasing over time and the notion of manufacturing plants getting larger;

(e) at the same time that sub-regions were found to be diversifying, industries were found to becoming less localised. Manufacturing industries, however, were found to be dispersing while the service industries were the ones to become more localised. This result could have important implications for regional policies, according to Chisholm and Oeppen, in that the service sector has been the fastest growing provider of employment;

(f) growth industries, as well as declining industries were not found to be specifically localised in certain areas. On the contrary, they were discovered to be fairly well scattered around the country. This conclusion tended to deny the notion that some regions, more than others, had the power to attract more employment. The rather complex pattern of inter-industry linkages seemed to be the explanation for such localisations.

C Proposed Field of Research

1 The Aim of the Research

As mentioned earlier in this Chapter, [212] one of Chisholm and Oeppen's main conclusions was the rather urgent need for an investigation as to which would be the most appropriate level of geographical disaggregation (standard regions, sub-regions, Employment Exchange Units) and employment categories disaggregation (152 MLH or 25 SIC) in order to examine trends towards diversification or specialisation of the industrial structures of areas in Great Britain.

The original aim of this research, therefore, was to calculate the Tress statistic indices for different geographical units of the country, estimating for each geographical delimitation the indices by

---

212 See p. 129-130

the 152 MLH and 25 SIC industrial categories. In other words, this involved the acceptance of problems in data handling such as calculating:

(a) the Tress indices for the approximately 800 Employment Exchange areas of Great Britain by the 25 SIC for 1959;

(b) the Tress indices for the approximately 800 Employment Exchange areas by the 152 MLH for 1959;

(c) the Tress indices for the approximately 800 Employment Exchange areas by the 25 SIC for 1968;

(d) the Tress indices for the approximately 800 Employment Exchange areas by the 152 MLH for 1968;

(e) the Tress indices for the 61 sub-regions of Great Britain by the 25 SIC for 1959;

(f) the Tress indices for the 61 sub-regions by the 152 MLH for 1959;

(g) the Tress indices for the 61 sub-regions by the 25 SIC for 1968;

(h) the Tress indices for the 61 sub-regions by the 152 MLH for 1968;

(i) the Tress indices for the 10 standard regions and for Great Britain as a whole by the 25 SIC for 1959;

(j) the Tress indices for the standard regions and Great Britain by the 152 MLH for 1959;

(k) the Tress indices for the standard regions and Great Britain by the 25 SIC for 1968;

(l) the Tress indices for the standard regions and Great Britain by the 152 MLH for 1968 .

For each of the twelve groups of Tress indices, a Tress index for all industries as well as a Tress index only for manufacturing industries would be calculated in order to study the patterns of behaviour of the different sectors of economic activity.

The calculations of these Tress indices (for different

geographical units as well as different employment categories and different time periods) were to be undertaken in order to: establish whether or not different levels of data disaggregation indicated different trends in diversification or specialisation; compare these results; and, interpret these differences in the context of the level of data disaggregation commonly adopted for regional policy.

As no test of significance is possible with the Tress statistic, simple correlation would be used. The Tress score for the 25 SIC as well as for the 152 MLH for each geographical unit used (the Employment Exchange Areas, the sub-regions and the standard regions) both in 1959 and 1968 would be correlated to the employment totals of each corresponding geographical delimitation. The purpose of these correlations would be to establish if there is any statistical relationship between these two sets of data in order to:

(a) test the hypothesis that the larger the total employment in an area the greater is the tendency of the area to diversify its industrial structure; and

(b) determine the different level of correlation yielded when using the 25 SIC or the 152 MLH employment disaggregation.

2 Data Discussion

The choice of the Tress statistic technique was largely influenced by the fact that Chisholm and Oeppen's research was chosen as the basis of the investigation. In other words, the results of this research were to be compared with the ones obtained by Chisholm and Oeppen for the sub-regions of Great Britain. The interpretation on the changes in diversification and/or specialisation of the industrial structures of the areas in Great Britain were also to be based on the results

obtained using the other spatial disaggregations.

a Limitations of the Tress statistic technique

It is important to mention the several limitations involved in the use of the Tress statistic technique. The most important limitation when using the Tress statistic is that it is impossible to determine whether any change in the level of diversification in an area between two time periods is statistically significant. The Tress index merely measures the magnitude and direction of change (toward or away from diversification). Chisholm and Oeppen, however, partly overcome this problem by using standard correlation, yielding values of r^2, in order to compare, at a descriptive level, the pattern of changes over the time period 1959 and 1968, as well as compare the structure of employment in one region to the structure in another. [213]

Another limitation of the Tress statistic lies in the fact that it gives no indication of the behaviour of individual components; i.e., the results tell neither the factors involved in producing a certain distribution of industry nor how important these factors are in relation to others and to what extent this factor or factors' importance will persist. [214]

b Time period

The choice of the time period 1959 and 1968 was also conditioned by the same reasons that led Chisholm and Oeppen to restrict their

---

213 Chisholm, M. and Oeppen, J.: op. cit., pp. 33 - 38

214 Kershaw, D.: Diversification of Industry in Britain. Undergraduate project for B.Sc. requirements, Dept. of Geography, University of Bristol, 1971.

investigation to this period of time: these years are the longest period in which the same industrial classification was used for employment categories and the same technique for estimating the numbers of employees in employment was adopted. [215]

Apart from the restrictions in data continuity, Chisholm and Oeppen also believed that 1959 and 1968 were extremely representative years in which to investigate the diversification or specialisation trends of industrial structures because:

(a) in both periods, centred in 1959 and 1968 the country's Gross Domestic Product was growing steadily and the growth rates in both periods were higher than the immediately preceding periods;

(b) 1959 was a year of peak unemployment compared with previous years (a mean total of 475,000 people out of work), as well as 1968 (mean total of 564,000 unemployed);

(c) both 1959 and 1968 were years in which the totals of unfilled vacancies were a little above the minimum point reached the previous years;

These two years - 1959 and 1968 - tend, therefore, to represent comparable patterns of economic activity with the totals of unemployment and vacant jobs being much the same during these periods.

(d) the period 1959 to 1968 also represented the time in which Government allocated greater priority to regional measures. The Local Employment Act of 1960 abolished the Development Areas and replaced them by the new Development Districts and the Labour Government of 1964 gave new impetus to the development of regional policies in Great Britain.

---

215 See pp. 123-124

3 Restrictions of the Research

The data needs of the research required data on the employment totals for the Employment Exchange areas and for the sub-regions in Great Britain disaggregated at the 25 SIC and the 152 MLH industrial classifications for 1959 and 1968 to be obtained from Governmental Departments. After lengthy months of correspondence, not only with several statistical divisions of the Department of Employment, but also with the Department of Industry, the Department of the Environment and the Public Record Office, confirmation was received that the employment totals required for this research were kept exclusively at the Department of Employment. The first two vague refusals in granting the data by the Statistic Division C1 and the Statistic Division C6 of the Department of Employment referred to the confidential aspect of such information:

(a) "within a local area, figures for a single industry or groups of industries may reveal confidential information about the numbers employed by individual firms and the issue of the full industrial breakdown [employment records for employment exchange areas] is therefore restricted to Government departments, local authorities and certain other organisations. It is unlikely to be issued for the purposes of a post graduate research". [216]

(b) " . . . I regret that access to full Employment Record II data cannot be granted for a project of this kind." [217]

Professor M. Chisholm, furthermore, wrote confirming that:

---

216 Extract from a letter received from the Statistics Division C6 of the Department of Employment in June 15, 1976.

217 Extract from a letter received from the Statistics Division C1 of the Department of Employment in June 21, 1976.

" . . . one of the post graduates in the Cambridge Department . . . is working with employment data." [218] and

" concerning data for the employment exchanges, Jim Oeppen and I also encountered a serious problem when we were doing our work. The Department of Employment was willing to supply us with data at the MLH level for 1968 only by sub-regions. They regarded the then 'current' employment exchange data as semi-confidential. However, they did give us the 1959 data for each employment exchange." [219]

The request to the Department of Employment for data on employment totals for 1959 and 1968 disaggregated at the 25 SIC and the 152 MLH only at a sub-regional level was repeated.

Once again, the Department of Employment refused to give the data.

" . . . the data you have asked for, that is, sub-divisional employment totals by SIC groups and MLH's, cannot be made available because of restrictions sanctioned under the Statistics of Trade Act.
Unrestricted data are available by Standard Regions and in this form are published in the Department of Employment Gazette." [220]

"Employment estimates produced for each minimum list heading of the Standard Industrial Classification are restricted on both a local and sub-regional level. In an unrestricted form they appear in a variety of Government publications, principally the Department of Employment Gazette.
For the purposes of Miss Infante's research there seems to be a need for data on the more precise restricted basis. The Department can only consider the release of such information for the purposes of economic research and by application to the

---

218/219 Extracts from a letter received from Prof. M. Chisholm in June, 29, 1976

220 Extract from a letter received from the Statistics Division C1 of the Department of Employment in September 21, 1976

Secretary of State. However, you should be aware that ER II data are not released for the sole purpose of academic research and if this is the nature of Miss Infante's work then I regret that I am unable to provide you with the data required." [221]

Section 9 - Disclosure of Information - of the Statistics of Trade Act of July 31st, 1947, states that:

"(1) No individual estimates or returns, and no information relating to an individual undertaking, obtained under the foregoing provisions of this Act, shall, without the previous consent in writing of the person carrying on the undertaking which is the subject of the estimates, returns or information, be disclosed, except -

(a) in accordance with directions given by the Minister in charge of the Government department in possession of the estimates, returns or information to a Government department . . . for the purposes of the exercise by that department . . . of any of their functions; or

(b) for the purposes of any proceedings for an offence under this Act or any report of those proceedings." [222]

Having, therefore, received negative replies from the Department of Employment to the requests asking for the employment totals of 1959 and 1968 disaggregated at the Employment Exchange Areas and/or sub-regional levels for the 25 SIC and 152 MLH industrial classifications, it became clear that the original aim of this research would have to be modified.

---

221 Extract from a letter received from the Statistics Division C1 of the Department of Employment in December 20 1976

222 Paragraph 1, Section 9, The Statistics of Trade Act 1947, London, HMSO, July 31st 1947.

II Alternative Research

A The Relationship between the Tress indices for the Standard Regions disaggregated at the 25 SIC and the 152 MLH industrial classifications for 1959 and 1968

1 Introduction

The restrictions imposed on the disclosure of information left a unique alternative with which to test the results of changes in the diversification or specialisation trends of employment structures in Great Britain using the Tress statistics. This alternative has been to measure the Tress scores, both at the 25 SIC and the 152 MLH industrial classifications for the ten economic planning regions of Great Britain, as well as for Great Britain as a whole for 1959 and 1968. Furthermore, Tress indices have also been calculated for manufacturing industries and for all industries at both industrial classifications (25 SIC and 152 MLH) for 1959 and 1968.

The original aim of the research - to establish the most appropriate level of geographical disaggregation as well as employment disaggregation for the analysis of the diversification and/or specialisation tendencies of industrial structures in Great Britain - was altered and restricted to the measurement of Tress indices by different employment disaggregation (25 SIC and 152 MLH) only; the interest, therefore, was to measure these indices with the purpose of determining whether the level of industrial disaggregation does in fact influence the results obtained.

2 Calculation Procedures

(a) Source of data

The employment totals (the estimated numbers of employees, employed and unemployed) at the end of May 1959 by Standard Regions were obtained in the Ministry of Labour Gazette issue of May 1960. The same figures for June 1968 were obtained in the Employment and Productivity Gazette issue of March 1969. The Ministry of Labour Gazette and the Employment and Productivity Gazette were both publications of the Department of Employment. As from January 1971 the Department of Employment's official publication has again changed name to Department of Employment Gazette.

(b) Geographical delimitations

The regional divisions for the employment totals in 1959 are the old Standard Regions: London and South-East, East and South, South West, Midlands, North Midlands, East and West Ridings, Northwest, North, Scotland and Wales.

For 1968, the regional division of Great Britain is based on the new Standard Regions: South East, East Anglia, South West, East Midlands, West Midlands, Yorkshire and Humberside, Northwest, North, Scotland and Wales.

According to Dixon and Thirlwall, [223] however, the new Standard Regions of the South East, East Anglia, East Midlands, West Midlands and Yorkshire and Humberside are broadly equivalent in area to the old Standard Regions of London and South East, East and West, North Midlands, Midlands and East and West Ridings, respectively. The boundaries of the other regions have remained virtually unchanged over time.

---

223 Dixon, R. J. and Thirlwall, A. P.: op. cit., pp. 1 - 2

c Calculation of the Tress statistic indices

In Chapter 3, [224] a brief explanation was given of the procedures for the calculation of the Tress index statistic.

Taking the region of Yorkshire and Humberside as an example, a step-by-step demonstration will be given for the calculation of the Tress indices for the manufacturing industries as well as for all industries for 1968 disaggregated at the 25 SIC industrial classification level. [225]

i Tress index for manufacturing industries for the region of Yorkshire and Humberside in 1968 at the 25 SIC industrial level:

(a) the employment totals for the fourteen manufacturing industries are listed next to each corresponding manufacturing employment category and the total number of employees in manufacturing industries in the region is written at the bottom of this column (869,500 employees);

(b) by dividing the employment totals of each of the fourteen manufacturing industries by the total manufacturing working population of the area, it is possible to obtain the percentage of the working population involved in each of the fourteen manufacturing industries;

(c) these percentages are then ranked in descending order of magnitude;

---

224 See pp. 102-104

225 See Appendix B: Table B - 3 and Table B - 15

(d) side by side to these ranked percentages, a series of progressive totals is written, the first of which is the percentage figure for the largest industry, the second progressive total is the percentage total for the two largest industries, the third progressive total is the percentage total for the three largest industries, and so on. The last progressive total, i.e., when the last industry has been accounted for, should equal 100. (In Yorkshire and Humberside in 1968, the last progressive total is 99.9999);

(e) the sum of these fourteen progressive totals is the Tress crude diversity index. Therefore 1050.44 is the Tress crude diversity index for manufacturing industries only in Yorkshire and Humberside in 1968 at the 25 SIC level;

(f) to calculate the Tress refined diversity index for manufacturing industries in Yorkshire and Humberside in 1968, it is necessary to estimate first the range of the Tress statistic (from a situation of complete diversification to a situation of complete specialisation of the employment structure).
For this region, at this industrial disaggregation, the Tress statistic has a range from 750.00 (assuming complete diversification of employment) to 1400.00 (assuming complete specialisation of employment).

The range of the Tress statistic is calculated as follows: -

(i) Assuming complete diversification of employment: the total workforce in the manufacturing industries is assumed to be equally divided among the fourteen industries (thus 100 per cent ÷ 14 = 7.14 per cent of the work-force is employed in each industrial category.) A progressive total column is obtained for the fourteen manufacturing industries (7.14 per cent of the workforce in the first industry, 14.28 per cent of the workforce concentrated in the first two industries and so on). The sum of these progressive totals 750.00 is the range of the Tress statistic

assuming there was complete diversification of employment in the manufacturing industries of Yorkshire and Humberside in 1968.

(ii) - Assuming complete specialisation of employment:

the total workforce in the manufacturing industries is assumed to be concentrated all in one industry. In this way, the first progressive total would be 100. The other thirteen industries in the area would have no employment but Tress, nevertheless, decided that further progressive totals of 100 should be set down for each industrial category. The sum of these progressive totals 1400 (i.e. 100 x 14) is the range of the Tress statistic assuming there was complete specialisation of employment in the manufacturing industries of Yorkshire and Humberside in 1968.

The Tress refined diversity index (R.D.I.) (ranging from 0 for maximum diversity to 1 for minimum diversity) is obtained by the following formula:

$$\text{R.D.I.} = \frac{\text{Actual crude index - crude index for greatest diversity}}{\text{Crude index for least diversity - crude index for greatest diversity}}$$

For Yorkshire and Humberside for 1968, the R.D.I. would be:

$$\frac{1050.44 - 750.00}{1400.00 - 750.00} = \frac{300.44}{650.00} = 0.46$$

Therefore, the Tress indices for manufacturing industries in Yorkshire and Humberside in 1968 at the 25 SIC are: 1050.44 = crude diversity index and 0.46 = refined diversity index.

ii Tress index for all industries for the region of Yorkshire and Humberside in 1968 at the 25 SIC industrial disaggregation level:

The exact procedure used to calculate the Tress indices for manufacturing industries is used to estimate the indices for all industries. The only difference involved in these calculations is that in this case the twenty-five industrial orders are considered instead of only the fourteen manufacturing industries.

(a) the employment totals for the twenty-five industrial orders are listed next to each corresponding industry and the total number of employees in industry in the region is written at the bottom of this column (2,050,000 employees);

(b) the employment total of each of the twenty-five industries is divided by the number of total working population of the region in order to obtain the percentage of the working population involved in each of the twenty-five industries;

(c) these percentages are then ranked in descending order of magnitude;

(d) side by side to these ranked percentages, the series of progressive totals are written (same procedure used as when calculating the Tress indices for manufacturing industries only); [226]

(e) the sum of the twenty-five progressive totals is the Tress crude diversity index. Therefore, 1844.02 is the Tress crude diversity index for all industries in Yorkshire and Humberside in 1968 at the 25 SIC level;

(f) Before estimating the Tress refined diversity index for all industries, we must establish the range of the Tress statistic.

---

226 See pp. 141-142

For all industries in Yorkshire and Humberside in 1968 at the 25 SIC industrial disaggregation level, the Tress statistic has a range from 1300.00 (assuming complete diversification of employment) to 2500.00 (assuming complete specialisation of employment); [227]

The Tress refined diversity index (R.D.I.) for all industries in this region is therefore:

$$R.D.I. = \frac{1844.02 - 1300.00}{2500.00 - 1300.00} = \frac{544.02}{1200.00} = 0.45$$

The Tress indices for all industries in Yorkshire and Humberside in 1968 at the 25 SIC level are:

1844.02 = crude diversity index and 0.45 = refined diversity index.

The calculation of the Tress crude diversity index and the Tress refined diversity index for manufacturing industries as well as for all industries disaggregated at the 152 MLH industrial level follows the same pattern as the calculation procedures for the indices at the 25 SIC level. The only differences concern the number of industries involved and the range of the Tress statistic. When calculating the Tress indices for manufacturing industries at the 152 MLH level, we must bear in mind that there are 108 manufacturing industries at this level of disaggregation.

The range of the Tress statistic for manufacturing industries disaggregated at the 152 MLH level varies from 5450.44 (assuming

---

227 See pp. 142-43 for the step-by-step calculation of the range of the Tress statistic.

complete diversification) to 10800.00 (assuming complete specialisation). For all industries, the range of the Tress statistic at the 152 MLH level varies from 7650.00 (assuming complete diversification) to 15200.00 (assuming complete specialisation of employment).

3 Analysis of Results

a Summary Pages of Results

The tables on the following pages summarize the results of the Tress indices for the Standard Regions of Great Britain.

SUMMARY TABLE 1: RESULTS OF THE TRESS INDICES FOR THE STANDARD ECONOMIC PLANNING REGIONS CALCULATED FOR THE 25 SiC EMPLOYMENT CATEGORIES

(RESULTS EXTRACTED FROM TABLES B.4 TO B.14 AND TABLES B.27 TO B. 37)

REGIONS	END MAY 1959				JUNE 1968			
	For Manufacturing Industries		For All Industries		For Manufacturing Industries		For All Industries	
	Crude Diversity Index	Refined Diversity Index (%)	Crude Diversity Index	Refined Diversity Index (%)	Crude Diversity Index	Refined Diversity Index (%)	Crude Diversity Index	Refined Diversity Index (%)
South East	1079.06	0.51	1966.29	0.56	1089.29	0.52	1979.44	0.57
South West	1082.78	0.51	1937.02	0.53	1079.75	0.51	1949.40	0.54
East Anglia	1084.67	0.51	1931.38	0.53	1004.39	0.39	1752.60	0.38
East Midlands	1076.72	0.50	1842.50	0.45	1082.16	0.51	1861.11	0.47
West Midlands	1121.03	0.57	1889.44	0.49	1122.94	0.57	1908.55	0.51
Yorkshire & Humberside	1076.23	0.50	1856.61	0.46	1050.44	0.46	1844.02	0.45
North	1057.65	0.47	1897.22	0.50	1048.22	0.46	1883.74	0.49
North West	1046.23	0.46	1860.98	0.47	1031.49	0.43	1871.03	0.48
Scotland	1023.06	0.42	1862.71	0.47	1035.96	0.44	1891.80	0.49
Wales	1065.53	0.49	1920.95	0.52	1068.17	0.49	1892.13	0.49
Great Britain	992.46	0.37	1821.30	0.43	1005.85	0.39	1857.95	0.46

SUMMARY TABLE 2: RESULTS OF THE TRESS INDICES FOR THE STANDARD ECONOMIC PLANNING REGIONS CALCULATED FOR THE 152 MLH EMPLOYMENT CATEGORIES

(RESULTS EXTRACTED FROM TABLES B.16 TO B.26 AND TABLES B.38 TO B.49)

REGIONS	END MAY 1959				JUNE 1968			
	For Manufacturing Industries		For All Industries		For Manufacturing Industries		For All Industries	
	Crude Diversity Index	Refined Diversity Index (%)	Crude Diversity Index	Refined Diversity Index (%)	Crude Diversity Index	Refined Diversity Index (%)	Crude Diversity Index	Refined Diversity Index (%)
South East	8460.45	0.56	12808.56	0.68	8690.08	0.61	12987.79	0.71
South West	8843.89	0.63	13142.59	0.73	8713.67	0.61	13080.82	0.72
					9070.59*	0.68*	13271.03*	0.74*
East Anglia	8851.52	0.64	13055.54	0.72	8578.56	0.58	13089.96	0.72
East Midlands	8757.19	0.62	12872.13	0.69	8738.05	0.61	12812.96	0.68
West Midlands	9200.73	0.70	12940.36	0.70	9185.14	0.70	12938.15	0.70
Yorkshire & Humberside	9005.15	0.66	12948.56	0.70	8844.31	0.63	12847.44	0.69
North	9102.34	0.68	13275.55	0.75	8868.18	0.64	13077.34	0.72
North West	8488.65	0.57	12374.48	0.63	8347.09	0.54	12378.12	0.63
Scotland	8489.83	0.57	12777.88	0.68	8434.40	0.56	12796.00	0.68
Wales	8997.94	0.66	13330.98	0.75	8789.14	0.62	13065.91	0.72
Great Britain	7993.83	0.48	12352.67	0.62	8117.62	0.50	12466.31	0.64

* The second Tress statistic index for the South West was obtained using the real sums of the of the total employment in manufacturing industries and in all industries and not using the approximate values given in the Employment and Productivity Gazette, March 1969.

b Interpretation of Results

i Patterns of diversification or specialisation of industrial structures in the Standard Regions of Great Britain

Examining the results of the Tress scores for 1959 and taking account of all the 152 industry classes, one tends to conclude that a varied pattern of specialisation of employment structures occurred in the Standard Regions as well as in Great Britain as a whole. The South West, the North and Wales were the areas relatively more specialised and the South East, the North West and Scotland were regions less highly specialised.

Considering only the manufacturing industries of the 152 MLH industry classes in 1959 a similar varied pattern of specialisation was observed. The West Midlands, Yorkshire and Humberside, the North and Wales were the areas more highly specialised and the South East, the North West and Scotland were again less highly specialised than the other regions.

It is important to mention, however, that the Tress score for manufacturing industries in 1959 for Great Britain as a whole showed greater diversification. In other words, a pattern unlike the Regions.

At the 25 SIC industrial level, the Tress scores for all industries in 1959 revealed greater diversification of employment for Great Britain and some regions than of employment for certain other areas. The more diversified areas were the East Midlands, Yorkshire and Humberside, the North West and Scotland and the more specialised regions at the 25 SIC level were the South East, East Anglia and the South West.

Considering the Tress scores for manufacturing industries at the 25 SIC level in 1959, a mixed pattern of diversification is observed with the exception of the West Midlands, the South West and East Anglia that revealed a slightly greater specialisation of employment.

For 1968, the following pattern of diversification and/or specialisation was observed:

- the Tress scores for all industries at the 152 MLH industrial disaggregation level once more reflected the varied picture of the Standard Regions having specialisation of employment; this same pattern (of specialisation) was maintained with the results of the Tress scores for manufacturing industries. As in 1959, the more specialised areas considering all industries were the South West, the North, Wales and now East Anglia. The less highly specialised were the East Midlands, the North West and Scotland.
- at the 25 SIC industrial disaggregation level the 1968 Tress scores (for all industries as well as for manufacturing industries) revealed much the same pattern as the Tress scores at the 25 SIC level in 1959: an overall dual picture, i.e., some regions being characterized more by specialisation and others more by diversification, the more diversified areas being East Anglia, Yorkshire and Humberside, the North West and Scotland and the least diversified being the South East, the South West and West Midlands.

If a general pattern of behaviour of the industrial structures in the Standard Regions of Great Britain is to be determined by the results of the Tress statistics, it may be observed that:

- the employment category disaggregation at the 152 MLH level, both in 1959 and in 1968, yielded results showing varied

specialisation of employment; the South West, the North and Wales being the more highly specialised areas and the South East, North West and Scotland being the less specialised regions;

- at the 25 SIC industrial disaggregation level, the Tress scores for 1959 as well as 1968 revealed a mixed pattern in the regions: both diversification and specialisation of their employment structures. The more diversified areas (in both time periods) were the North West, Scotland and Yorkshire and Humberside and the least diversified were the South East and the South West.

These observations confirm that the level of industrial disaggregation does in fact influence the results obtained. When using the more comprehensive and homogeneous MLH level of disaggregation for both time periods analysed, one observes an overall picture of the employment structures of the Standard Regions being more specialised; on the other hand, the more compact 25 SIC industrial disaggregation level reveals a mixed picture of the employment structures in the regions (for 1959 and 1968): both diversification and specialisation.

Taking account of the data limitations and the limited number of observations (only one spatial disaggregation: the ten standard economic planning regions) it would appear, nevertheless, that the greater the employment disaggregation, the greater the regions reveal a marked specialisation of employment structures.

ii Correlation between the Tress scores and the employment totals of the Standards Regions at the 152 MLH and the 25 SIC

From the results obtained with the Tress scores, a rather complex

pattern of diversification or specialisation of industrial structures is observed throughout the country. In other words, it is rather difficult to establish a uniform trend of changes in trends throughout the regions. Some regions, however, have revealed no changes in employment structures through time: in 1959 as well as in 1968 the South West, the North Wales, East Anglia and Yorkshire and Humberside have been characterized by more specialised employment structures, while the North West, Scotland, the South East and to a lesser extent both East and West Midlands have always tended to be areas with more diversified employment structures.

Due to the rather coarse geographical disaggregation available and especially due to the lack of other geographical delimitations with which to compare the results, it would seem extremely hazardous to try and explain the reasons for such complex and scattered diversification and specialisation throughout the country.

Considering, however, all the limitations involved, one could still attempt to explain the non-uniform pattern of behaviour of the employment structures of the regions. The more prosperous regions of Great Britain, in the south eastern part of the country have as a whole showed a slightly greater pattern of diversification than the showed a slightly greater pattern of Britain, East Anglia and Yorkshire and Humberside which have been chacterized by a greater specialisation of their employment structures. This pattern does tend to reflect the traditional regional imbalance found in Britain although it should be mentioned that this is an over-generalisation of a rather scattered and diversified pattern of behaviour.

Chisholm and Oeppen's hypothesis - that the larger the total

employment in a region, the more diverse the structure of employment is likely to be - was tested using data at a regional level.

To test this possibility, the Tress scores (for both the 152 MLH and 25 SIC level) for each region and Great Britain were regressed on the total employment for 1959 and 1968 and the following results were obtained:

- 1959 at the 152 MLH level

  $Y = 13206 - 0.000115\ X$

  $r = -0.549$

  $r^2 = 0.301$

(where Y is the Tress score and X is the employment for the region);

- 1959 at the 25 SIC level

  $Y = 1869 + 0.0000123\ X$

  $r = 0.3913$

  $r^2 = 0.1531$

- 1968 at the 152 MLH level

  $Y = 12944 - 0.0000158\ X$

  $r = -0.1526$

  $r^2 = 0.0232$

- 1968 at the 25 SIC level

  $Y = 1842 + 0.0000177\ X$

  $r = 0.6123$

  $r^2 = 0.3749$

The results, therefore, establish a very low level of correlation between the two sets of data (Tress scores for all industries and employment totals for all industries) at the Standard Regions

geographical disaggregation. A large proportion of the variation in one variable is not explained by the other: 30 percent, 15 percent, 2 percent and 37 percent respectively. It is important to mention, however, that at the 152 MLH disaggregation level in 1959 and 1968 the negative sign of the b coefficient indicates an inverse relationship between the Tress score and the employment totals. In other words, the larger the employment total of a region, the smaller the Tress score (reflecting a more diversified area). This observation confirms Chisholm and Oeppen's belief that the larger the working population of an area the more diversified its employment structure will be.

It is also noteworthy to mention that over time the results from the use of the MLH industrial disaggregation are becoming less similar - the value of r^2 declining (in 1959, $r^2 = 0.301$ and in 1968, $r^2 = 0.0232$), while the results from the use of the 25 SIC classification have revealed a higher value for r^2 over time (in 1959, $r^2 = 0.1531$ and in 1968, $r^2 = 0.3749$).

These observations have important implications for Chisholm and Oeppen's hypothesis of a relationship between population size and diversification of employment structures. The results could imply that with the passage of time (reflecting, maybe, increased regional aid) and with a more homogeneous industrial classification, their hypothesis could become weaker.

Furthermore, the intercept values of the regression equations (the "a" coefficients) have decreased at the 152 MLH and 25 SIC employment disaggregation in 1968 compared to 1959. This observation could perhaps reflect that the standard regions would be having a greater chance to tend towards the diversification of their employment

structures (a smaller Tress score indicating a larger tendency towards diversification). This conclusion could again confirm Chisholm and Oeppen's belief that a larger working population (larger population in 1968 than in 1959) tends to imply greater diversification of employment structures.

Another exercise was undertaken in order to test the relationship between working population size and the extent of industrial diversification. The Tress scores for manufacturing industries only (for both the 108 MLH and the 14 SIC level) for each region and Great Britain were regressed on the manufacturing employment for 1959 and 1968. The following results were obtained:

- 1959 at the 152 MLH level

  $Y = 8921 - 0.000115\ X$

  $r = -0.7586$

  $r^2 = 0.5754$

- 1959 at the 25 SIC level

  $Y = 1079 - 0.000009\ X$

  $r = -6623$

  $r^2 = 0.4387$

- 1968 at the 152 MLH level

  $Y = 8777 - 0.000071\ X$

  $r = -0.6116$

  $r^2 = 0.3740$

- 1968 at the 25 SIC level

  $Y = 1064 - 0.000005\ X$

  $r = -0.3494$

  $r^2 = 0.1221$

The results to determine the level of correlation between the

Tress scores for manufacturing industrial employment for the regions and Great Britain in 1959 and 1968 did exhibit a higher correlation level with employment in manufacturing in the same regions than those found for all industries.

Unlike the results of the correlation for data on all industries, where only the 152 MLH disaggregation level yielded a negative b coefficient, the correlation for manufacturing industries at both the 152 MLH and the 25 SIC level yielded negative b coefficients.

Therefore, the Tress scores for manufacturing industries at the 152 MLH and 25 SIC level both in 1959 and 1968 regressed onto the manufacturing employment revealed an inverse relationship between the two sets of data at all levels of industrial disaggregation in both time periods. In other words, the larger the employment total, the smaller the Tress score (the more diversified the employment structure of an area).

This result indicates that eliminating the agricultural and services industries, the tendency of employment structures to diversify is present at all the employment disaggregation levels (152 MLH and 25 SIC. This observation not only reveals the general tendency for manufacturing industries to disperse more than total industries, but it could also indicate that agricultural and service industries tend to be more localised independently of the employment disaggregation used.

The intercept values of these regression equations (the "a" coefficients) have decreased from 1959 to 1968 at both the 152 MLH and 25 SIC employment disaggregation, following much the same pattern of

behaviour as the "a" coefficients of the regression equations for all industries. Therefore, these decreased values for the manufacturing industries seem to reveal the same pattern for the manufacturing employment structures to tend towards diversification as the employment structures for all industries.

Furthermore, it is interesting to note that the value of the coefficient of determination (r^2) for manufacturing industries clearly tend to decrease over time. At the 152 MLH level, the 1959 r^2 = 0.5754 and the 1968 r^2 = 3740. Likewise, at the 25 SIC level, the 1959 r^2 = 0.4387 and the 1968 r^2 = 0.1221. In other words, it can be concluded that regardless of the employment disaggregation used, the relationship between diversification and population size for manufacturing industries appears to be weakening over time as compared with the same relationship for all industries. This result could have important implications for regional policy insofar as it could reflect that the relationship between population size and diversification of employment structures for manufacturing industries may have been more influenced by Goverment intervention (perhaps increased regional aid?) than the relationship between the two sets of data at the all industries level.

III CONCLUSIONS

A The Use of Alternative Data Disaggregation

The low level of explanations achieved in this research reflects the poverty of data on variables that was available.

In regards to geographical disaggregated data, the Standard Region spatial units were the only disaggregation available and this limitation seriously hampered the possibility of comparing results obtained from smaller geographical units.

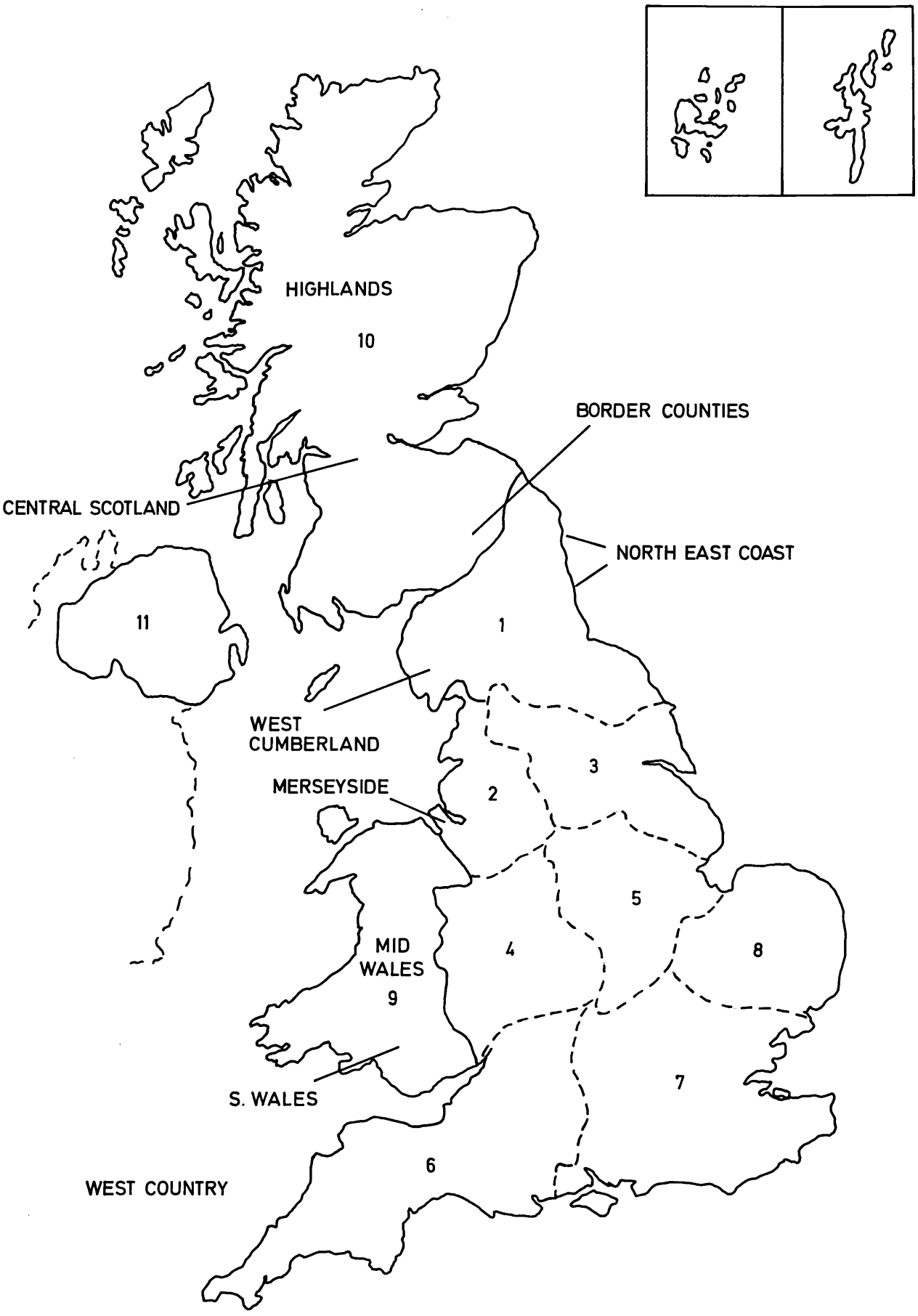
The use of different industrial disaggregation levels (152 MLH and 25 SIC) did yield different results, confirming the proposition that the non uniformity of data does influence the results obtained and therefore can have important consequences for the evaluation of regional policy.

If there is to be a positive conclusion from this work, it is to re-emphasize the need for much better statistical information for geographical units smaller than the Standard Regions. The lack of data is an extremely serious obstacle to any practical study which envisages to analyse the influence of Governmental regional measures upon the industrial structures of the regions of Great Britain.

B Suggestions for Further Investigations

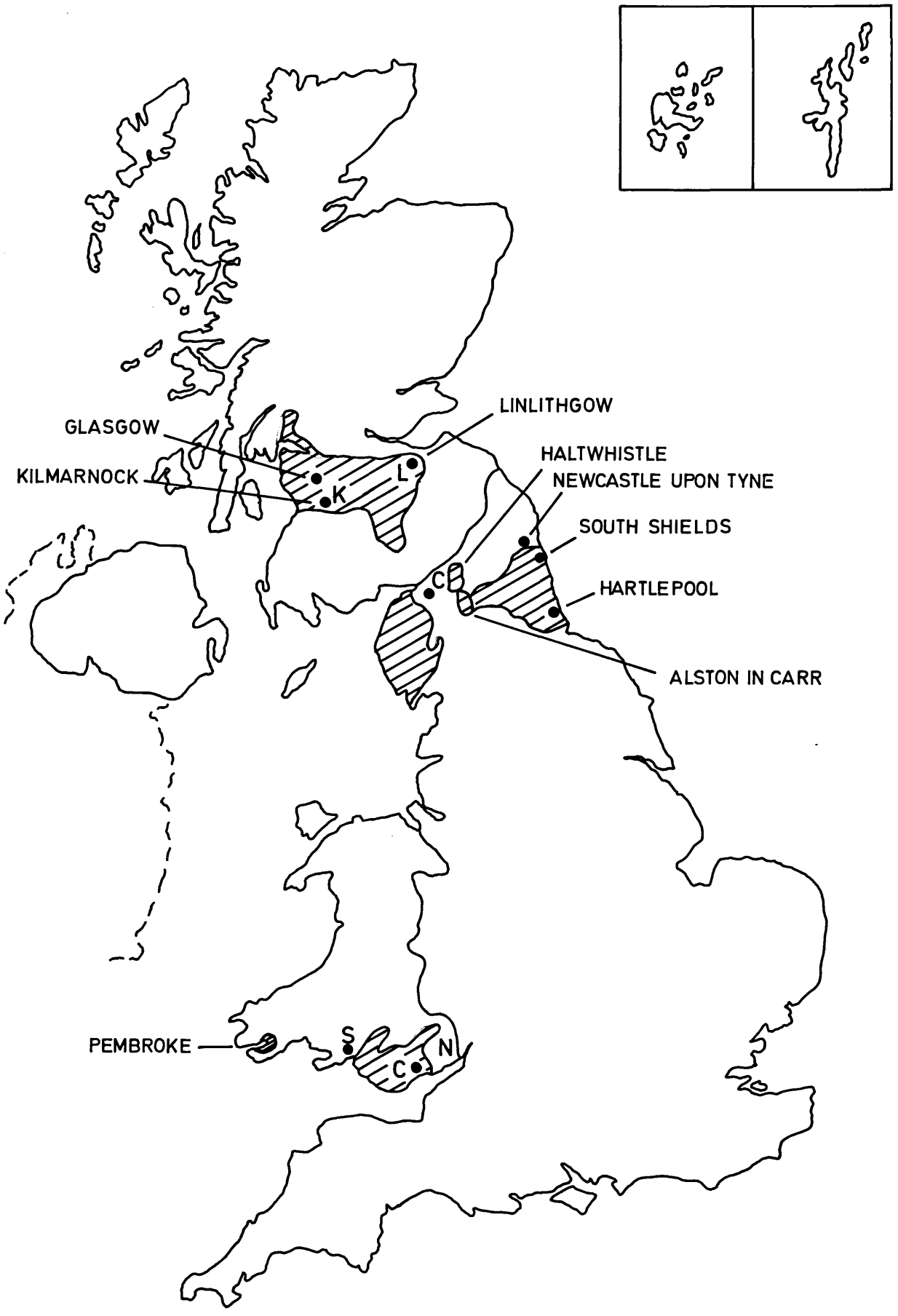
It is further suggested that a complete analysis of the industrial trends in Great Britain at the two levels of industrial disaggregation (152 MLH and 25 SIC) should be attempted at the various geographical disaggregation units in order to determine - if not the most appropriate - at least, a uniform data disaggregation pattern with which regional policy measures and their practical effectiveness may be tested.

MAP A1

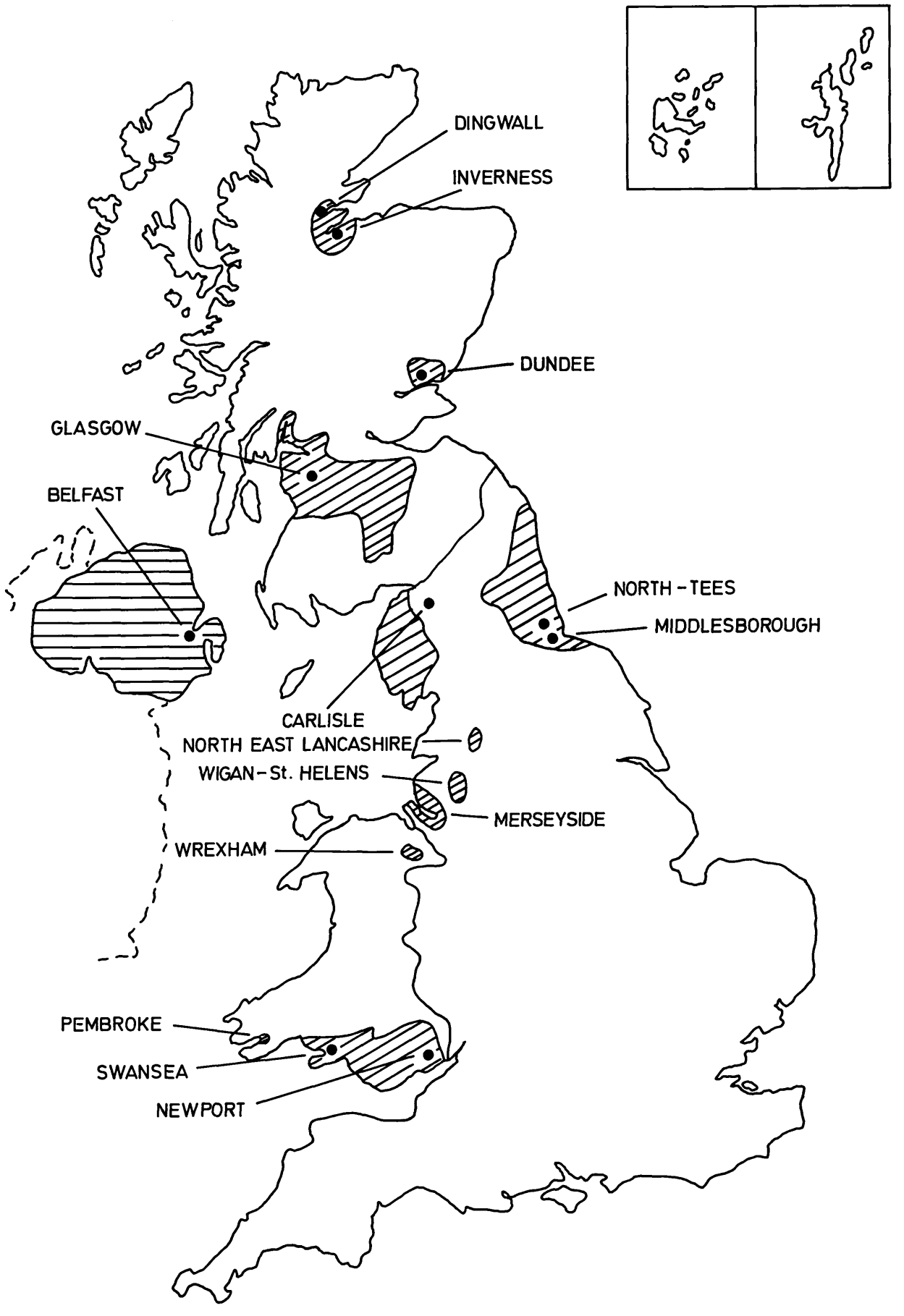


1 NORTHERN REGION
2 NORTH-WEST
3 YORKSHIRE AND HUMBERSIDE
4 WEST MIDLANDS
5 EAST MIDLANDS
6 SOUTH-WEST
7 SOUTH-EAST
8 EAST ANGLIA
9 WALES
10 SCOTLAND
11 NORTHERN IRELAND

MAP A2 THE PRE-WAR SPECIAL AREAS



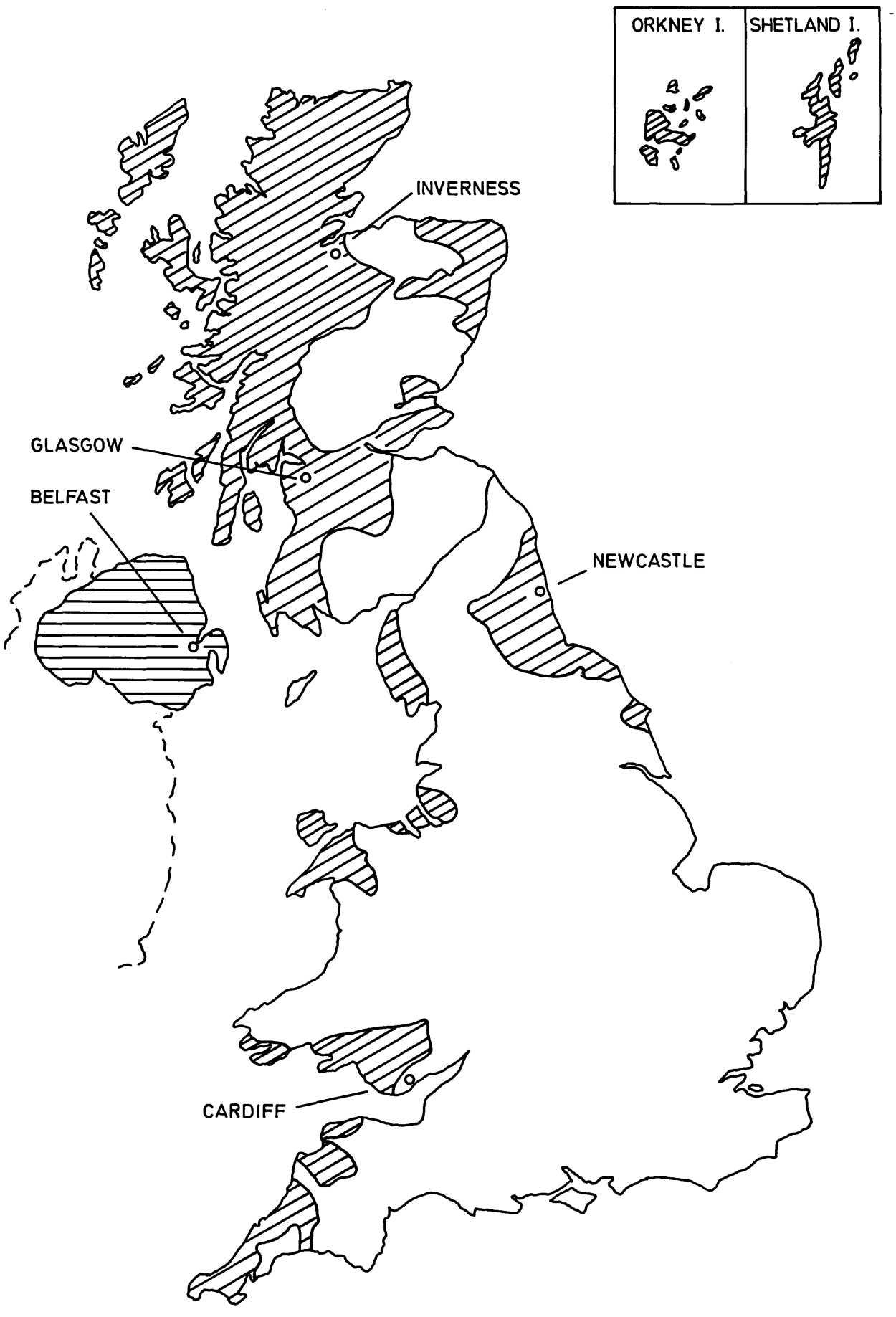
MAP A3 THE DEVELOPMENT AREAS 1945-60



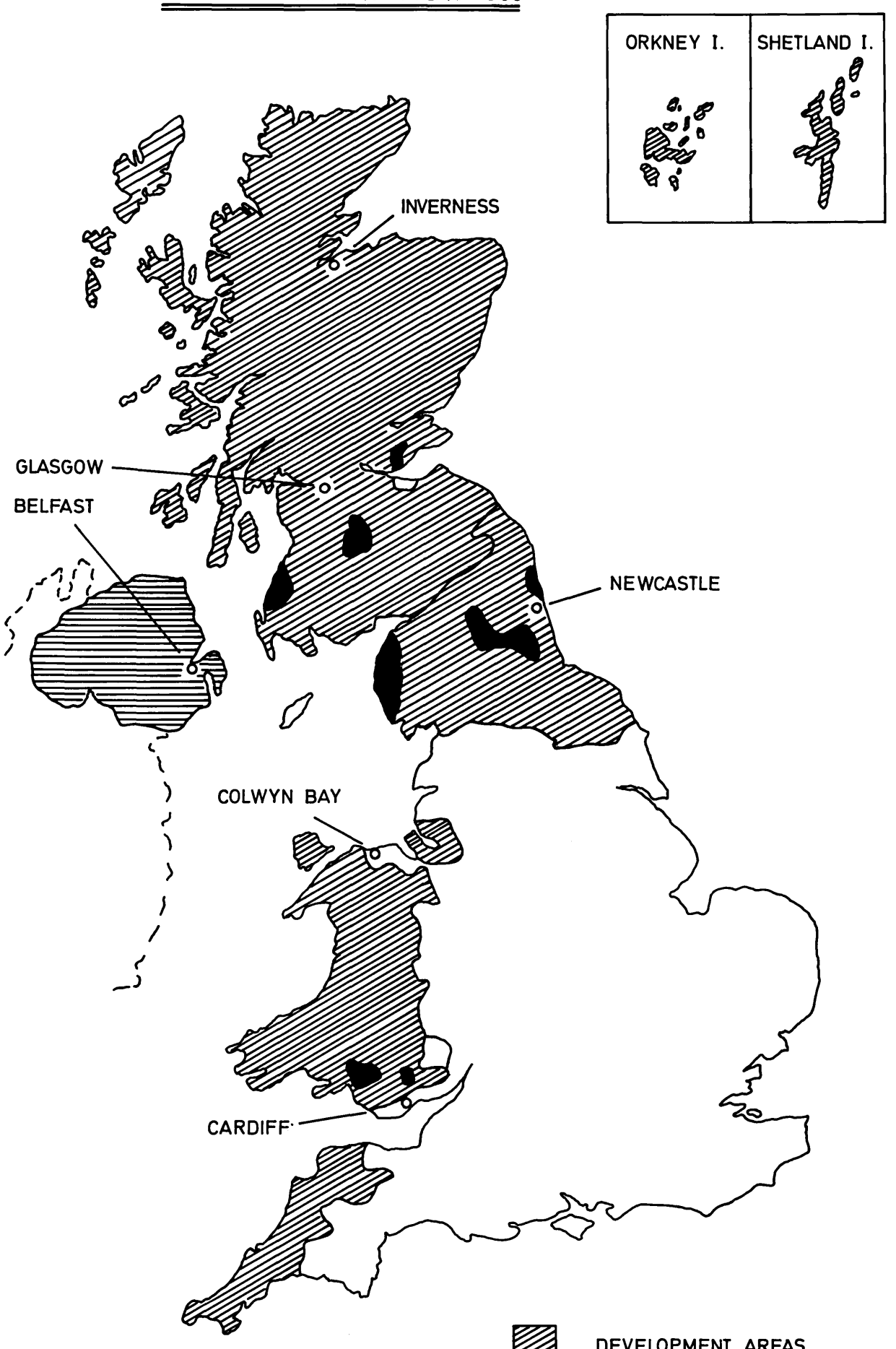
MAP A4: POSTWAR NEW TOWNS

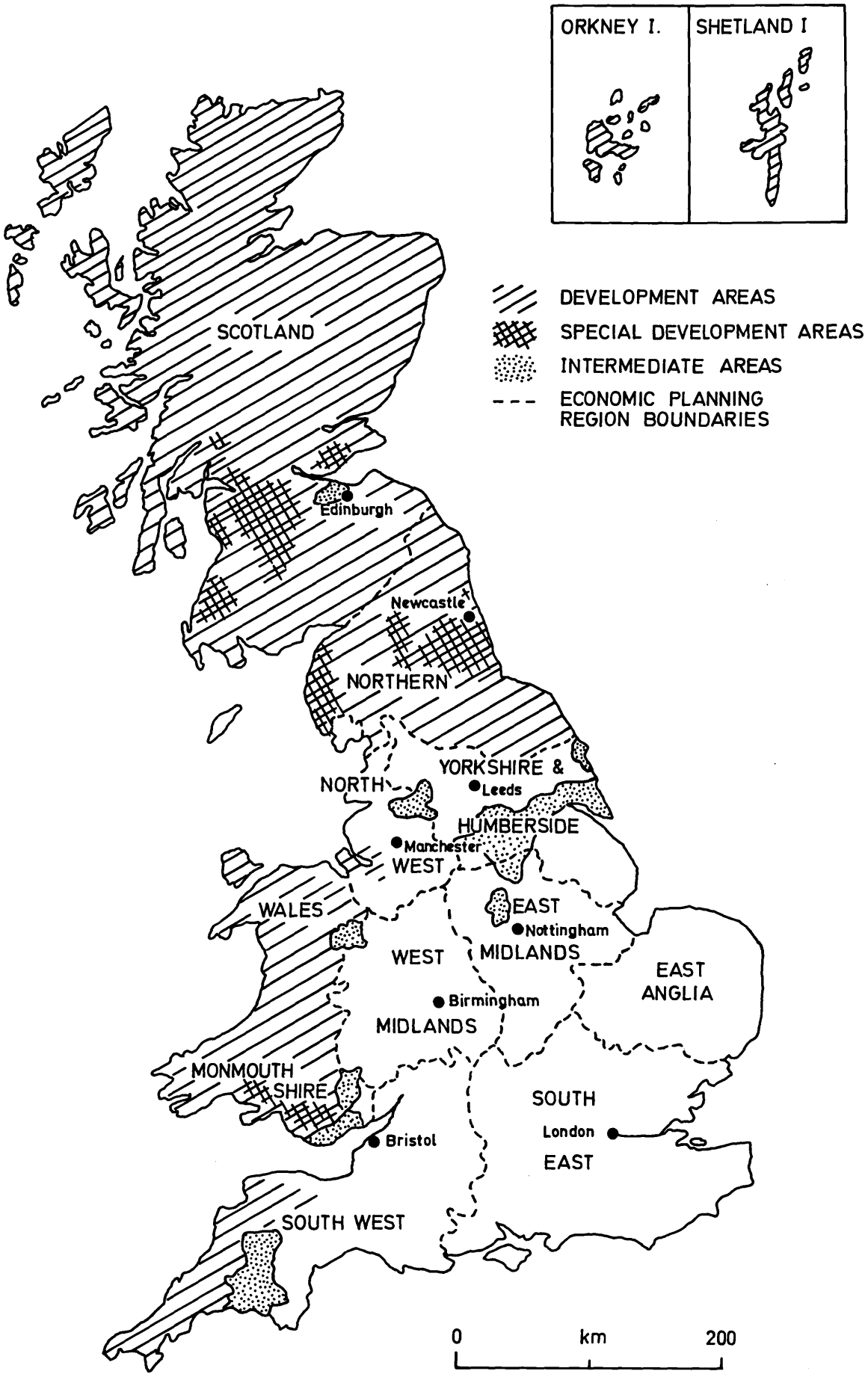
SOURCE: NEWTOWNS - THE BRITISH EXPERIENCE
ESSAYS INTRODUCED BY P. SELP
ED. HAZEL EVANS
CHARLES KNIGHT for the Town & Country Planning Ass.
1972

MAP A5 THE DEVELOPMENT DISTRICTS IN 1960



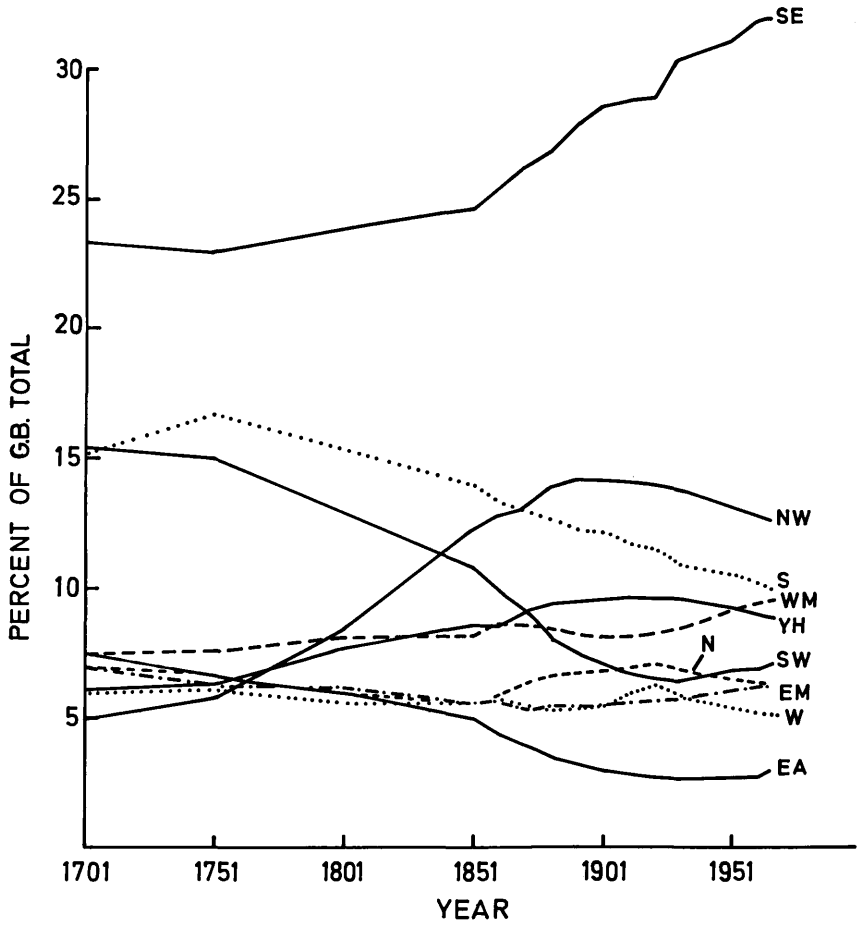
MAP. A6. NEW DEVELOPMENT AREAS 1966





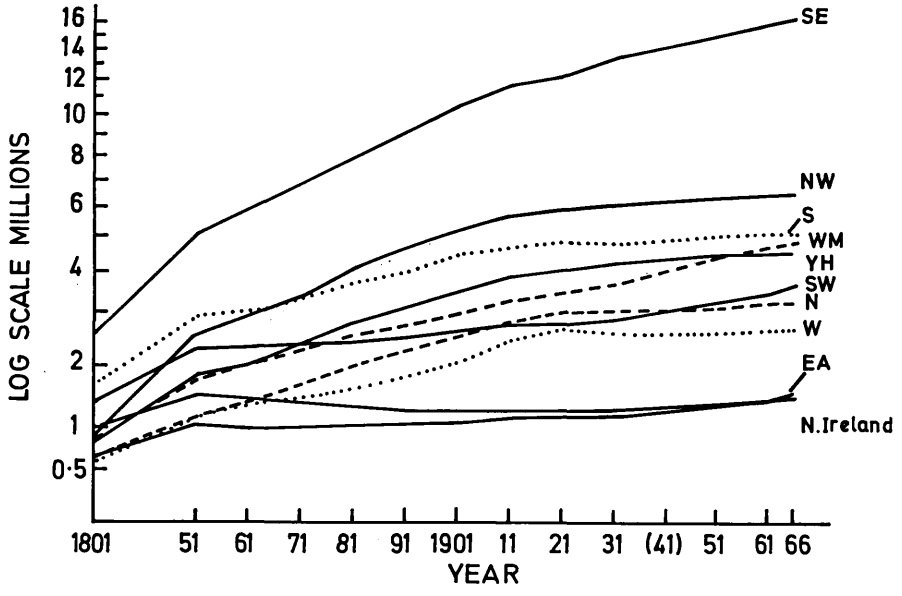
MAP A7. BRITAIN: THE DEVELOPMENT AND INTERMEDIATE AREAS, JANUARY 1971. SOURCE: DEPARTMENT OF TRADE & INDUSTRY.

CHART A1: REGIONAL DISTRIBUTION OF POPULATION (1701-1966).



SOURCE: LEE, C.H; REGIONAL ECONOMIC GROWTH IN THE UNITED KINGDOM SINCE THE 1880's MAIDENHEAD, MCGRAW HILL, 1971

CHART A2: POPULATION BY REGION, 1801-1966.



SOURCES: HAMMOND, AN ANALYSIS OF REGIONAL ECONOMIC AND SOCIAL STATISTICS; LEE, REGIONAL ECONOMIC GROWTH IN THE U.K. SINCE 1880s; MITCHELL AND DEANE, ABSTRACT OF BRITISH HISTORICAL STATISTICS.

TABLE A 2

EMPLOYMENT IN BOARD OF TRADE FACTORIES, 1955/6

	BOT Factory Space 000 sq. ft.	*Numbers Employed*	*Total Insured Employees May 1954 000s*
North-East	11,617	49,000	1,020
South Wales	12,869	63,800	716
Scotland	14,358	62,300	1,194
West Cumberland	1,413	5,500	52
North-West (inc. Merseyside, S. Lancs and NE Lancs	1,271	5,300	857
	41,528	185,900	3,839

Source: Second Report of the Select Committee on Estimates, Session 1955/6: The Development Areas, HMSO.

Source:

Lee, C. H.: Regional Economic Growth in the United Kingdom since the 1880's

Maidenhead, McGraw Hill Co., 1971.

TABLE A 3

GRANTS AND TAX ALLOWANCES UNDER THE LOCAL EMPLOYMENT ACT 1963, THE INDUSTRIAL DEVELOPMENT ACT 1966 AND THE FINANCE ACTS 1963 AND 1966

	Local Employment Act 1963						Industrial Development Act 1966					
	Development Districts			Rest of Great Britain			Development Areas			Rest of Great Britain		
	Grants	Taxation Allowances		Grants	Taxation Allowances		Grants	Taxation Allowances		Grants	Taxation Allowances	
		Investment	Initial		Investment	Initial		Investment	Initial		Investment	Initial
New Plant and Machinery	10%	30%	Free Depreciation	—	30%	10%	40%*	—	—	20%*	—	—
New Building a) Industrial	25%	15%	5%	—	15%	5%	25% (35%)†	—	15%	—	—	15%
b) Non-Industrial	25%	—	—	—	—	—	25% (35%)†	—	—	—	—	—

* Increased by 5% for expenditure between 1st January, 1967 and 31st December, 1968.

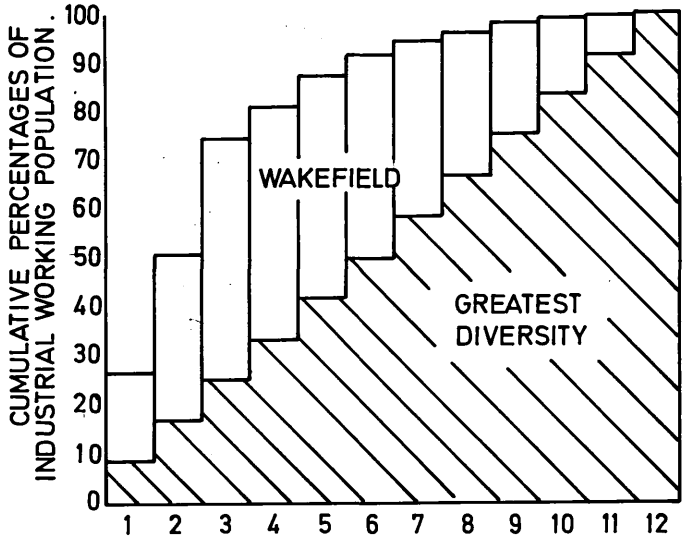
† The extra 10% is given where the Board of Trade considers that new undertakings face problems which justify additional assistance.

Source:

Lee, C. H.: Regional Economic Growth in the United Kingdom since the 1880's
Maidenhead, McGraw Hill Co., 1971.

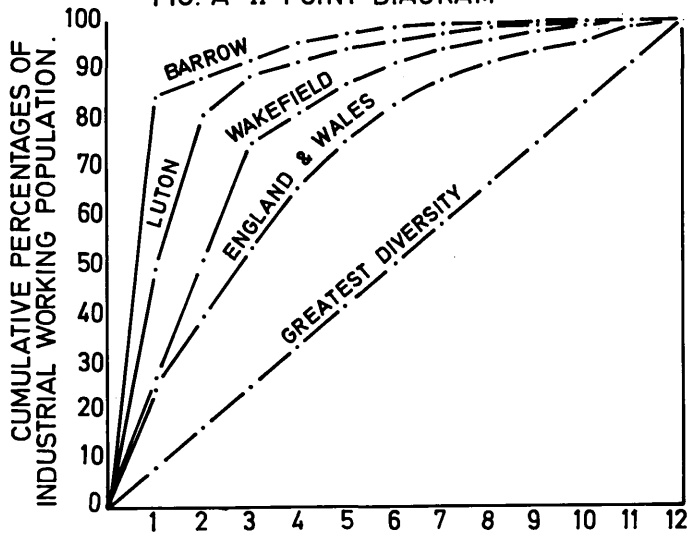
UNEMPLOYMENT AND THE DIVERSIFICATION OF INDUSTRY.

FIG. A-1 BLOCK DIAGRAM



INDUSTRIES ADDED CUMULATIVELY IN ORDER OF DECREASING SIZE.

FIG. A-II POINT DIAGRAM



INDUSTRIES ADDED CUMULATIVELY IN ORDER OF DECREASING SIZE

UNEMPLOYMENT AND THE DIVERSIFICATION OF INDUSTRY.

FIG. A-1 BLOCK DIAGRAM

FIG. A-11 POINT DIAGRAM

APPENDIX B

TABLE B1: LIST OF THE 25 STANDARD INDUSTRIAL CLASSIFICATION (SIC) EMPLOYMENT CATEGORIES

1	Agriculture, forestry, fishing
2	Mining and quarrying
3	Food, drink and tobacco
4	Chemicals and allied industries
5	Metal manufacture
6	Engineering and electrical goods
7	Shipbuilding and marine engineering
8	Vehicles
9	Metal goods not elsewhere specified
10	Textiles
11	Leather, leather goods and fur
12	Clothing and footwear
13	Bricks, pottery, glass, cement, etc.
14	Timber, furniture, etc.
15	Paper, printing and publishing
16	Other manufacturing industries
17	Construction
18	Gas, electricity and water
19	Transport and communication
20	Distributive trades
21	Insurance, banking and finance
22	Professional and scientific services
23	Miscellaneous services
24	Public administration
25	Persons not qualified by industry

TABLE B2: LIST OF THE 152 MINIMUM LIST HEADINGS (MLH) EMPLOYMENT CATEGORIES

1	Agriculture and horticulture
2	Forestry
3	Fishing
4	Coal mining
5	Stone and slate quarrying and mining
6	Chalk, clay, sand and gravel extraction
7	Other mining and quarrying
8	Grain milling
9	Bread and flour confectionery
10	Biscuits
11	Bacon curing, meat and fish products
12	Milk products
13	Sugar
14	Cocoa, chocolate and sugar confectionery
15	Fruit and vegetable products
16	Animal and poultry foods
17	Food industries not elsewhere specified
18	Brewing and malting
19	Other drink industries
20	Tobacco
21	Coke ovens and manufactured fuels
22	Mineral oil refining
23	Lubricating oil and greases
24	Chemicals and dyes and explosives and fireworks
25	Pharmaceutical and toilet preparations
26	Paint and printing ink
27	Vegetable and animal oils, fats, soaps and detergents
28	Synthetic resins and plastic materials
29	Polishes, gelatines, adhesives, etc.
30	Iron and steel (General)
31	Steel tubes
32	Iron casting, etc.
33	Light metals
34	Copper, brass and other base metals
35	Agricultural machinery (except tractors)
36	Metal-working machine tools
37	Engineers' small tools and gauges
38	Industrial engines
39	Textile machinery and accessories

TABLE B 2: (continued)

40	Contractors' plant and quarrying machinery
41	Mechanical handling equipment
42	Office machiner
43	Other machinery
44	Industrial plant and steelwork
45	Ordnance and small arms and other mechanical engineering not elsewhere specified
46	Scientific, surgical and photographic instruments, etc.
47	Watches and clocks
48	Electrical machinery
49	Insulated wires and cables
50	Telegraph and telephone apparatus
51	Radio and other electronic apparatus
52	Domestic electric appliances
53	Other electrical goods
54	Shipbuilding and ship repairing
55	Marine Engineering
56	Motor vehicle manufacturing
57	Motor cycle, three-wheeled vehicle and pedal cycle manufacturing
58	Aircraft manufacturing and repairing
59	Locomotives and railway track equipment
60	Railways, carriages and wagons and trams
61	Perambulators, hand-trucks, etc.
62	Tools and implements
63	Cutlery
64	Bolts, nuts, screws, rivets, etc.
65	Wire and wire manufactures
66	Cans and metal boxes
67	Jewellery, plate and refining of precious metals
68	Metal industries not elsewhere specified
69	Production of man-made fibres
70	Spinning and doubling of cotton, flax and man-made fibres
71	Weaving of cotton, linen and man-made fibres
72	Woollen and worsted
73	Jute
74	Rope, twine and net
75	Hosiery and other knitted goods
76	Lace
77	Carpets

TABLE B 2 (continued)

78	Narrow fabrics
79	Made-up textiles
80	Textile finishing
81	Other textile industries
82	Leather (tanning and dressing) and fellmongery
83	Leather goods
84	Fur
85	Weatherproof outer wear
86	Men's and boys' tailored outerwear
87	Women's and girls' tailored outerwear
88	Overalls and men's shirts, underwear, etc.
89	Dresses, lingerie, infants' wear, etc.
90	Hats, caps and millinery
91	Dress industries not elsewhere specified
92	Footwear
93	Bricks, fireclay and refractory goods
94	Pottery
95	Glass
96	Cement
97	Abrasives and building materials, etc. not elsewhere specified
98	Timber
99	Furniture and upholstery
100	Bedding, etc.
101	Shop and office fittings
102	Wooden containers and baskets
103	Miscellaneous wood and cork manufactures
104	Paper and Board
105	Cardboard boxes, cartons and fibre-board packing cases
106	Manufactures of paper and board not elsewhere specified
107	Printing, publishing of newspapers and periodicals
108	Other printing, publishing, bookbinding, engraving, etc.
109	Rubber
110	Linoleum, leather cloth, etc.
111	Brushes and brooms
112	Toys, games and sports equipment
113	Miscellaneous stationers' goods
114	Plastics moulding and fabricating
115	Miscellaneous manufacturing industries
116	Construction

TABLE B 2: (continued)

117	Gas
118	Electricity
119	Water supply
120	Railways
121	Road passenger transport
122	Road haulage contracting
123	Sea transport
124	Port and inland water transport
125	Air transport
126	Postal services and telecommunications
127	Miscellaneous transport services and storage
128	Wholesale distribution
129	Retail distribution
130	Dealing in coal, builders' materials, grain and agricultural supplies (wholesale or retail)
131	Dealing in other industrial materials and machinery
132	Insurance, banking and finance
133	Accountancy services
134	Educational services
135	Legal services
136	Medical and dental services
137	Religious organisations
138	Other professional and scientific services
139	Cinemas, theatres, radio, etc.
140	Sport and other recreations
141	Betting
142	Catering, hotels, etc.
143	Laundries
144	Dry cleaning, jobdyeing, carpet beating, etc.
145	Motor repairers, distributors, garages and filling stations
146	Repair of boots and shoes
147	Hairdressing and manicure
148	Private domestic service
149	Other services
150	National government service
151	Local government service
152	Persons not qualified by industry

TABLE B 3: PROCEDURE PAGE

MINIMUM AND MAXIMUM RANGE OF THE TRESS INDICES WHEN CONSIDERING THE 25 STANDARD INDUSTRIAL CLASSIFICATION (SIC) EMPLOYMENT CATEGORIES

On page 141 the procedures to calculate the Tress indices - both the crude diversity index and the refined diversity index - have been explained. Furthemore, the interpretation of the results obtained as well as the alternative data disaggregation used for the calculations have been analysed in the general context of the British regional unemployment policy measures.

It is important, however, to add here further information regarding the calculation of the range within which the Tress indices may fluctuate - from the hypothetical situations of complete diversification to complete specialisation of industrial employment.

RANGE OF THE CRUDE TRESS INDICES FOR MANUFACTURING INDUSTRIES ONLY FOR THE 25 SIC EMPLOYMENT CATEGORIES

(a) Assuming complete diversification of industrial employment the greatest possible diversity would be reached when each of the fourteen manufacturing industries engaged the same proportion of people, i.e. 100/14 per cent, which is equal to 7.14 per cent. Thus, in this situation, 7.14 per cent of the working population would work in each of the fourteen manufacturing industries. Adding up the progressive totals for each industrial category the crude index figure of 750.00 is obtained;

(b) Assuming complete specialisation of industrial employment - the greatest possible specialisation would occur when the total of the working population of a certain region were engaged in just one industry in this way, the first progressive total, and each subsequent one would be 100. As we are considering the fourteen manufacturing industries for the 25 SIC employment

TABLE B 3: (continued)

(b) categories, the crude index yielded is 1400.00.

RANGE OF THE TRESSINDICES FOR ALL INDUSTRIES FOR THE 25 SIC employment CATEGORIES:

(a) Assuming complete diversification of industrial employment - To calculate the Tress index for all industries in complete diversification, the same procedure is used as when calculating the index only for the manufacturing industries. Thus, if the 25 industries of a certain region were to engage the same number of people, 4.00 per cent of the working population of an area would be equally divided in each industrial category. Adding up the progressive totals for each industry, the crude index of 1300.00 is obtained.

(b) Assuming complete specialisation of industrial employment - Considering the 25 industries of an area with the total working population concentrated in just one industry, the first progressive total, and each subsequent one would be 100. The Tress crude index for complete specialisation of all industries would then be 2500.00.

The Tress indices calculated for the Standard Economic Planning regions in Great Britain - as well as for mainland Britain as a whole - for the 25 SIC employment categories are thus compared to these crude indices for complete specialisation in order to determine whether a certain area has tended towards the process of diversifying or specialising its industrial employment structure.

TABLE B 4: CALCULATION OF THE TRESS INDICES FOR GREAT BRITAIN FOR THE 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area. Only manuf.	Employment in industry in area as a percentage of total employment in area. All industries	Percentage ranked (from highest to lowest) Only manuf.	Percentage ranked (from highest to lowest) All industries	Sum of the accumulated percentages Only manuf.	Sum of the accumulated percentages All industries
1	654,880		2.9944		12.5353		12.5353
2	838,010		3.8318		9.1657		21.7010
3	797,960	9.4585	3.6487	22.8725	8.8231	22.8725	30.5241
4	521,980	6.1872	2.3867	10.2731	8.8167	33.1456	39.3408
5	582,190	6.9009	2.6620	10.1334	7.5596	43.2790	46.9004
6	1,929,620	22.8725	8.8231	9.4585	6.5576	52.7375	53.4580
7	280.840	3.3289	1.2841	6.9009	5.7701	59.6384	59.2281
8	866,680	10.2731	3.9629	6.7990	3.9629	66.4374	63.1910
9	513,400	6.0855	2.3475	6.5623	3.9090	72.9997	67.1000
10	854,900	10.1334	3.9090	6.1872	3.8318	79.1869	70.9318
11	64,080	0.7596	0.2930	6.0855	3.6487	85.2724	74.5805
12	553,620	6.5623	2.5314	3.9089	2.9944	89.1813	77.5749
13	329,770	3.9089	1.5079	3.3760	2.6620	92.5573	80.2369
14	284,810	3.3760	1.3023	3.3544	2.6227	95.9117	82.8596
15	573,590	6.7990	2.6227	3.3289	2.5314	99.2406	85.3910
16	282,990	3.3544	1.2940	0.7596	2.4271	100.0002	87.8181
otal Man-ufacturing	8,436,430	100.0002		100.0002		992.4605	
17	1,434,150		6.5576		2.3867		90.2048
18	377,650		1.7268		2.3475		92.5523
19	1,693,280		7.5596		1.7268		94.2791
20	2,741,460		12.5353		1.5079		95.7870
21	530,800		2.4271		1.3023		97.0893
22	1,928,210		8.8167		1.2940		98.3833
23	2,004,540		9.1657		1.2841		99.6674
24	1,261,920		5.7701		0.2930		99.9604
25	8,670		0.0396		0.0396		100.0000
Grand Total	21,870,000		100.0000		100.0000		1821.30

SOURCE OF DATA: Ministry of Labour Gazette, May 1960

TABLE B 5: CALCULATION OF THE TRESS INDICES FOR THE SOUTH EAST FOR THE 25 SiC END MAY 1959

SiC	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area.		Percentage ranked (from highest to lowest)		Sum of the accumulated percentages	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	73,610		1.3401		14.3581		14.3581
2	15,160		0.2760		12.8647		27.2228
3	184,550	10.2489	3.3597	30.5679	10.0206	30.5679	37.2434
4	125,630	6.9768	2.2871	12.5919	9.2618	43.1598	46.5052
5	33,450	1.8576	0.6090	10.2489	8.8888	53.4087	55.3940
6	550,430	30.5679	10.0206	7.8892	6.9139	61.2979	62.3079
7	23,310	1.2945	0.4244	7.7776	6.4447	69.0755	68.7526
8	140,050	7.7776	2.5496	6.9768	4.9705	76.0523	73.7331
9	91,940	5.1058	1.6738	5.1364	4.1278	81.1887	77.8509
10	28,190	1.5655	0.5132	5.1058	3.3597	86.2945	81.2106
11	19,040	1.0574	0.3466	4.8204	2.5862	91.1149	83.7968
12	142,060	7.8892	2.5862	3.1099	2.5496	94.2248	86.3464
13	56,000	3.1099	1.0195	1.8576	2.2871	96.0824	88.6334
14	92,490	5.1364	1.6838	1.5655	1.8729	97.6479	90.5063
15	226,740	12.5919	4.1278	1.2945	1.6838	98.9424	92.1901
16	86,800	4.8204	1.5802	1.0574	1.6738	99.9998	93.8639
Total manu-facturing	1,800,680	99.9998		99.9998		1079.06	
17	354,010		6.4447		1.5802		95.4441
18	102,880		1.8729		1.3401		96.7842
19	488,260		8.8888		1.0195		97.8037
20	788,690		14.3581		0.6090		98.4127
21	273,030		4.9705		0.5132		98.9259
22	508,750		9.2618		0.4244		99.3503
23	706,660		12.8647		0.3466		99.6969
24	379,780		6.9139		0.2760		99.9729
25	1,490		0.0271		0.0271		100.0000
Grand total	5,493,000		100.0000		100.0000		1966.29

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B 6: CALCULATION OF THE TRESS INDICES FOR THE SOUTH WEST FOR THE 25 SiC — END MAY 1959

SiC	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area. Only manuf.	Employment in industry area as a percentage of total employment in area. All industries	Percentage ranked (from highest to lowest) Only manuf.	Percentage ranked (from highest to lowest) All industries	Sum of the accumulated percentages Only manuf.	Sum of the accumulated percentages All industries
1	72,490		5.9565		13.2005		13.2005
2	18,890		1.5522		11.3566		24.5571
3	58,160	15.7062	4.7790	21.8282	10.6261	21.8282	35.1832
4	10,360	2.7977	0.8513	19.7435	8.1446	41.5717	43.3278
5	5,110	1.3800	0.4199	15.7062	7.6113	57.2779	50.9391
6	73,110	19.7435	6.0074	8.9306	7.3451	66.2085	58.2842
7	22,340	6.0329	1.8357	6.2733	6.6417	72.4818	64.9259
8	80,830	21.8282	6.6417	6.0329	6.0074	78.5147	70.9333
9	7,370	1.9903	0.6056	4.1912	5.9565	82.7059	76.8898
10	13,600	3.6727	1.1175	3.8941	4.7790	86.6000	81.6688
11	3,710	1.0019	0.3048	3.6727	2.7173	90.2727	84.3861
12	23,230	6.2733	1.9088	2.7977	1.9786	93.0704	86.3647
13	9,470	2.5574	0.7781	2.5574	1.9088	95.6278	88.2735
14	15,520	4.1912	1.2753	1.9903	1.8357	97.6181	90.1092
15	33,070	8.9306	2.7173	1.3800	1.7387	98.9981	91.8479
16	14,420	3.8941	1.1849	1.0019	1.5522	100.0000	93.4001
Total manufacturing	370,300	100.0000		100.0000		1082.78	
17	99,120		8.1446		1.2753		94.6754
18	24,080		1.9786		1.1849		95.8603
19	92,630		7.6113		1.1175		96.9778
20	160,650		13.2005		0.8513		97.8291
21	21,160		1.7387		0.7781		98.6072
22	129,320		10.6261		0.6056		99.2128
23	138,210		11.3566		0.4199		99.6327
24	89,390		7.3451		0.3048		99.9375
25	760		0.0625		0.0625		100.0000
Grand Total	1,217,000		100.0000		100.0000		1937.02

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B 7: CALCULATION OF THE TRESS INDICES FOR EAST ANGLIA FOR THE 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area.		Percentage ranked (from highest to lowest)		Sum of the accumulated percentages	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	160,330		6.9317		12.1971		12.1971
2	4,910		0.2123		11.345		23.5421
3	83,450	10.5192	3.6079	27.1054	10.2823	27.1054	33.8244
4	44,740	5.6397	1.9343	18.4089	9.2966	45.5143	43.1210
5	19,370	2.4417	0.8374	10.5192	7.6926	56.0335	50.8136
6	215,030	27.1054	9.2966	8.6271	6.9317	64.6606	57.7453
7	38,100	4.8027	1.6472	5.6750	6.7756	70.3356	64.5209
8	146,040	18.4089	6.3139	5.6397	6.5469	75.9753	71.0678
9	23,800	3.0001	1.0290	5.3094	6.3139	81.2847	77.3817
10	15,060	1.8984	0.6511	4.8027	3.6079	86.0874	80.9896
11	3,120	0.3933	0.1349	3.5825	2.9589	89.6699	83.9485
12	45,020	5.6750	1.9464	3.2270	1.9464	92.8969	85.8949
13	28,420	3.5825	1.2287	3.0001	1.9343	95.8970	87.8292
14	42,120	5.3094	1.8210	2.4417	1.8357	98.3387	89.6649
15	68,440	8.6271	2.9589	1.8984	1.8210	100.2371	91.4559
16	25,600	3.2270	1.1068	0.3933	1.6472	100.6304	93.1331
Total manu-facturing	793,310	100.6304		100.6304		1084.67	
17	177,930		7.6926		1.6131		94.7462
18	42,460		1.8357		1.2287		95.9749
19	151,430		6.5469		1.1068		97.0817
20	282,120		12.1971		1.0290		98.1107
21	37,310		1.6131		0.8374		98.9481
22	262,410		11.3450		0.6511		99.5992
23	237,830		10.2823		0.2123		99.8115
24	156,720		6.7756		0.1349		99.9464
25	1,240		0.0536		0.0536		100.0000
Grand Total	2,313,000		100.0000		100.0000		1931.38

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B 8: CALCULATION OF THE TRESS INDICES FOR THE EAST MIDLANDS FOR THE 25 SIC END OF MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area.		Percentage ranked (from highest to lowest)		Sum of the accumulated percentages	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	69,870		4.6580		11.0227		11.0227
2	129,740		8.6493		8.7827		19.8054
3	53,500	8.4544	3.5667	20.8183	8.6493	20.8183	28.4547
4	22,940	3.6251	1.5293	17.8553	7.5660	38.6736	36.0207
5	57,380	9.0675	3.8253	13.8604	7.5327	52.5340	43.5534
6	131,740	20.8183	8.7827	9.6364	6.2653	62.1704	49.8187
7	3,100	0.4899	0.2067	9.0675	6.1440	71.2379	55.9627
8	60,980	9.6364	4.0653	8.4544	6.0467	79,6923	62.0094
9	16,160	2.5537	1.0773	4.0960	5.8473	83.7883	67.8567
10	112,990	17.8553	7.5327	3.9127	4.7087	87.7010	72.5654
11	5,220	0.8249	0.3480	3.6251	4.6580	91.3261	77.2234
12	87,710	13.8604	5.8473	2.6896	4.0653	94.0157	81.2887
13	25,920	4.0960	1.7280	2.5537	3.8253	96.5694	85.1140
14	17,020	2.6896	1.1347	2.1160	3.5667	98.6857	88.6807
15	24,760	3.9127	1.6507	0.8249	1.7280	99.5103	90.4087
16	13,390	2.1160	0.8927	0.4899	1.6507	100.0002	92.0594
Total manufacturing	632,810	100.0002		100.0002		1076.72	
17	93,980		6.2653		1.5293		93.5887
18	22,350		1.4900		1.4900		95.0787
19	90,700		6.0467		1.2407		96.3194
20	165,340		11.0227		1.1347		97.4541
21	18,610		1.2407		1.0773		98.5314
22	113,490		7.5660		0.8927		99.4241
23	92,160		6.1440		0.3480		99.2721
24	70,630		4.7087		0.2067		99.9788
25	320		0.0212		0.0212		100.0000
Grand Total	1,500,000		100.0000		190.0000		1842.50

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B 9: Calculation of the TRESS INDICES for the WEST MIDLANDS for the 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area		Percentage ranked (from highest to lowest0		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	49,320		2.2993		12.1809		12.1809
2	68,120		3.1758		10.1301		22.3110
3	69,890	6.0992	3.2583	22.8017	9.8117	22.8017	32.1237
4	26,920	2.3493	1.2550	18.9627	9.1576	41.7644	41.2803
5	135,230	11.8014	6.3044	17.1423	7.3543	58.9067	48.6346
6	261,280	22.8017	12.1809	11.8014	6.3044	70.7081	54.9390
7	360	0.0314	0.0167	7.5139	6.1907	78.2220	61.1297
8	217,290	18.9627	10.1301	6.0992	5.5664	84.3212	66.6961
9	196,430	17.1423	9.1576	3.2377	4.7594	87.5589	71.4555
10	37,100	3 2377	1.7296	3.2255	4.5534	90.7844	76.0089
11	6,390	0.5577	0.2979	2.5378	4.0140	93.3222	80.0229
12	21,960	1.9164	1.0238	2.3493	3.2583	95.6715	83.2812
13	86,100	7.5139	4.0140	1.9164	3.1758	97.5879	86.4570
14	20,890	1.8231	0.9739	1.8231	2.2993	99.4110	88.7563
15	29,080	2.5378	1.3557	0.5577	1.7296	99.9687	90.4859
16	36,960	3.2255	1.7231	0.0314	1.7231	100.0001	92.2090
Total manu-facturing	1,145,880	100.0001		100.0001		1121.03	
17	119,400		5.5664		1.6247		93.8337
18	34,850		1.6247		1.3557		95.1894
19	102,090		4.7594		1.2550		96.4444
20	210,460		9.8117		1.2298		97.6742
21	26,380		1.2298		1.0238		98.6980
22	157,750		7.3543		0.9739		99.6719
23	132,790		6.1907		0.2979		99.9698
24	97,670		4.5534		0.0167		99.9865
25	290		0.0135		0.0135		100.0000
Grand Total	2,145,000		100.0000		100.0000		1889.44

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B 10: CALCULATION OF THE TRESS INDICES FOR YORKSHIRE AND HUMBERSIDE FOR THE 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	34,520		1.8690		11.6172		11.6172
2	146,100		7.9101		10.9962		22.6134
3	66.700	8.1404	3.6113	24.7873	7.9101	24.7873	30.5235
4	39,460	4.8159	2.1364	17.1778	7.7201	41.9651	38.2436
5	91,700	11.1915	4.9648	11.1915	7.6205	53.1566	45.8641
6	140,750	17.1778	7.6205	8.1404	6.7401	61.2970	52.6042
7	6,720	0.8201	0.3638	7.8939	6.5143	69.1909	59.1185
8	44,860	5.4749	2.4288	7.4313	5.5528	76.6222	64.6713
9	64,680	7.8939	3.5019	5.4749	4.9648	82.0971	69.6361
10	203,100	24.7873	10.9962	4.8159	4.3503	86.9130	73.9864
11	6,350	0.7750	0.3438	3.8920	3.6113	90.8050	77.5977
12	60,890	7.4313	3.2967	3.7273	3.5019	94.5323	81.0996
13	30,540	3.7273	1.6535	2.6972	3.2967	97.2295	84.3963
14	22,100	2.6972	1.1965	1.1753	2.4288	98.4048	86.8251
15	31,890	3.8920	1.7266	0.8201	2.1364	99.2249	88.9615
16	9,630	1.1753	0.5214	0.7750	1.8690	99.9999	90.8305
Total manufacturing	819,370	99.9999		99.9999		1076.23	
17	102,560		5.5528		1.7688		92.5993
18	32,670		1.7688		1.7266		94.3259
19	124490		6.7401		1.6535		95.9794
20	214,570		11.6172		1.5593		97.5387
21	28,800		1.5593		1.1965		98.7352
22	142,590		7.7201		0.5214		99.2566
23	120,320		6.5143		0.3638		99.6204
24	80,350		4.3503		0.3438		99.9642
25	660		0.0358		0.0358		100.0000
rand Total	1,847,000		100.0000		100.0000		1856.61

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B 11: CALCULATION OF THE TRESS INDICES FOR THE NORTH FOR THE 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	36,580		2.8182		13.0416		13.0416
2	169,280		13.0416		11.6402		24.6818
3	34,720	7.8031	2.6749	22.4722	7.9153	22.4722	32.5971
4	58,400	13.1251	4.4992	14.4645	7.7034	36.9367	40.3005
5	57,060	12.0239	4.3960	13.1251	7.6148	50.0618	47.9153
6	99,990	22.4722	7.7034	12.8239	7.1857	62.8857	55.1010
7	64,360	14.4645	4.9587	7.8031	6.9106	70.6888	62.0116
8	16,560	3.7218	1.2758	6.5333	5.7589	77.2221	67.7705
9	11,610	2.6093	0.8945	4.0387	4.9584	81.2608	72.7269
10	17,970	4.0387	1.3844	3.7218	4.4992	84.9826	77.2281
11	2,790	0.6270	0.2149	3.4903	4.3960	88.4729	81.6241
12	29,070	6.5333	2.2396	3.1936	2.8182	91.6665	84.4423
13	15,530	3.4903	1.1965	2.8430	2.6749	94.5095	87.1172
14	12,650	2.8430	0.9746	2.6093	2.2396	97.1188	89.3568
15	14,210	3.1936	1.0948	2.2542	1.5077	99.3730	90.8645
16	10,030	2.2542	0.7727	0.6270	1.3844	100.0000	92.2489
Total manufacturing	444,950	100.0000		100.0000		1057.65	
17	89,700		6.9106		1.2843		93.5332
18	19,570		1.5077		1.2758		94.8090
19	93,270		7.1857		1.1965		96.0055
20	151,090		11.6402		1.0948		97.1003
21	16.670		1.2843		0.9746		98.0749
22	98,840		7.6148		0.8945		98.9694
23	102,740		7.9153		0.7727		99.7421
24	74,750		5.7589		0.2149		99.9570
25	560		0.0430		0.0430		100.0000
Grand Total	1,298,000		100.0000		100.0000		1897.22

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B 12: CALCULATION OF THE TRESS INDICES FOR THE NORTH WEST FOR THE 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	27,380		0.9247		12.6667		12.6667
2	60,460		2.0419		10.2925		22.9592
3	128,440	9.1883	4.3377	21.8019	9.0534	21.8019	32.0126
4	130,720	9.3514	4.4147	19.1772	8.4144	40.9791	40.4270
5	42,360	3.0303	1.4306	9.3514	7.6035	50.3305	48.0305
6	268,070	19.1772	9.0534	9.1883	7.4715	59.5188	55.5020
7	42,880	3.0675	1.4482	7.3520	5.5535	66.8708	61.0555
8	102,770	7.3520	3.4708	7.1960	4.5478	74.0668	65.6033
9	52,870	3.7822	1.7855	5,7595	4.4147	79.8263	70.0180
10	304,760	21.8019	10.2925	4.0634	4.3377	83.8897	74.3557
11	10,930	0.7819	0.3691	3.7822	3.4708	87.6719	77.8265
12	100,590	7.1960	3.3972	3.2922	3.3972	90.9641	81.2237
13	46,020	3.2922	1.5542	3.0675	2.7190	94.0316	83.9427
14	30,140	2.1562	1.0179	3.0303	2.0419	97.0619	85.9846
15	80,510	5.7595	2.7190	2.1562	1.9183	99.2181	87.9029
16	56,800	4.0634	1.9183	0.7819	1.8923	100.0000	89.7952
otal all manu-acturing	1,397,860	100.0000		100.0000		1046.23	
17	164,440		5.5535		1.7855		91.5807
18	48,490		1.6376		1.6376		93.2183
19	249,150		8.4144		1.5542		94.7725
20	375,060		12.6667		1.4482		96.2207
21	56,030		1.8923		1.4306		97.6513
22	221,230		7.4715		1.0179		98.6692
23	225,140		7.6035		0.9247		99.5939
24	134,660		4.5478		0.3691		99.9630
25	1,100		0.0370		0.0370		100.0000
rand Total	2,961,000		100.0000		100.0000		1860.98

Source of Data: Ministry of Labour Gazette, May 1960.

TABLE B. 13 CALCULATION OF THE TRESS INDICES FOR SCOTLAND FOR THE 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	103,890		4.8434		13.6541		13.6541
2	101,490		4.7315		9.5907		23.2448
3	96.970	13.0793	4.5207	19.8044	8.3002	19.8044	31.5450
4	36,590	4.9353	1.7058	14.2797	8.0741	34.0841	39.6191
5	56,500	7.6207	2.6340	13.0793	7.5650	47.1634	47.1841
6	146,830	19.8044	6.8452	9.8354	6.8452	56.9988	54.0293
7	72,920	9.8354	3.3995	7.6207	5.3809	64.6195	59.4103
8	41,680	5.6218	1.9431	7.5371	4.9357	72.1566	64.3459
9	27,750	3.7429	1.2937	2.6218	4.8434	77.7784	69.1893
10	105,870	14.2797	4.9357	4.9353	4.7315	82.7137	73.9208
11	4,440	0.5989	0.2070	4.0977	4.5207	86.8114	78.4415
12	30,380	4.0977	1.4163	3.7429	3.3995	90.5543	81.8410
13	22,210	2.9957	1.0354	3.4354	2.6340	93.9897	84.4750
14	25,470	3.4354	1.1874	2.9957	2.6051	96.9854	87.0801
15	55,880	7.5371	2.6051	2.4157	1.9431	99.4011	89.0232
16	17,910	2.4157	0.8350	0.5989	1.8140	100.0000	90.8372
Total all manufacturing	741,400	100.0000		100.0000		1023.06	
17	162,270		7.5650		1.7058		92.5430
18	30,080		1.4023		1.4163		93.9593
19	178,040		8.3002		1.4023		95.3616
20	292,880		13.6541		1.2937		96.6553
21	38,910		1.8140		1.1874		97.8427
22	205,720		9.5907		1.0354		98.8781
23	173,190		8.0741		0.8350		99.7131
24	115,420		5.3809		0.2070		99.9201
25	1,710		0.0799		0.0799		100.0000
Grand Total	2,145,000		100.0000		100.0000		1862.71

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 14 CALCULATION OF THE TRESS INDICES FOR WALES FOR THE 25 SIC END MAY 1959

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	26,890		2.8275		13.0242		13.0242
2	123,860		13.0242		10.5783		23.6025
3	21,580	7.5754	2.2692	29.4977	9.2650	29.4977	32.8675
4	26,220	9.2042	2.7571	14.8805	8.6360	44.3782	41.7035
5	84,030	29.4977	8.8386	9.2042	8.7508	53.5824	50.4543
6	42,390	14.8805	4.4574	7.5754	7.9390	61.1578	58.3933
7	6,750	2.3695	0.7098	7.2981	7.4385	68.4559	65.8318
8	15,620	5.4832	1.6425	5.7079	6.5773	74.1638	72.4091
9	20,790	7.2981	2.1861	5.4832	4.4574	79.6470	76.8665
10	16,260	5.7079	1.7098	4.4617	2.8275	84.1087	79.6940
11	2,090	0.7337	0.2198	4.0194	2.7571	88.1281	82.4511
12	12,710	4.4617	1.3365	3.3559	2.2692	91.4840	84.7203
13	9,560	3.3559	1.0053	3.1628	2.1861	94.6468	86.9064
14	6,410	2.2501	0.6740	2.3695	2.1262	97.0163	89.0326
15	9,010	3.1628	0.9474	2.2501	1.7098	99.2664	90.7424
16	11,450	4.0194	1.2040	0.7337	1.6425	100.0000	92.3849
otal all manu-acturing	284,870	100.0001		100.0001		1065.53	
17	70,740		7.4385		1.4616		93.8465
18	20,220		2.1262		1.3365		95.1830
19	83,220		8.7508		1.2040		96.3870
20	100,600		10.5783		1.0053		97.3923
21	13.900		1.4616		0.9474		98.3397
22	88,110		9.2650		0.7098		99.0495
23	75,500		7.9390		0.6740		99.7235
24	62,550		6.5773		0.2198		99.9433
25	540		0.0568		0.0567		100.0000
rand Total	951,000		100.0000		100.0000		1920.95

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 15 PROCEDURE PAGE

MINIMUM AND MAXIMUM RANGE OF THE TRESS INDICES WHEN CONSIDERING THE 152 MINIMUM LIST HEADINGS (MLH) EMPLOYMENT CATEGORIES

RANGE OF THE TRESS INDICES FOR MANUFACTURING INDUSTRIES FOR THE 152 MLH EMPLOYMENT CATEGORES:

(a) Assuming complete diversification of industrial employment.

The greatest possible diversity would be reached when each of the 108 manufacturing industries engaged the same proportion of people, i.e. 100/108 per cent, which is equal to 0.926 per cent. This means 0.926 percent of the working population would work in each of the 108 manufacturing industries. Adding up the progressive totals of each industrial category the crude index figure of 5,450.44 is obtained;

(b) Assuming complete specialisation of industrial employment.

The greatest possible specilisation would occur when the total of the work force of an area were concentrated in one industry. In this case, the first progressive total and each subsequent one would be 100. As the 108 manufacturing industries for the 152 MLH employment categories are considered here, the crude index yielded is 10,800.00.

RANGE OF THE TRESS INDICES FOR ALL INDUSTRIES FOR THE 152 MLH EMPLOYMENT CATEGORIES:

(a) Assuming complete diversification of industrial employment, the same procedure is used here as was utilized to calculate the crude index for greatest diversity for manufacturing industries. There are 152 industries and if each one were to engage the same proportion of people (100/152 per cent), 0.658 per cent of the working

population would be equally divided into each industrial category. Adding up the progressive totals for each industry, the crude index of 7,651.22 is obtained;

(b) Assuming complete specialisation of industrial employment - considering the 152 industires of an area with thetotal working population concentrated just in one industry, the first progressive total and each subsequent one would be 100. The Tress crude index for greatest specialisation of all industries would then be 15,200.00.

TABLE B. 16 CALCULATION OF THE TRESS INDICES FOR GREAT BRITAIN FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	605,300		2.7677		8 8350		8.8350
2	23,000		0.1052		6.5576		15.3926
3	26,580		0.1215		3.9221		19.3147
4	767,640		3.5100		3.5100		22.8247
5	30,270		0.1384		3.4145		26.2392
6	22,760		0.1041		3.3683		29.6075
7	17,340		0.0793		2.7677		32.3752
8	41,090	0.4871	0.1879	4.5558	2.7000	4.5558	35.0752
9	134,420	1.5933	0.6146	3.9627	2.4271	8.5185	37.5023
10	59,980	0.7110	0.2743	3.8003	2.3936	12.3188	39.8959
11	65,610	0.7777	0.3000	3.4087	2.3556	15.7275	42.2515
12	40,230	0.4769	0.1840	3.2895	2.1348	19.0170	44.3863
13	18,540	0.2198	0.0848	3.0424	1.7574	22.0594	46.1437
14	101,880	1.2076	0.4658	2.7238	1.5514	24.7832	47.6951
15	78,530	0.9308	0.3591	2.6223	1.5286	27.4055	49.2237
16	20,650	0.2448	0.0944	2.5389	1.4660	29.9444	50.6897
17	38,550	0.4569	0.1763	2.4817	1.4217	32.4261	52.1114
18	96,030	1.1383	0.4391	2.4207	1.3930	34.8468	53.5044
19	61,390	0.7277	0.2807	2.3700	1.3149	37.2168	54.8193
20	41,060	0.4867	0.1877	1.7608	1.2690	38.9776	56.0883
21	19,180	0.2273	0.0877	1.6527	1.2563	40.6303	57.3446
22	41,260	0.4891	0.1887	1.5933	1.2196	42.2236	58.5642
23	9,290	0.1101	0.0425	1.5438	1.1736	43.7674	59.7378
24	256,670	3.0424	1.1736	1.5229	1.0507	45.2903	60.7885
25	66,370	0.7867	0.3035	1.5086	1.0116	46.7989	61.0001
26				1.4870	0.9794	48.2859	62.7795
27	48,740	0.5777	0.2229	1.4391	0.9573	49.7250	63.7368
28	46,090	0.5463	0.2107	1.3730	0.9338	51.0980	64.6902
29	22,560	0.2674	0.1032	1.3693	0.9142	52.4673	65.6240
30	11,820	0.1401	0.0540	1.3674	0.8415	53.0347	66.5382
31	277,520	3.2895	1.2690	1.3508	0.7483	55.1855	67.3797
32	51,690	0.6127	0.2364	1.3092	0.7335	56.4947	68.1280
33	121,410	1.4391	0.5551	1.2327	0.6983	57.7274	68.8615
34	56,660	0.6716	0.2591	1.2076	0.6936	58.9350	69.5598
							70.2534

0.9534

TABLE B. 16 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	74,910	0.8879	0.3425	1.1383	0.6792	60.0733	70.9326
36	36,810	0.4363	0.1683	1.1182	0.6507	61.1915	71.5833
37	86,480	1.0251	0.3954	1.0830	0.6375	62.2753	72.2208
38	44,540	0.5279	0.2037	1.0662	0.6146	63.3415	72.8354
39	35,530	0.4211	0. 625	1.0251	0.6085	64.3666	73.4439
40	48,430	0.5741	0.2214	0.9754	0.5955	65.3420	74.0394
41	23,530	0.2789	.1076	0.9343	0.5928	66.2763	74.6322
42	49,190	0.5831	0.2249	0.9308	0.5875	67.2071	75.2197
43	53,430	0.6333	0.2443	0.9082	0.5819	68.1153	75.8016
44	320,610	3.8003	1.4660	0.9058	0.5736	69.0211	76.3752
45	148,550	1.7608	0.6792	0.8928	0.5584	69.9139	76.9336
46	221,230	2.6223	1.0116	0.8879	0.5551	70.8018	77.4887
47				0.8515		71.6533	
48	115,830	1.3730	0.5296	0.8007	0.5296	72.4540	78.0183
49	14,780	0.1752	0.0676	0.7918	0.5282	73.2458	78.5465
50	209,370	2.4817	0.9573	0.7867	0.5275	74.0325	79.0740
51	60,570	0.7180	0.2770	0.7777	0.5211	74.8102	79.5951
52	58,000	0.6875	0.2652	0.7277 ← 0.7521	0.5050	76.2900 ← 75.5623	80.1001
53	214,190	2.5389	0.9794	0.7180	0.4755	77.0080	80.5756
54	58,310	0.6912	0.2660	0.7164	0.4658	77.7244	81.0414
55	130,240	1.5438	0.5955	0.7110	0.4391	78.4354	81.4805
56	204,220	2.4207	0.9338	0.6912	0.4314	79.1266	81.9119
57	76,620	0.9082	0.3503	0.6875	0.4181	79.8141	82.3300
58	384,350	4.5558	1.7574	0.6716	0.4113	80.4857	82.7413
59	36,610	0.4340	0.1674	0.6490	0.3954	81.1347	83.1367
60	287,570	3.4087	1.3149	0.6333	0.3798	81.7680	83.5165
61	71,840	0.8515	0.3285	0.6127	0.3763	82.3807	83.8928
62	78,820	0.9343	0.3604	0.5831	0.3604	82.9638	84.2532
63	7,490	0.0888	0.0342	0.5802	0.3591	83.5440	84.6123
64	22,830	0.2706	0.1044	0.5777	0.3535	84.1217	84.9658
65	10,270	0.1217	0.0470	0.5741	0.3503	84.6958	85.3161
66	40,550	0.4807	0.1854	0.5463	0.3494	85.2421	85.6655
67	42,310	0.5015	0.1935	0.5279	0.3490	85.7700	86.0145
68	34,260	0.4061	0.1567	0.5015	0.3444	86.2715	86.3589

continue

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	28,870	0.3422	0.1320	0.4891	0.3425	86.7606	86.7014
70	334,310	3.9627	1.5286	0.4871	0.3205	87.2477	87.0299
71	38,630	0.4579	0.1766	0.4867	0.3089	87.7344	87.3388
72	139,430	1.6527	0.6375	0.4807	0.3054	88.2151	87.6442
73	125,450	1.4870	0.5736	0.4779	0.3035	88.6930	87.9477
74	199,940	2.3700	0.9142	0.4769	0.3000	89.1699	88.2477
75	18,010	0.2135	0.0824	0.4579	0.2998	89.6278	88.5475
76	13,550	0.1606	0.0620	0.4569	0.2901	90.0847	88.8376
77	115,520	1.3693	0.5282	0.4561	0.2807	90.5408	89.1183
78	8,980	0.1064	0.0411	0.4363	0.2770	90.9771	89.3953
79	33,200	0.3935	0.1518	0.4340	0.2764	91.4111	89.6717
80	21,530	0.2552	0.0984	0.4211	0.2743	91.8322	89.9460
81	31,580	0.3743	0.1444	0.4061	0.2666	92.2383	90.2126
82	82,290	0.9754	0.3763	0.3935	0.2652	92.6318	90.4778
83	26,790	0.3176	0.1225	0.3775	0.2591	93.0093	90.7369
84	31,850	0.3775	0.1456	0.3743	0.2503	93.3836	90.9872
85	23,280	0.2759	0.1064	0.3568	0.2443	93.7404	91.2315
86	8,950	0.1061	0.0409	0.3440	0.2409	94.0844	91.4724
87	30,100	0.3568	0.1376	0.3422	0.2364	94.4266	91.7088
88	127,270	1.5086	0.5819	0.3176	0.2249	94.7442	91.9337
89	66,800	0.7918	0.3054	0.3020	0.2238	95.0462	92.1575
90	48,950	0.5802	0.2238	0.2878	0.2229	95.3340	92.3804
91	110,450	1.3092	0.5050	0.2789	0.2214	95.6129	92.6018
92	15,770	0.1869	0.0721	0.2759	0.2109	95.8888	92.8127
93	40,320	0.4779	0.1844	0.2706	0.2107	96.1594	93.0234
94	113,960	1.3508	0.5211	0.2674	0.2037	96.4268	93.2271
95	75,320	0.8928	0.3444	0.2552	0.1935	96.6820	93.4206
96	67,550	0.8007	0.3089	0.2463	0.1887	96.9283	93.6093
97	76,420	0.9058	0.3494	0.2448	0.1879	97.1731	93.7972
98	16,140	0.1913	0.0738	0.2409	0.1877	97.4140	93.9849
99	94,340	1.1182	0.4314	0.2273	0.1854	97.6413	94.1703
100	89,950	1.0662	0.4113	0.2198	0.1844	97.8611	94.3547
101	104,000	1.2327	0.4755	0.2135	0.1840	98.0746	94.5387
102	20,320	0.2409	0.0929	0.2125	0.1766	98.2871	94.7153

TABLE B. 16 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	24,280	0.2878	0.1110	0.1913	0.1763	98.4784	94.8916
104	25,480	0.3020	0.1165	0.1897	0.1759	98.6681	95.0675
105	20,780	0.2463	0.0950	0.1869	0.1736	98.8550	95.2411
106	91,430	1.0838	0.4181	0.1752	0.1716	99.0302	95.4127
107	60,440	0.7164	0.2764	0.1606	0.1683	99.1908	95.5810
108	63,450	0.7521	0.2901	0.1401	0.1674	99.3309	95.7484
109	128,480	1.5229	0.5875	0.1357	0.1649	99.4666	95.9133
110	229,790	2.7238	1.0507	0.1217	0.1625	99.5883	96.0758
111	115,360	1.3674	0.5275	0.1101	0.1567	99.6984	96.2325
112	17,930	0.2125	0.0820	0.1064	0.1518	99.8048	96.3843
113	16,000	0.1897	0.0732	0.1061	0.1456	99.9109	96.5299
114	29,020	0.3440	0.1327	0.0088	0.1444	99.9997	96.6743
115	11,450	0.1357	0.0524		0.1384		96.8127
116	54,750	0.6490	0.2503		0.1376		96.9503
117	38,480	0.4561	0.1759		0.1327		97.0830
otal all manu-acturing	8,436,430	99.9997		99.9997		7993.8264	
118	1,434,150		6.5576		0.1320		97.2150
119	133,080		0.6085		0.1225		97.3375
120	208,500		0.9534		0.1215		97.4590
121	36,070		0.1649		0.1165		97.5755
122	466,890		2.1348		0.1110		97.6865
123	274,750		1.2563		0.1076		97.7941
124	184,040		0.8415		0.1064		97.9005
125	160,420		0.7335		0.1052		98.0057
126	152,720		0.6983		0.1044		98.1101
127	37,960		0.1736		0.1041		98.2142
128	310,930		1.4217		0.1032		98.3174
129	65,570		0.2998		0.0994		98.4168
130	523,470		2.3936		0.0984		98.5152
131	1,932,220		0.8350		0.0950		98.6102
132	163,650		0.7483		0.0944		98.7046
133	122,120		0.5584		0.0929		98.7975

TABLE B. 16 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	530,800		2.4271		0.0877		98.8852
135	77,300		0.3535		0.0857		98.9709
136	857,770		3.9221		0.0848		99.0557
137	83,070		0.3798		0.0824		99.1381
138	736,650		3.3683		0.0820		99.2201
139	21,730		0.0994		0.0793		99.2994
140	151,690		0.6936		0.0788		99.3732
141	142,310		0.6507		0.0732		99.4464
142	52,690		0.2409		0.0721		99.5185
143	37,520		0.1716		0.0676		99.5861
144	590,500		2.7000		0.0620		99.6481
145	129,640		0.5928		0.0540		99.7021
146	46,130		0.2109		0.0524		99.7545
147	339,290		1.5514		0.0470		99.8015
148	18,750		0.0857		0.0425		99.8440
149	76,330		0.3490		0.0411		99.8851
150	304,650		1.3930		0.0409		99.9260
151	266,730		1.2196		0.0396		99.9656
152	515,170		2.3556		0.0342		99.9998
153	746,750		3.4145				
154	8,670		0.0396				
Grand Total	21,870,000		99.9998				12352.6748

SOURCE OF DATA: MINISTRY OF LABOUR GAZETTE, MAY 1960

SOURCE OF DATA: Ministry of Labour Gazette, May 1960

TABLE B. 17 CALCULATION OF THE TRESS INDICES FOR THE SOUTH EAST FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	71,500		1.3017		9.1788		9.1788
2	1,820		0.0331		6.4447		15.6235
3	290		0.0053		4.9705		20.5940
4	10,240		0.1864		3.7069		24.3009
5	760		0.0138		3.6841		27.9850
6	2,770		0.0504		3.6232		31.6082
7	1,390		0.0253		3.5319		35.1401
8	7,690	0.4271	0.1400	5.4302	3.3377	5.4302	38.4778
9	27,960	1.5527	0.5090	5.2297	3.2070	10.6599	41.6848
10	12,480	0.6931	0.2272	4.8065	2.8251	15.4664	44.5099
11	13,090	0.7269	0.2383	4.0840	2.0117	19.5504	46.5216
12	11,120	0.6175	0.2024	3.5270	1.9885	23.0774	48.5101
13	7,220	0.4010	0.1314	3.4642	1.7801	26.5416	50.2902
14	21,650	1.2023	0.3941	3.3626	1.7144	29.9042	52.0046
15	18,860	1.0474	0.3433	3.0078	1.7045	32.9120	53.7091
16	3,190	0.1772	0.0501	2.4024	1.5746	35.3144	55.2847
17	14,770	0.8202	0.2689	2.3175	1.5620	37.6319	56.8467
18	22,060	1.2251	0.4015	2.2569	1.3388	39.8888	58.1855
19	15,370	0.8536	0.2798	2.2142	1.3017	42.1030	59.4872
20	9,090	0.5048	0.1655	2.0920	1.2054	44.1950	60.6926
21	50	0.0028	0.0009	2.0587	1.1562	46.2537	61.8488
22	19,390	1.0768	0.3530	1.7888	1.1356	48.0425	62.9844
23	4,220	0.2344	0.0768	1.6455	1.1023	49.6880	64.0867
24	39,870	2.2142	0.7258	1.5850	1.0550	51.2730	65.1417
25	28,540	1.5850	0.5196	1.5527	1.0419	52.8257	66.1836
26							
27	19,100	1.0607	0.3477	1.5055	1.0315	54.3312	67.2151
28	7,310	0.4060	0.1331	1.4722	0.9860	55.8034	68.2011
29	2,760	0.1533	0.0502	1.3873	0.9354	57.1907	69.1365
30	4,390	0.2436	0.0799	1.3523	0.8205	58.5430	69.9570
31	1,720	0.0955	0.0313	1.3484	0.8134	59.8914	70.7704
32	1,490	0.0827	0.0271	1.3445	0.8043	61.2359	71.5747
33	5,640	0.3132	0.1027	1.3023	0.7954	62.5382	72.3701
34	9,790	0.5437	0.1782	1.2940	0.7875	63.8322	73.1576

TABLE B. 17 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	14,810	0.8225	0.2696	1.2828	0.7622	65.1150	73.9198
36	2,810	0.1561	0.0512	1.2251	0.7608	66.3401	74.6806
37	17,080	0.9485	0.3109	1.2129	0.7597	67.5530	75.4403
38	10,220	0.5676	0.1861	1.2023	0.7399	68.7553	76.1802
39	6,630	0.3682	0.1207	1.0768	0.7258	69.8321	76.9060
40	1,130	0.0628	0.0206	1.0607	0.6858	70.8928	77.5918
41	4.750	0.2638	0.0865	1.0474	0.6749	71.9402	78.2667
42	7,860	0.4365	0.1431	1.0291	0.6070	72.9693	78.8737
43	27,110	1.5055	0.4935	1.0074	0.5864	73.9767	79.4601
44	86,550	4.8065	1.5756	0.9541	0.5600	74.9308	80.0201
45	24,980	1.3873	0.4548	0.9485	0.5394	75.8793	80.5595
46	40,640	2.2569	0.7399	0.9002	0.5196	76.7795	81.0791
47							
48	63,510	3.5270	1.1562	0.8952	0.5152	77.6747	81.5943
49	6,380	0.3543	0.1161	0.3536	0.5128	78.5283	82.1071
50	32,210	1.7888	0.5864	0.8225	0.5090	79.3508	82.6161
51	24,210	1.3445	0.4407	0.8202	0.4935	80.1710	83.1096
52	24,280	1.3484	0.4420	0.7269	0.4826	80.8979	83.5922
53	97,780	5.4302	1.7801	0.6931	0.4673	81.5910	84.0595
54	18,140	1.0074	0.3302	0.6647	0.4548	82.2557	84.5143
55	54,160	3.0078	0.9860	0.6448	0.4433	82.9005	84.9576
56	18,530	1.0291	0.3373	0.6403	0.4420	83.5408	85.3996
57	4,780	0.2655	0.0870	0.6175	0.4407	84.1583	85.8403
58	73,540	4.0840	1.3368	0.6020	0.4269	84.7603	86.2672
59	2,610	0.1449	0.0475	0.5770	0.4242	85.3373	86.6914
60	41,730	2.3175	0.7597	0.5676	0.4205	85.9049	87.1119
61	9,120	0.5065	0.1660	0.5437	0.4016	86.4486	87.5135
62	10,390	0.5770	0.1891	0.5404	0.3976	86.9890	87.9111
63	5,660	0.1477	0.0434	0.5126	0.3941	87.5016	88.3052
64	1,970	0.1094	0.0359	0.5087	0.3530	88.0103	88.6582
65	1,220	0.0678	0.0222	0.5065	0.3477	88.5168	89.0059
66	3,950	0.2194	0.0719	0.5048	0.3433	89.0216	89.3492
67	4,180	0.2321	0.0761	0.9909	0.3373	89.5125	89.6865
68	9,230	0.5126	0.1680	0.4365	0.3302	89.9490	90.0167

TABLE B. 17 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manu.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	10,840	0.6020	0.1973	0.4359	0.3128	90.3849	90.3295
70	60,550	3.3626	1.1023	0.4271	0.3109	90.8120	90.6404
71	290	0.0161	0.0053	0.4060	0.2951	91.2180	90.9355
72	580	0.0322	0.0106	0.4010	0.2935	91.6190	91.2290
73	3,220	0.1788	0.0586	0.3965	0.2793	92.0155	91.5088
74	550	0.0305	0.0100	0.3765	0.2696	92.3920	91.7784
75	60	0.0033	0.0011	0.3682	0.2689	92.7602	92.0473
76	1,320	0.0733	0.0240	0.3599	0.2645	93.1201	92.3118
77	5,820	0.3232	0.1060	0.3543	0.2574	93.4744	92.5692
78	280	0.0155	0.0051	0.3460	0.2383	93.8204	92.8075
79	510	0.0283	0.0093	0.3377	0.2272	94.1581	93.0347
80	1,370	0.0761	0.0249	0.3277	0.2179	94.4858	93.2526
81	5,860	0.3254	0.1067	0.3254	0.2114	94.8112	93.4640
82	2,250	0.1250	0.0410	0.3232	0.2099	95.1344	93.6739
83	6,080	0.3377	0.1107	0.3132	0.2024	95.4476	93.8763
84	3,720	0.2066	0.0677	0.2910	0.1973	95.7386	94.0736
85	8,840	0.4909	0.1609	0.2655	0.1891	96.0041	94.2627
86	6,480	0.3599	0.1180	0.2638	0.1864	96.2679	94.4491
87	2,850	0.1503	0.0519	0.2449	0.1861	96.5128	94.6352
88	23,450	1.3023	0.4269	0.2438	0.1804	96.7566	94.8156
89	27,670	2.0920	0.6858	0.2344	0.1782	96.9910	94.9938
90	11,530	0.6403	0.2099	0.2321	0.1771	97.2231	95.1709
91	43,260	2.4024	0.7875	0.2194	0.1753	97.4425	95.3462
92	4,410	0.2449	0.0803	0.2066	0.1680	97.6491	95.5142
93	9,730	0.5404	0.1771	0.1788	0.1668	97.8279	95.6810
94	9,160	0.5087	0.1668	0.1772	0.1660	98.0051	95.8470
95	5,240	0.2910	0.0954	0.1666	0.1655	98.1717	96.0125
96	2,230	0.1238	0.0406	0.1583	0.1609	98.3300	96.1734
97	16,120	0.8952	0.2935	0.1561	0.1562	98.4861	96.3296
98	5,900	0.3277	0.1074	0.1533	0.1431	98.6394	96.4727
99	26,510	1.4722	0.4826	0.1477	0.1429	98.7871	96.6156
100	23,300	1.2940	0.4242	0.1449	0.1400	98.9320	96.7556
101	37,070	2.0587	0.6749	0.1250	0.1331	99.0570	96.8887
102	6,780	0.3765	0.1234	0.1238	0.1314	99.1808	97.0201

TABLE B. 17 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	11,970	0.6647	0.2179	0.1233	0.1300	99.3041	97.1501
104	7,140	0.3965	0.1300	0.1094	0.1234	99.4135	97.2735
105	6,230	0.3460	0.1134	0.0955	0.1207	99.5090	97.3942
106	29,630	1.6455	0.5394	0.0827	0.1180	99.5917	97.5122
107	16,210	0.9002	0.2951	0.0761	0.1161	99.6678	97.6283
108	24,350	1.3523	0.4433	0.0733	0.1134	99.7411	97.7417
109	62,380	3.4642	1.1356	0.0678	0.1107	99.8089	97.8524
110	94,170	5.2297	1.7144	0.0626	0.1074	99.8717	97.9598
111	23,100	1.2820	0.4205	0.0322	0.1067	99.9039	98.0665
112	2,220	0.1233	0.0404	0.0305	0.1060	99.9344	98.1725
113	3,000	0.1666	0.0546	0.0283	0.1027	99.9627	98.2752
114	11,610	0.6440	0.2114	0.0161	0.0954	99.9788	98.3706
115	7,850	0.4359	0.1429	0.0155	0.0870	99.9943	98.4576
116	21,840	1.2129	0.3976	0.0033	0.0865	99.9976	98.5441
117	17,180	0.9541	0.3128	0.0028	0.0803	100.0004	98.6244
otal all nufacturing	1,800,680	100.0004		100.0004		8460.4454	
118	354,010		6.4447		0.0799		98.7043
119	41,870		0.7622		0.0770		98.7813
120	51,380		0.9354		0.0768		98.8581
121	9,630		0.1753		0.0761		98.9342
122	109,230		1.9885		0.0719		99.0061
123	57,950		1.0550		0.0677		99.0738
124	45,070		0.8205		0.0586		99.1324
125	57,230		1.0419		0.0581		99.1905
126	44,180		0.8043		0.0546		99.2451
127	30,760		0.5600		0.0519		99.2970
128	110,500		2.0117		0.0512		99.3482
129	33,340		0.6070		0.0504		99.3987
130	199,020		3.6232		0.0502		99.4488
131	504,190		9.1788		0.0484		99.4972
132	43,690		0.7954		0.0475		99.5447
133	41,790		0.7608		0.0410		99.5857

TABLE B. 17 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	273,030		4.9705		0.0406		99.6263
135	28,300		0.5152		0.0404		99.6667
136	183,340		3.3377		0.0359		99.7026
137	28,170		0.5128		0.0331		99.7357
138	202,370		3.6841		0.0313		99.7670
139	9,910		0.1804		0.0271		99.7941
140	56,660		1.0315		0.0271		99.0212
141	66,210		1.2054		0.0253		99.8465
142	14,140		0.2574		0.0249		99.8714
143	8,580		0.1562		0.0240		99.8954
144	194,010		3.5319		0.0222		99.9176
145	44,680		0.8134		0.0206		99.9382
146	14,530		0.2645		0.0138		99.9520
147	93,630		1.7045		0.0106		99.9626
148	4,230		0.0770		0.0100		99.9726
149	25,670		0.4673		0.0093		99.9819
150	85,800		1.5620		0.0053		99.9872
151	155,180		2.8251		0.0053		99.9925
152	176,160		3.2070		0.0051		99.9976
153	203,620		3.7069		0.0011		99.9987
154	1,490		0.0271		0.0009		99.9996
Grand Total	5,493,000		99.9996				12808.5612

Source of Data: Ministry of Labour Gazette, May, 1960.

TABLE B. 18 CALCULATION OF THE TRESS INDICES FOR THE SOUTH WEST FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	69,390		5.7017		9.5037		9.5037
2	2,180		0.1791		8.1446		17.6483
3	920		0.0756		5.7017		23.3500
4	5,670		0.4659		4.8636		28.2136
5	5,790		0.4758		4.3155		32.5291
6	6,490		0.5333		4.0403		36.5694
7	940		0.0772		3.7831		40.3524
8	3,260	0.8804	0.2679	13.2784	3.7420	13.2784	44.0944
9	6,880	1.8580	0.5653	4.7124	3.6031	17.9908	47.6975
10	1,930	0.5212	0.1586	4.3721	2.5892	22.3629	50.2867
11	6,540	1.7661	0.5374	3.6052	2.4848	25.9681	52.7715
12	7,880	2.1280	0.6475	3.5512	2.1857	29.5193	54.9572
13	140	0.0378	0.0115	3.1974	1.9975	32.7167	56.9547
14	6,890	1.8607	0.5661	2.6191	1.7913	35.3362	58.7460
15	1,680	0.4537	0.1380	2.5223	1.7387	37.8584	60.4847
16	3,810	1.0289	0.8131	2.3683	1.4339	40.2268	61.9185
17	1,400	0.3781	0.1150	2.3035	1.3303	42.5303	63.2488
18	5,120	1.3827	0.4207	2.1280	1.3180	44.6583	64.5668
19	4,100	1.1072	0.3369	2.0713	1.2399	46.7296	65.8087
20	8,530	2.3035	0.7009	1.8742	1.2186	48.6037	67.0253
21	0	0.0	0.0	1.8607	1.0970	50.4644	68.1223
22	60	0.0162	0.0049	1.8580	1.0805	52.3223	69.2028
23	220	0.0594	0.0181	1.8499	0.9729	54.1722	70.1757
24	5,760	1.5555	0.4733	1.7850	0.8192	55.9572	70.9949
25	580	0.1566	0.0477	1.7661	0.7970	57.7233	71.7919
26							
27	1,610	0.4348	0.1323	1.6608	0.7675	59.3841	72.5594
28	370	0.0999	0.0304	1.6446	0.7206	61.0287	73.2800
29	1,620	0.4375	0.1331	1.5555	0.7009	62.5842	73.9809
30	210	0.0567	0.0173	1.5501	0.6820	64.1343	74.6629
31	260	0.0702	0.0214	1.5069	0.6565	65.6412	75.3194
32	270	0.0729	0.0222	1.3827	0.6475	67.0238	75.9669
33	1,800	0.4861	0.1479	1.3449	0.6434	68.3687	76.6102
34	180	0.0486	0.0148	1.3205	0.6302	69.6892	77.2405

TABLE B. 18 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	2,600	0.7021	0.2136	1.3124	0.5703	71.0017	77.8107
36	3,420	0.9236	0.2810	1.1099	0.5686	72.1116	78.3793
37	1,850	0.4996	0.1520	1.1099	0.5661	73.2215	78.9455
38	1,330	0.3592	0.1093	1.1072	0.5661	74.3287	79.5116
39	4,110	1.1099	0.3377	1.0910	0.5653	75.4197	80.0769
40	50	0.0135	0.0041	1.0640	0.5629	76.4837	80.6398
41	180	0.0486	0.0148	1.0478	0.5431	77.5315	81.1829
42	4,110	1.1099	0.3377	1.0289	0.5374	78.5604	81.7203
43	890	0.2403	0.0731	0.9236	0.5333	79.4839	82.2536
44	16,190	4.3721	1.3303	0.8804	0.5053	80.3643	82.7589
45	2,650	0.7156	0.2177	0.8804	0.5004	81.2447	83.2593
46	13,350	3.6052	1.0970	0.8534	0.4807	82.0980	83.7400
47							
48	5,740	1.5501	0.4717	0.8075	0.4807	82.9055	84.2207
49	540	0.1456	0.0444	0.7913	0.4758	83.6967	84.6964
50	3,260	0.8804	0.2679	0.7237	0.4741	84.4204	85.1705
51	1,220	0.3295	0.1002	0.7156	0.4733	85.1360	85.6438
52	160	0.0432	0.0131	0.7021	0.4717	85.8382	86.1154
53	9,700	2.6195	0.7970	0.6967	0.4659	86.5349	86.5813
54	2,090	0.5644	0.1717	0.6130	0.4659	87.1479	87.0472
55	2,270	0.6130	0.1865	0.6022	0.4585	87.7501	87.5057
56	17,450	4.7124	1.4339	0.5644	0.4207	88.3145	87.9264
57	4,890	1.3205	0.4018	0.5536	0.4092	88.8681	88.3356
58	9,340	2.5223	0.7675	0.5212	0.4018	89.3893	88.7374
59	2,230	0.6022	0.1832	0.4996	0.3993	89.8889	89.1368
60	49,170	13.2784	4.0403	0.4861	0.3377	90.3750	89.4745
61	13,150	3.5512	1.0805	0.4861	0.3377	90.8611	89.8122
62	6,850	1.8499	0.5629	0.4645	0.3369	91.3255	90.1491
63	90	0.0243	0.0074	0.4537	0.3320	91.7792	90.4810
64	170	0.0459	0.0140	0.4537	0.3303	92.2329	90.8113
65	0	0.0	0.0	0.4402	0.3237	92.6731	91.1351
66	130	0.0351	0.0107	0.4375	0.3221	93.1105	91.4572
67	480	0.1296	0.0394	0.4348	0.3188	93.5453	91.7760
68	360	0.0972	0.0296	0.3862	0.3131	93.9315	92.0890

TABLE B 18 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	140	0.0378	0.0115	0.3781	0.2810	94.3095	92.3700
70	6,090	1.6446	0.5004	0.3781	0.2679	94.6876	92.6379
71	420	0.1134	0.0345	0.3592	0.2679	95.0468	92.9056
72	240	0.0648	0.0197	0.3376	0.2597	95.3843	93.1654
73	740	0.1998	0.0608	0.3295	0.2457	95.7138	93.4111
74	4,860	1.3124	0.3993	0.3241	0.2408	96.0378	93.6519
75	60	0.0162	0.0049	0.2701	0.2293	96.3079	93.8811
76	1,000	0.2701	0.0822	0.2674	0.2202	96.5752	94.1013
77	530	0.1431	0.0435	0.2403	0.2177	96.8156	94.3190
78	580	0.1566	0.0477	0.1998	0.2136	97.0154	94.5327
79	740	0.1998	0.0608	0.1998	0.2120	97.2152	94.7447
80	1,680	0.4537	0.1380	0.1944	0.2095	97.4097	94.9542
81	1,630	0.4402	0.1339	0.1809	0.1865	97.5906	95.1407
82	400	0.1080	0.0329	0.1647	0.1832	97.7553	95.3239
83	720	0.1944	0.0592	0.1566	0.1791	97.9119	95.5031
84	2,930	0.7913	0.2408	0.1566	0.1717	98.0685	95.6748
85	60	0.1647	0.0501	0.1458	0.1701	98.2143	95.8449
86	170	0.0459	0.0140	0.1431	0.1684	98.3575	96.0133
87	670	0.1809	0.0551	0.1296	0.1586	98.4871	96.1719
88	2,990	0.8075	0.2457	0.1134	0.1520	98.6005	96.3239
89	300	0.0810	0.0247	0.1134	0.1479	98.7139	96.4718
90	3,160	0.8534	0.2597	0.1080	0.1479	98.8219	96.6197
91	1,720	0.4645	0.1413	0.1026	0.1413	98.9245	96.7610
92	40	0.0108	0.0033	0.0999	0.1380	99.0245	96.8991
93	5,580	1.5069	0.4585	0.0972	0.1380	99.1217	97.0371
94	8,770	2.3683	0.7206	0.0810	0.1339	99.2027	97.1710
95	2,580	0.6967	0.2120	0.0729	0.1331	99.2756	97.3041
96	1,400	0.3781	0.1150	0.0702	0.1323	99.3458	97.4364
97	380	0.1026	0.0312	0.0648	0.1175	99.4106	97.5539
98	130	0.0351	0.0107	0.0594	0.1150	99.4700	97.6689
99	4,980	1.3449	0.4092	0.0567	0.1150	99.5267	97.7840
100	6,610	1.7850	0.5431	0.0486	0.1118	99.5753	97.8957
101	4,040	1.0910	0.3320	0.0486	0.1093	99.6239	98.0050
102	1,200	0.3241	0.0986	0.0459	0.1027	99.6698	98.1077

TABLE B. 18 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,430	0.3862	0.1175	0.0459	0.1011	99.7157	98.2088
104	990	0.2674	0.0813	0.0432	0.1002	99.7589	98.3090
105	1,250	0.3376	0.1027	0.0378	0.0986	99.7967	98.4076
106	6,940	1.8742	0.5703	0.0378	0.0929	99.8345	98.5005
107	7,670	2.0713	0.6302	0.0351	0.0822	99.8696	98.5826
108	2,680	0.7237	0.2202	0.0351	0.0813	99.9047	98.6640
109	3,940	1.0640	0.3237	0.0324	0.0772	99.9371	98.7412
110	11,840	3.1974	0.9729	0.0243	0.0756	99.9614	98.8168
111	6,150	1.6608	0.5053	0.0162	0.0731	99.9776	98.8899
112	0	0.0	0.0	0.0162	0.0633	99.9937	98.9532
113	2,050	0.5536	0.1684	0.0135	0.0624	100.0072	99.0156
114	420	0.1134	0.0345	0.0108	0.0608	100.0180	99.0764
115	120	0.0324	0.0099	0.0	0.0608	100.0180	99.1372
116	1,800	0.4861	0.1479	0.0	0.0592	100.0180	99.1964
117	3,880	1.0478	0.3188	0.0	0.0551	100.0180	99.2514
Total all manufacturing	370.300	100.0187		100.0187		8,8843.8879	
118	99,120		8.1446		0.0501		99.3015
119	6,920		0.5686		0.0477		99.3492
120	15,090		1.2399		0.0477		99.3968
121	2,070		0.1701		0.0444		99.4412
122	30,240		2.4848		0.0435		99.4847
123	16,040		1.3180		0.0394		99.5241
124	9,970		0.8192		0.0345		99.5586
125	4,020		0.3303		0.0345		99.5931
126	7,830		0.6434		0.0329		99.6260
127	180		0.0148		0.0312		99.6572
128	21,800		1.7913		0.0304		99.6876
129	2,550		0.2095		0.0296		99.7172
130	24,310		1.9975		0.0247		99.7418
131	115,660		9.5037		0.0222		99.7640
132	14,830		1.2186		0.0214		99.7854
133	5,850		0.4807		0.0197		99.8051

TABLE B. 18 (Continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	21,160		1.7387		0.0181		99.8232
135	3,920		0.3221		0.0173		99.8404
136	59,190		4.8636		0.0148		99.8552
137	5,670		0.4659		0.0148		99.8700
138	52,520		4.3155		0.0148		99.8848
139	1,130		0.0929		0.0140		99.8987
140	6,890		0.5661		0.0140		99.9127
141	5,770		0.4741		0.0131		99.9258
142	2,790		0.2293		0.0115		99.9373
143	770		0.0633		0.0115		99.9488
144	46,040		3.7831		0.0107		99.9595
145	8,300		0.6820		0.0107		99.9702
146	1,360		0.1118		0.0099		99.9800
147	26,600		2.1857		0.0074		99.9874
148	1,230		0.1011		0.0049		99.9923
149	5,850		0.4807		0.0049		99.9973
150	31,510		2.5892		0.0041		100.0014
151	7,990		0.6565		0.0033		100.0046
152	43,850		3.6031		0.0		100.0046
153	45,540		3.7420		0.0		100.0046
154	760		0.0624		0.0		100.0046
GRAND TOTAL:	1,217,000		99.9578		99.9578		13142.5890

SOURCE OF DATA: MINISTRY OF LABOUR GAZETTE, MAY 1960

SOURCE OF DATA: Ministry of Labour Gazette, May 1960

TABLE B. 19: CALCULATION OF THE TRESS INDICES FOR EAST ANGLIA FOR THE 152 MLH

END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	155,880		6.7393		9.4444		9.4444
2	2,550		0.1102		7.6926		17.1370
3	1,900		0.0821		6.7393		23.8763
4					5.0873		28.9637
5	220		0.0095		3.7363		32.6999
6	4,510		0.1950		3.4851		36.1850
7	180		0.0078		3.3558		39.5408
8	6,780	0.8493	0.2931	9.7230	3.2905	9.7230	42.8313
9	9,740	1.2201	0.4211	7.1263	2.8785	16.8493	45.7098
10	4,570	0.5725	0.1976	6.0553	2.4596	22.9046	48.1694
11	4,970	0.6226	0.2149	4.5333	2.4155	27.4379	50.5849
12	2,800	0.3507	0.1211	3.6665	2.0899	31.1044	52.6748
13	1,910	0.2393	0.0826	3.5037	1.9507	34.6081	54.6255
14	10,120	1.2677	0.4375	3.3608	1.8526	37.9689	56.4781
15	16,160	2.0243	0.6987	2.6268	1.6623	40.5957	58.1404
16	1,960	0.2455	0.0847	2.1934	1.6131	42.7891	59.7534
17	4,680	0.5862	0.2023	2.1170	1.5646	44.9060	61.3181
18	12,340	1.5458	0.5335	2.0243	1.4643	46.9303	62.7824
19	4,320	0.5411	0.1868	1.9930	1.4125	48.9232	64.1948
20	3,100	0.3883	0.1340	1.7587	1.2655	50.6820	65.4603
21	10	0.0013	0.0004	1.6522	1.2093	52.3342	66.6695
22	7,100	0.8894	0.3070	1.6122	1.1600	53.9464	67.8295
23	70	0.0088	0.0030	1.5458	1.1180	55.4921	68.9415
24	13,190	1.6522	0.5703	1.4731	1.0450	56.9652	69.9864
25	9,580	1.2000	o.4142	1.4117	0.9918	58.3769	70.9782
26							
27	5,430	0.6802	0.2348	1.3867	0.9066	59.7636	71.8848
28	1,270	0.1591	0.0549	1.3779	0.8016	61.1415	72.6863
29	6,630	0.8305	0.2866	1.3115	0.7951	62.4530	73.4814
30	1,460	0.1829	0.0631	1.2677	0.7570	63.7207	74.2384
31	1,760	0.2205	0.0761	1.2627	0.7523	64.9834	74.9907
32	1,830	0.2292	0.0791	1.2201	0.7307	66.2034	75.7213
33	5,970	0.7478	0.2581	1.2000	0.7000	67.4034	76.4213
34	6,360	0.7967	0.2750	1.1462	0.6987	68.5496	77.1199

TABLE B. 19: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	3,450	0.4322	0.1492	1.0647	0.6879	69.6143	77.8078
36	11,070	1.3867	0.4786	1.0535	0.6070	70.6678	78.4148
37	7,370	0.9232	0.3186	0.9232	0.5979	71.5910	79.0127
38	3,660	0.4585	0.1582	0.9207	0.5703	72.5117	79.5829
39	2,790	0.3495	0.1206	0.9107	0.5564	73.4223	80.1393
40	210	0.0263	0.0091	0.9032	0.5370	74.3255	80.6763
41	3,920	0.4910	0.1695	0.8969	0.5335	75.2224	81.2098
42	5,110	0.6401	0.2209	0.8894	0.5084	76.1118	81.7182
43	7,350	0.9207	0.3178	0.8518	0.4911	76.9635	82.2094
44	27,970	3.5037	1.2093	0.8493	0.4872	77.8128	82.6966
45	5,430	0.6802	0.2348	0.8368	0.4786	78.6496	83.1752
46	36,190	4.5333	1.5646	0.8305	0.4756	79.4801	83.6508
47							
48	17,510	2.1934	0.7570	0.8192	0.4527	80.2993	84.1034
49	730	0.0914	0.0316	0.7967	0.4375	81.0960	84.5409
50	15,910	1.9930	0.6879	0.7516	0.4358	81.8476	84.9767
51	6,540	0.8192	0.2827	0.7478	0.4211	82.5954	85.3978
52	1,380	0.1729	0.0597	0.6802	0.4142	83.2756	85.8120
53	48,340	6.0553	2.0899	0.6802	0.4047	83.9557	86.2166
54	5,140	0.6439	0.2222	0.6439	0.3956	84.5996	86.6122
55	8,410	1.0535	0.3636	0.6401	0.3675	85.2397	86.9797
56	26,830	3.3608	1.1600	0.6226	0.3636	85.0623	87.3433
57	11,270	1.4117	0.4872	0.5988	0.3554	86.4610	87.6987
58	77,620	9.7230	3.3558	0.5862	0.3260	87.0472	88.0246
59	800	0.1002	0.0346	0.5737	0.3186	87.6209	88.3433
60	56,890	7.1263	2.4596	0.5725	0.3178	88.1934	88.6610
61	2,830	0.3545	0.1224	0.5599	0.3143	88.7533	88.9753
62	7,270	0.9107	0.3143	0.5549	0.3117	89.3082	89.2870
63	630	0.0789	0.0272	0.5411	0.3096	89.8494	89.5966
64	520	0.0651	0.0225	0.4910	0.3070	90.3404	89.9035
65	30	0.0038	0.0013	0.4860	0.2966	90.8264	90.2001
66	1,230	0.1541	0.0532	0.4585	0.2940	91.2849	90.4941
67	1,510	0.1891	0.0653	0.4322	0.2931	91.7170	90.7872
68	2,640	0.3307	0.1141	0.3883	0.2888	92.1053	91.0760

TABLE B. 19:(continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	970	0.1215	0.4919	0.3670	0.2866	92.4724	91.3626
70	16,900	2.1170	0.7307	0.3545	0.2827	92.8269	91.6454
71	210	0.0263	0.0091	0.3507	0.2750	93.1776	91.9203
72	190	0.0238	0.0082	0.3495	0.2594	93.5271	92.1797
73	2,740	0.3432	0.1185	0.3432	0.2581	93.8703	92.4378
74	1,390	0.1741	0.0601	0.3307	0.2395	94.2010	92.6773
75	10	0.0013	0.0004	0.3207	0.2348	94.5217	92.9121
76	330	0.0413	0.0143	0.3119	0.2348	94.8336	93.1468
77	4,430	0.5549	0.1915	0.2756	0.2222	95.1091	93.3690
78	250	0.0313	0.0108	0.2543	0.2209	95.3634	93.5900
79	330	0.0413	0.0143	0.2455	0.2149	95.6089	93.8048
80	350	0.0438	0.0151	0.2393	0.2084	95.8482	94.0132
81	2,200	0.2756	0.0951	0.2368	0.2067	96.0849	94.2198
82	1,580	0.1979	0.0683	0.2292	0.2023	96.3141	94.4222
83	1,050	0.1315	0.0454	0.2205	0.1980	96.5346	94.6202
84	1,740	0.2180	0.0752	0.2180	0.1976	96.7525	94.8177
85	1,090	0.1365	0.0471	0.2167	0.1950	96.9693	95.0127
86	290	0.0363	0.0125	0.1979	0.1933	97.1672	95.2060
87	1,070	0.1340	0.0463	0.1891	0.1928	97.3563	95.3988
88	6,800	0.8518	0.2940	0.1829	0.1915	97.5392	95.5903
89	4,780	0.5988	0.2067	0.1766	0.1868	97.7158	95.7771
90	2,930	0.3670	0.1267	0.1741	0.1695	97.8899	95.9465
91	6,000	0.7516	0.2594	0.1729	0.1677	98.0628	96.1143
92	4,470	0.5590	0.1933	0.1704	0.1582	98.2331	96.2725
93	7,210	0.9032	0.3117	0.1591	0.1492	98.3922	96.4217
94	11,760	1.4731	0.5084	0.1566	0.1414	98.5488	96.5630
95	11,000	1.3779	0.4756	0.1541	0.1340	98.7028	96.6971
96	970	0.1215	0.0419	0.1365	0.1267	98.8394	96.8237
97	2,490	0.3119	0.1077	0.1340	0.1224	98.9734	96.9461
98	3,880	0.4860	0.1677	0.1315	0.1211	99.1049	97.0671
99	10,080	1.2627	0.4358	0.1215	0.1206	99.2264	97.1877
100	14,040	1.7587	0.6070	0.1215	0.1198	99.3479	97.3075
101	20,970	2.6268	0.9066	0.1002	0.1165	99.4481	97.4259
102	1,250	0.1565	0.0540	0.0914	0.1141	99.5395	97.5401

TABLE B. 19: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,410	0.1766	0.0610	0.0789	0.1107	99.6184	97.6507
104	1,890	0.2368	0.0817	0.0651	0.1102	99.6836	97.7610
105	2,560	0.3207	0.1107	0.0438	0.1077	99.7274	97.8686
106	10,470	1.3115	0.4527	0.0413	0.0951	99.7687	97.9637
107	6,680	0.8368	0.2888	0.0413	0.0878	99.8101	98.0515
108	9,150	1.1462	0.3956	0.0363	0.0847	99.8464	98.1362
109	12,870	1.6122	0.5564	0.0313	0.0826	99.8777	98.2188
110	29,270	3.6665	1.2655	0.0301	0.0821	99.9078	98.3009
111	7,160	0.8969	0.3096	0.0263	0.0817	99.9341	98.3826
112	240	0.0301	0.0104	0.0263	0.0808	99.9603	98.4635
113	4,580	0.5737	0.1980	0.0238	0.0791	99.9841	98.5426
114	2,030	0.2543	0.0878	0.0088	0.0761	99.9929	98.6187
115	1,360	0.1704	0.0588	0.0038	0.0752	99.9966	98.6939
116	8,500	1.0647	0.3675	0.0013	0.0748	99.9979	98.7687
117	1,730	0.2167	0.0748	0.0013	0.0739	99.9991	98.8426
Total all Manufacturing	798,310	100.0001		100.0001		8851.5235	
118	177,930		7.6926		0.0683		98.9109
119	13,830		0.5979		0.0653		98.9762
120	24,170		1.0450		0.0631		99.0393
121	4,460		0.1928		0.0610		99.1003
122	38,450		1.6623		0.0601		99.1604
123	25,720		1.1120		0.0597		99.2200
124	18,390		0.7951		0.0588		99.2708
125	16,190		0.7000		0.0549		99.3337
126	12,420		0.5370		0.0540		99.3877
127	2,770		0.1198		0.0536		99.4413
128	32,670		1.4125		0.0532		99.4945
129	4,820		0.2084		0.0471		99.5416
130	33,870		1.4643		0.0463		99.5879
131	218,450		9.4444		0.0454		99.6333
132	22,940		0.9918		0.0419		99.6752
133	6,860		0.2966		0.0419		99.7171

TABLE B. 19: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	37,310		1.6131		0.0398		99.7569
135	5,540		0.2395		0.0346		99.7916
136	117,670		5.0873		0.0316		99.8230
137	8,220		0.3554		0.0272		99.8503
138	86,420		3.7363		0.0225		99.8728
139	1,710		0.0739		0.0151		99.8879
140	42,850		1.8526		0.0143		99.9021
141	11,360		0.4911		0.0143		99.9164
142	7,540		0.3260		0.0125		99.9289
143	920		0.0398		0.0108		99.9397
144	66,580		2.8785		0.0104		99.9501
145	18,540		0.8016		0.0095		99.9596
146	3,270		0.1414		0.0091		99.9687
147	45,120		1.9507		0.0091		99.9778
148	1,870		0.0808		0.0082		99.9860
149	9,360		0.4047		0.0078		99.9938
150	55,870		2.4155		0.0030		99.9968
151	17,400		0.7523		0.0013		99.9981
152	76,110		3.2905		0.0004		99.9985
153	80,610		3.4851		0.0004		99.9989
154	1,240		0.0536		0.0		99.9989
GRAND TOTAL	2,313,000		100.4505		100.4545		13055.5392

Source of Data: Ministry of Labour Gazette, May 1960.

TABLE B. 20: CALCULATION OF THE TRESS INDICES FOR THE EAST MIDLANDS FOR THE 152 MLH

END MAY 195[illegible]

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	65,210		4.3473		8.3280		8.3280
2	930		0.0620		7.9227		16.2507
3	3,730		0.2487		6.2653		22.5160
4	118,840		7.9227		4.5747		27.0906
5	3,140		0.2093		4.3473		31.4380
6	1,990		0.1327		4.0820		35.5199
7	5,770		0.3847		3.6960		39.2159
8	3,390	0.5357	0.2260	10.8437	2.8920	10.0437	42.1079
9	7,740	1.2231	0.5160	8.7609	2.6707	19.6046	44.7786
10	2,440	0.3856	0.1627	4.4026	2.6007	24.0072	47.3793
11	7,190	1.1362	0.4793	4.2477	1.8573	28.2549	49.2366
12	1,500	0.2370	0.1000	4.2461	1.8167	32.5010	51.0533
13	1,770	0.2797	0.1180	3.5492	1.7920	36.0503	52.8452
14	2,060	0.3255	0.1373	2.9503	1.7913	39.0006	54.6366
15	7,980	1.2610	0.5320	2.4162	1.5980	41.4168	56.2346
16	2,490	0.3935	0.1660	2.0053	1.5827	43.4221	57.8172
17	1,180	0.1865	0.0787	1.9611	1.5080	45.3832	59.3252
18	4,980	0.7870	0.3320	1.8268	1.4973	47.2100	60.8225
19	2,350	0.3714	0.1567	1.7304	1.2447	48.9404	62.0672
20	8,430	1.3322	0.5620	1.5739	1.2407	50.5143	63.3079
21	3,780	0.5973	0.2520	1.5076	1.0973	52.0219	64.4052
22	210	0.0332	0.0140	1.4301	1.0973	53.4520	65.5025
23	190	0.0300	0.0127	1.4143	1.0193	54.8663	66.5218
24	7,010	1.1078	0.4673	1.3685	0.9813	56.2348	67.5032
25	8,360	1.3211	0.5573	1.3322	0.8880	57.5669	68.3911
26							
27	680	0.1075	0.0453	1.3211	0.8460	58.8880	69.2371
28	1,500	0.2370	0.1000	1.3053	0.8453	60.1933	70.0825
29	290	0.0458	0.0193	1.2847	0.8273	61.4781	70.9098
30	920	0.1454	0.0613	1.2610	0.7707	62.7391	71.6805
31	26,870	4.2461	1.7913	1.2452	0.7300	63.9843	72.4104
32	6,780	1.0714	0.4520	1.2247	0.7120	65.2090	73.1224
33	22,460	3.5492	1.4973	1.2231	0.6640	66.4321	73.7864
34	560	0.0885	0.0373	1.1362	0.6360	67.5683	74.4224

TABLE B. 20: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	710	0.1122	0.0473	1.1141	0.6033	68.6824	75.0527
36	3,530	0.5578	0.2353	1.1109	0.5967	69.7933	75.6224
37	4,790	0.7569	0.3193	1.1078	0.5773	70.9011	76.1997
38	2,410	0.3808	0.1607	1.0935	0.5620	71.9946	76.7617
39	7,750	1.2247	0.5167	1.0714	0.5573	73.0660	77.3191
40	9,540	1.5076	0.6360	1.0240	0.5507	74.0900	77.8697
41	7,030	1.1109	0.4687	0.9545	0.5420	75.0445	78.4117
42	5,540	0.8755	0.3693	0.9023	0.5320	75.9468	78.9437
43	2,400	0.3793	0.1600	0.8786	0.5253	76.8254	79.4690
44	27,860	4.4026	1.8573	0.8786	0.5167	77.7040	79.9857
45	8,660	1.3685	0.5773	0.8755	0.5160	78.5795	80.5017
46	18,670	2.9503	1.2447	0.8360	0.4798	79.4154	80.9810
47							
48	2,470	0.3903	0.1647	0.7885	0.4787	80.2040	81.4597
49	320	0.0506	0.0213	0.7870	0.4700	80.9909	81.9297
50	6,480	1.0240	0.4320	0.7759	0.4687	81.7668	82.3983
51	1,340	0.2118	0.0893	0.7727	0.4673	82.5396	82.8656
52	6,920	1.0935	0.4613	0.7569	0.4613	83.2965	83.3270
53	7,880	1.2452	0.5253	0.7348	0.4520	84.0313	83.7790
54	3,260	0.5152	0.2173	0.6305	0.4320	84.6618	84.2110
55	4,890	0.7727	0.3260	0.6179	0.4027	85.2797	84.6136
56	2,510	0.3966	0.1673	0.6163	0.3847	85.8960	84.9983
57	590	0.0932	0.0393	0.6021	0.3847	86.4980	85.3829
58	12,690	2.0053	0.8460	0.5973	0.3807	87.0954	85.7636
59	8,130	1.2847	0.5420	0.5815	0.3707	87.6769	86.1343
60	26,880	4.2477	1.7920	0.5578	0.3707	88.2344	86.5049
61	3,900	0.6163	0.2600	0.5531	0.3693	88.7878	86.8743
62	8,950	1.4143	0.5967	0.5357	0.3693	89.3235	87.2436
63	430	0.0680	0.0287	0.5357	0.3527	89.8592	87.5962
64	810	0.1280	0.0540	0.5152	0.3473	90.3743	87.9436
65	30	0.0047	0.0020	0.5136	0.3427	90.8879	88.2862
66	570	0.0901	0.0380	0.4346	0.3327	91.3225	88.6189
67	1,390	0.2197	0.0927	0.3966	0.3320	91.7191	88.9509
68	3,250	0.5136	0.5136	0.3935	0.3273	92.1126	89.2782

TABLE B. 20: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	150	0.0237	0.0100	0.3903	0.3260	92.5029	89.6042
70	9,960	1.5739	0.6640	0.3856	0.3193	92.8885	89.9235
71	4.910	0.7759	0.3273	0.3808	0.3120	93.2693	90.2355
72	3,680	0.5815	0.2453	0.3793	0.3100	93.6486	90.5455
73	3,390	0.5357	0.2260	0.3714	0.3047	94.0199	90.8502
74	3,810	0.6021	0.2540	0.3508	0.2840	94.3707	91.1342
75	0	0.0	0.0	0.3477	0.2740	94.7184	91.4081
76	870	0.1375	0.0580	0.3429	0.2727	95.0613	91.6808
77	68,620	10.8437	4.5747	0.3255	0.2693	95.3868	91.9501
78	6,040	0.9545	0.4027	0.2797	0.2660	95.6665	92.2161
79	0	0.0	0.0	0.2655	0.2607	95.9320	92.4768
80	8,260	1.3053	0.5507	0.2370	0.2600	96.1690	92.7368
81	1,390	0.2197	0.0927	0.2370	0.2540	96.4061	92.9908
82	11,560	1.8268	0.7707	0.2323	0.2520	96.6383	93.2428
83	460	0.0727	0.0307	0.2323	0.2487	96.8706	93.4914
84	4,650	0.7348	0.3100	0.2197	0.2453	97.0903	93.7368
85	550	0.0869	0.0367	0.2197	0.2353	97.3099	93.9721
86	20	0.0032	0.0013	0.2118	0.2333	97.5217	94.2054
87	210	0.0332	0.0140	0.1865	0.2260	97.7081	94.4314
88	5,560	0.8786	0.3707	0.1817	0.2260	97.8898	94.6574
89	2,200	0.3477	0.1467	0.1754	0.2173	98.0652	94.8747
90	3,990	0.6305	0.2660	0.1722	0.2167	98.2375	95.0914
91	15,290	2.4162	1.0193	0.1580	0.2093	98.3955	95.3007
92	30	0.0047	0.0020	0.1454	0.1833	98.5409	95.4840
93	4,990	0.7885	0.3327	0.1438	0.1727	98.6847	95.6567
94	55,440	8.7609	3.6960	0.1375	0.1673	98.8222	95.8240
95	10,950	1.7304	0.7300	0.1280	0.1660	98.9501	95.9900
96	2,750	0.4346	0.1833	0.1122	0.1647	99.0623	96.1547
97	2,170	0.3429	0.1447	0.1075	0.1627	99.1698	96.3173
98	1,000	0.1580	0.0667	0.0932	0.1607	99.2630	96.4780
99	9,050	1.4301	0.6033	0.0901	0.1600	99.3531	96.6380
100	5,710	0.9023	0.3807	0.0885	0.1567	99.4416	96.7946
101	5,560	0.8786	0.3707	0.0869	0.1480	99.5285	96.9426
102	910	0.1438	0.0607	0.0727	0.1467	99.6012	97.0893

TABLE B. 20: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,470	0.2323	0.0980	0.0680	0.1447	99.6691	97.2339
104	1,150	0.1817	0.0767	0.0600	0.1373	99.7292	97.3713
105	2,220	0.3508	0.1480	0.0506	0.1327	99.7797	97.5039
106	1,470	0.2323	0.0980	0.0458	0.1233	99.8255	97.6272
107	5,290	0.8360	0.3527	0.0395	0.1180	99.8651	97.7452
108	1,680	0.2655	0.1120	0.0332	0.1120	99.8982	97.8572
109	3,910	0.6179	0.2607	0.0332	0.1013	99.9314	97.9586
110	12,410	1.9611	0.8273	0.0300	0.1000	99.9614	98.0585
111	7,050	1.1141	0.4700	0.0237	0.1000	99.9851	98.1585
112	10	0.0016	0.0007	0.0047	0.0980	99.9898	98.2565
113	250	0.0395	0.0167	0.0047	0.0980	99.9946	98.3545
114	1,110	0.1754	0.0740	0.0032	0.0927	99.9977	98.4472
115	380	0.0600	0.0253	0.0016	0.0927	99.9993	98.5399
116	3,500	0.5531	0.2333	0.0	0.0893	99.9993	98.6292
117	1,090	0.1722	0.0727	0.0	0.0787	99.9993	98.7078
Total all manufacturing	632,810	99.9997		99.9997		8757.1937	
118	93,980		6.2653		0.0767		98.7845
119	7,180		0.4787		0.0740		98.8585
120	13,320		0.8880		0.0727		98.9312
121	1,850		0.1233		0.0727		99.0038
122	40,060		2.6707		0.0667		99.0705
123	16,460		1.0973		0.0667		99.1371
124	12,680		0.8453		0.0620		99.1991
125	450		0.0300		0.0613		99.2605
126	4,670		0.3047		0.0607		99.3211
127	240		0.0160		0.0580		99.3791
128	14,720		0.9813		0.0560		99.4351
129	1,520		0.1013		0.0540		99.4891
130	23,970		1.5980		0.0473		99.5364
131	124,920		8.3280		0.0453		99.5818
132	10,680		0.7120		0.0393		99.6211
133	5,770		0.3847		0.0380		99.6591

TABLE B. 20: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	18,610		1.2407		0.0373		99.6964
135	4,110		0.2740		0.0367		99.7330
136	61,230		4.0820		0.0307		99.7637
137	4,260		0.2840		0.0300		99.7937
138	39,010		2.6007		0.0287		99.8224
139	840		0.0560		0.0253		99.8477
140	4,040		0.2693		0.0213		99.8690
141	5,210		0.3473		0.0213		99.8904
142	2,590		0.1727		0.0193		99.9097
143	1,000		0.0667		0.0167		99.9263
144	23,740		1.5827		0.0160		99,9423
145	5,140		0.3427		0.0140		99.9563
146	4,090		0.2727		0.0140		99.9703
147	22,620		1.5080		0.0127		99.9830
148	1,090		0.0727		0.0100		99.9930
149	4,680		0.3120		0.0020		99.9950
150	16,460		1.0973		0.0020		99.9970
151	5,540		0.3693		0.0013		99.9983
152	27,250		1.8167		0.0007		99.9990
153	43,380		2.8920		0.0		99.9990
154	320		0.0213		0.0		99.9990
Grand Total	1,500,000		100.0002		100.0002		12872.1252

Source of Data: Ministry of Labour Gazette, May, 1960

TABLE B. 21: CALCULATION OF THE TRESS INDICES FOR THE WEST MIDLANDS FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	48,420		2.2573		6.9818		6.9818
2	870		0.0406		6.8438		13.8256
3	30		0.0014		6.7375		20.5632
4	64,010		2.9841		5.5664		26.1296
5	1,460		0.0681		3.7790		29.9086
6	1,970		0.0918		2.9841		32.8927
7	680		0.0317		2.8093		35.7020
8	1,130	0.0986	0.0527	12.8111	2.6252	12.8111	38.3272
9	17,070	1.4897	0.7958	12.6121	2.5716	25.4282	40.8988
10	1,780	0.1553	0.0830	4.9141	2.3576	30.3374	43.2563
11	5,960	0.5201	0.2779	4.4132	2.2573	34.7506	45.5137
12	2,740	0.2391	0.1277	3.1548	1.9347	37.9053	47.4484
13	560	0.0489	0.0261	3.1120	1.7441	41.0173	49.1924
14	14,880	1.2986	0.6937	2.9087	1.6988	43.9260	50.8913
15	5,280	0.4608	0.2462	2.7638	1.6853	46.6898	52.5766
16	540	0.0471	0.0252	2.5033	1.6625	49.1936	54.2390
17	2,060	0.1708	0.0960	2.2681	1.6177	51.4617	55.8567
18	13,490	1.1773	0.6289	2.2524	1.5538	53.7141	57.4106
19	4,380	0.3822	0.2042	2.2419	1.4765	55.9560	58.8870
20	20	0.0017	0.0009	2.2131	1.3375	58.1692	60.2245
21	490	0.0428	0.0228	2.2131	1.2793	60.3823	61.5038
22	80	0.0070	0.0037	2.1669	1.2298	62.5492	62.7336
23	560	0.0439	0.0261	2.1555	1.2117	64.7047	63.9453
24	15,800	1.3789	0.7366	1.8169	1.2033	66.5217	65.1485
25	1,050	0.0916	0.0490	1.7201	1.1977	68.2417	66.3462
26							
27	4,230	0.3691	0.1972	1.4897	1.1823	69.7314	67.5285
28	690	0.0602	0.0322	1.3789	1.1823	71.1103	68.7108
29	3,710	0.3238	0.1730	1.2986	1.1576	72.4088	69.8683
30	310	0.0271	0.0145	1.2846	1.1515	73.6934	71.0198
31	25,360	2.2131	1.1823	1.1773	1.0979	74.8707	72.1177
32	25,810	2.2524	1.2033	1.0856	1.0685	75.9563	73.1863
33	35,660	3.1120	1.6625	1.0394	0.9706	76.9956	74.1569
34	19,710	1.7201	0.9189	0.9940	0.9189	77.9896	75.0758

TABLE B. 21:(continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	28,690	2.5038	1.3375	0.9451	0.8741	78.9347	75.9499
36	2,820	0.2461	0.1315	0.9242	0.8420	79.8589	76.7918
37	24,830	2.1669	1.1576	0.8613	0.8284	80.7203	77.6203
38	12,440	1.0856	0.5800	0.8421	0.7958	81.5624	78.4160
39	7,900	0.6894	0.3683	0.7915	0.7366	82.3539	79.1526
40	2,120	0.1850	0.0988	0.6894	0.6937	83.0433	79.8463
41	1,060	0.0925	0.0494	0.6397	0.6862	83.6830	80.5326
42	4,510	0.3936	0.2103	0.6118	0.6289	84.2948	81.1615
43	1,700	0.1484	0.0793	0.5969	0.5995	84.8917	81.7610
44	25,990	2.2681	1.2117	0.5830	0.5800	85.4746	82.3409
45	24,700	2.1555	1.1515	0.5725	0.5767	86.0471	82.9176
46	33,330	2.9087	1.5538	0.5681	0.5622	86.6152	83.4798
47							
48	5,910	0.5158	0.2755	0.5533	0.5552	87.1685	84.0351
49	810	0.0707	0.0378	0.5201	0.5543	87.6886	84.5894
50	50,570	4.4132	2.3576	0.5158	0.5310	88.2044	85.1204
51	3,260	0.2845	0.1520	0.4966	0.5049	88.7009	85.6252
52	9,070	0.7915	0.4228	0.4608	0.4937	89.1617	86.1189
53	6,680	0.5830	0.3114	0.4311	0.4858	895928	86.6047
54	11,910	1.0394	0.5552	0.4250	0.4601	90.0178	87.0648
55	31,670	2.7638	1.4765	0.4163	0.4499	90.4340	87.5147
56	130	0.0113	0.0061	0.4041	0.4228	90.8381	87.9376
57	280	0.0201	0.0107	0.3936	0.4019	91.2317	88.3394
58	146,800	12.8111	6.8438	0.3822	0.3683	91.6139	88.7077
59	20,820	1.8169	0.9706	0.3709	0.3417	91.9848	89.0494
60	36,150	3.1548	1.6853	0.3691	0.3343	92.3539	89.3837
61	2,150	0.1876	0.1002	0.3569	0.3268	92.7108	89.7105
62	9,650	0.8421	0.4499	0.3403	0.3189	93.0512	90.0294
63	1,720	0.1501	0.0802	0.3395	0.3114	93.3906	90.3408
64	6,340	0.5533	0.2956	0.3238	0.3077	93.7144	90.6485
65	70	0.0061	0.0033	0.2845	0.3058	93.9989	90.9543
66	25,360	2.2131	1.1823	0.2609	0.3035	94.2598	91.2578
67	6,560	0.5725	0.3058	0.2592	0.2960	94.5190	91.5538
68	2,990	0.2609	0.1394	0.2496	0.2956	94.7686	91.8493

TABLE B.21: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	10,590	0.9242	0.4937	0.2461	0.2779	95.0147	92.1272
70	144,520	12.6121	6.7375	0.2391	0.2755	95.2538	92.4027
71	6,840	0.5969	0.3189	0.2330	0.2653	95.4868	92.6680
72	2,540	0.2217	0.1184	0.2217	0.2559	95.7084	92.9239
73	2.100	0.1833	0.0979	0.2208	0.2462	95.9292	93.1700
74	2,260	0.1972	0.1054	0.2182	0.2303	96.1474	93.4003
75	0	0.0	0.0	0.2112	0.2270	96.3586	93.6274
76	380	0.0332	0.0177	0.1972	0.2224	96.5558	93.8497
77	3,900	0.3403	0.1818	0.1876	0.2159	96.7434	94.0656
78	20	0.0017	0.0009	0.1850	0.2103	96.9284	94.2758
79	10,830	0.9451	0.5049	0.1833	0.2042	97.1117	94.4800
80	4,250	0.3709	0.1981	0.1798	0.1981	97.2914	94.6781
81	1,710	0.1492	0.0797	0.1719	0.1972	97.4633	94.8753
82	1,740	0.1518	0.0811	0.1553	0.1907	97.6187	95.0660
83	530	0.0463	0.0247	0.1553	0.1818	97.7740	95.2478
84	1,440	0.1257	0.0671	0.1553	0.1814	97.9293	95.4292
85	4,870	0.4250	0.2270	0.1518	0.1730	98.0812	95.6021
86	80	0.0070	0.0037	0.1501	0.1655	98.2313	95.7676
87	1,230	0.1073	0.0573	0.1492	0.1571	98.3805	95.9247
88	7,010	0.6118	0.3268	0.1484	0.1520	98.5288	96.0767
89	630	0.0550	0.0294	0.1326	0.1510	98.6615	96.2278
90	940	0.0820	0.0438	0.1257	0.1394	98.7871	96.3671
91	4,090	0.3569	0.1907	0.1073	0.1385	98.8945	96.5056
92	790	0.0689	0.0368	0.1047	0.1333	98.9992	96.6389
93	2,500	0.2182	0.1166	0.0986	0.1315	99.0978	96.7704
94	4,770	0.4163	0.2224	0.0925	0.1277	99.1903	96.8981
95	11,390	0.9940	0.5310	0.0916	0.1245	99.2819	97.0226
96	56,310	4.9141	2.6252	0.0820	0.1184	99.3640	97.1410
97	7,330	0.6397	0.3417	0.0707	0.1179	99.4346	97.2589
98	1,200	0.1047	0.0559	0.0689	0.1166	99.5036	97.3755
99	9,870	0.8613	0.4601	0.0602	0.1128	99.5638	97.4883
100	6,510	0.5681	0.3035	0.0550	0.1054	99.6188	97.5936
101	5,690	0.4966	0.2653	0.0489	0.1002	99.6676	97.6938
102	1,780	0.1553	0.0830	0.489	0.0988	99.7165	97.7927

TABLE B. 21:(continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	2,420	0.2112	0.1128	0.0471	0.0979	99.7636	97.8906
104	2,970	0.2592	0.1385	0.0463	0.0960	99.8098	97.9866
105	1,520	0.1326	0.0709	0.0428	0.0918	99.8526	98.0784
106	2,670	0.2330	0.1245	0.0332	0.0918	99.8858	98.1703
107	3,890	0.3395	0.1814	0.0271	0.0862	99.9128	98.2565
108	2,860	0.2496	0.1333	0.0209	0.0830	99.9337	98.3395
109	4,940	0.4311	0.2303	0.0201	0.0830	99.9538	98.4225
110	14,720	1.2846	0.6862	0.0113	0.0830	99.9651	98.5054
111	25,690	2.2419	1.1977	0.0105	0.0811	99.9756	98.5865
112	120	0.0105	0.0056	0.0070	0.0802	99.9826	98.6667
113	1,970	0.1719	0.0918	0.0070	0.0797	99.9895	98.7464
114	2,530	0.2208	0.1179	0.0061	0.0793	99.9957	98.8257
115	240	0.0209	0. 112	0.0017	0.0709	99.9974	98.8965
116	4,630	0.4041	0.2159	0.0017	0.0681	99.9991	98.9646
117	1,780	0.1553	0.0830	0.0	0.0671	99.9991	99.0317
Total all manufacturing	1,145,880	99.9996		99.9996		9200.7344	
118	119,400		5.5664		0.0667		99.0984
119	12,860		0.5995		0.0573		99.1557
120	18,750		0.8741		0.0559		99.2117
121	3,240		0.1510		0.0545		99.2662
122	34,700		1.6177		0.0527		99.3189
123	23,550		1.0979		0.0499		99.3688
124	17,770		0.8284		0.0494		99.4182
125	350		0.0163		0.0490		99.4671
126	1,170		0.0545		0.0438		99.5109
127	200		0.0093		0.0406		99.5515
128	22,920		1.0685		0.0378		99.5892
129	1,430		0.0667		0.0368		99.6261
130	36,440		1.6988		0.0359		99.6619
131	149,760		6.9818		0.0322		99.6941
132	12,370		0.5767		0.0317		99.7258
133	11,890		0.5543		0.0294		99.7552

TABLE B. 21: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	26,380		1.2298		0.0261		99.7813
135	6,350		0.2960		0.0251		99.8073
136	81,060		3.7790		0.0252		99.8325
137	5,490		0.2559		0.0247		99.8572
138	55,160		2.5716		0.0228		99.8801
139	1,070		0.0499		0.0177		99.8978
140	8,620		0.4019		0.0163		99.9141
141	7,170		0.3343		0.0145		99.9285
142	3,550		0.1655		0.0135		99.9420
143	770		0.0359		0.0112		99.9532
144	41,500		1.9347		0.0107		99.9639
145	10,420		0.4858		0.0093		99.9733
146	3,370		0.1571		0.0061		99.9793
147	27,440		1.2793		0.0056		99.9849
148	1,850		0.0862		0.0037		99.9886
149	6,600		0.3077		0.0037		99.9924
150	18,060		0.8420		0.0033		99.9956
151	12,060		0.5622		0.0014		99.9970
152	37,410		1.7441		0.0009		99.9979
153	60,260		2.8093		0.0009		99.9989
154	290		0.0135		0.0		99.9989
Grand Total	2,145,000		99.9997		99.9997		12,940.3579

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 22: CALCULATION OF THE TRESS INDICES FOR YORKSHIRE AND HUMBERSIDE FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	29,680		1.6069		8.2967		8.2967
2	500		0.0271		8.0893		16.3860
3	4,340		0.2350		7.7466		24.1326
4	143,080		7.7466		5.5528		29.6854
5	1,970		0.1067		3.8159		33.5013
6	990		0.0536		3.7997		37.3010
7	60		0.0032		3.1597		40.4607
8	3,630	0.4430	0.1965	18.2347	2.9329	18.2347	43.3936
9	8,820	1.0764	0.4775	8.5651	2.4494	26.7999	45.8429
10	2,620	0.3198	0.1419	4.9111	2.1787	31.7109	48.0216
11	3,800	0.4638	0.2057	3.7944	1.9930	35.5053	50.0145
12	1,850	0.2258	0.1002	3.1683	1.7493	38.6736	51.7639
13	900	0.1098	0.0487	2.9877	1.6833	41.6612	53.4171
14	23,120	2.8217	1.2518	2.8217	1.6069	44.4829	55.0540
15	5,440	0.6639	0.2945	2.3689	1.5593	46.8518	56.6133
16	1,070	0.1306	0.0579	2.2517	1.4196	49.1035	58.0329
17	3,230	0.3942	0.1749	2.1211	1.4055	51.2247	59.4384
18	9,280	1.1326	0.5024	1.8087	1.3330	53.0334	60.7714
19	2,780	0.3393	0.1505	1.7574	1.3254	54.7908	62.0968
20	160	0.0195	0.0087	1.5622	1.2518	56.3530	63.3485
21	4,890	0.5968	0.2648	1.5463	1.1906	57.8993	64.5391
22	30	0.0037	0.0016	1.4560	1.0509	59.3553	65.5900
23	830	0.1013	0.0449	1.4047	1.0168	60.7600	66.6067
24	19,410	2.3689	1.0509	1.3779	1.0043	62.1379	67.6111
25	4,490	0.5480	0.2431	1.3620	0.9989	63.4999	68.6100
26							
27	3,310	0.4040	0.1792	1.3034	0.9572	64.8033	69.5672
28	4,810	0.5870	0.2604	1.2803	0.9410	66.0836	70.5082
29	340	0.0415	0.0184	1.2607	0.8803	67.3443	71.3885
30	1,350	0.1648	0.0731	1.1631	0.8024	68.5074	72.1909
31	70,180	8.5651	3.7997	1.1326	0.7796	69.6399	72.9705
32	720	0.0879	0.0390	1.0996	0.7174	70.7395	73.6879
33	11,290	1.3779	0.6113	1.0984	0.6930	71.8380	74.3609
34	910	0.1111	0.0493	1.0764	0.6860	72.9144	75.0669

TABLE B. 22: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	8,600	1.0496	0.4656	1.0496	0.6627	73.9640	75.7296
36	1,650	0.2014	0.0893	1.0313	0.6459	74.9952	76.3755
37	11,930	1.4560	0.6459	0.9764	0.6232	75.9716	76.9986
38	10,330	1.2607	0.5593	0.9556	0.6113	76.9272	77.6099
39	270	0.0330	0.0146	0.7713	0.6102	77.6985	78.2200
40	11,160	1.3620	0.6042	0.7677	0.6042	78.4662	78.8243
41	2,020	0.2465	0.1094	0.7372	0.6010	79.2033	79.4252
42	3,540	0.4320	0.1917	0.7372	0.5809	79.9404	80.0062
43	1,400	0.1709	0.0758	0.7274	0.5782	80.6678	80.5844
44	31,090	3.7944	1.6833	0.7201	0.5679	81.3879	81.1523
45	12,670	1.5463	0.6860	0.6773	0.5593	82.0652	81.7116
46	24,480	2.9877	1.3254	0.6639	0.5160	82.7291	82.2276
47							
48	3,750	0.4577	0.2030	0.6578	0.5024	83.3869	82.7300
49	250	0.0305	0.0135	0.6102	0.4878	83.9972	83.2178
50	14,400	1.7574	0.7796	0.5992	0.4873	84.5964	83.7051
51	370	0.0452	0.0200	0.5968	0.4775	85.1932	84.1826
52	540	0.0659	0.0292	0.5870	0.4656	85.7802	84.6482
53	3,220	0.3930	0.1743	0.5858	0.4575	86.3660	85.1057
54	3,440	0.4198	0.1862	0.5480	0.4331	86.9140	85.5388
55	4,240	0.5175	0.2296	0.5175	0.4239	87.4315	85.9628
56	5,900	0.7201	0.3194	0.4638	0.4115	87.8952	86.3742
57	820	0.1001	0.0444	0.4613	0.4071	88.3565	86.7814
58	18,450	2.2517	0.9989	0.4577	0.3573	88.8142	87.1387
59	20	0.0024	0.0011	0.4430	0.3422	89.2572	87.4809
60	9,000	1.0984	0.4873	0.4320	0.3406	89.6892	87.8214
61	6,040	0.7372	0.3270	0.4308	0.3270	90.1201	88.1487
62	10,490	1.2803	0.5679	0.4198	0.3270	90.5399	88.4754
63	860	0.1050	0.0466	0.4040	0.3227	90.9438	88.7981
64	10,680	1.3034	0.5782	0.4003	0.3221	91.3441	89.1202
65	8.000	0.9764	0.4331	0.3943	0.3194	91.7383	89.4397
66	1,340	0.1635	0.0726	0.3930	0.3005	92.1313	89.7401
67	9,530	1.1631	0.5160	0.3857	0.2945	92.5170	90.0347
68	3,780	0.4613	0.2047	0.3454	0.2918	92.8624	90.3265

TABLE B. 22: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	5,390	0.6578	0.2918	0.3393	0.2902	93.2016	90.6167
70	25,960	3.1683	1.4055	0.3295	0.2864	93.5311	90.9031
71	3,160	0.3857	0.1711	0.3234	0.2713	93.8546	91.1743
72	6,040	0.7372	0.3270	0.3222	0.2707	94.1767	91.4450
73	11,510	1.4047	0.6232	0.3198	0.2691	94.4965	91.7141
74	149,410	18.2347	8.0893	0.2941	0.2658	94.7906	91.9799
75	110	0.0134	0.0060	0.2734	0.2648	95.0640	92.2447
76	1,040	0.1269	0.0563	0.2575	0.2604	95.3215	92.5051
77	2,410	0.2941	0.1305	0.2502	0.2599	95.5717	92.7650
78	0	0.0	0.0	0.2465	0.2431	95.8182	93.0081
79	8,450	1.0313	0.4575	0.2355	0.2350	96.0537	93.2430
80	1,190	0.1452	0.0644	0.2258	0.2296	96.2795	93.4726
81	1,430	0.1745	0.0774	0.2160	0.2057	96.4955	93.6788
82	14,820	1.8087	0.8024	0.2111	0.2047	96.7066	93.8830
83	3,530	0.4308	0.1911	0.2087	0.2030	96.9153	94.0860
84	4,910	0.5992	0.2658	0.2014	0.1965	97.1167	94.2825
85	1,240	0.1513	0.0671	0.1818	0.1917	97.2986	94.4742
86	200	0.0244	0.0108	0.1745	0.1911	97.4731	94.6653
87	1,730	0.2111	0.0937	0.1709	0.1862	97.6439	94.8515
88	40,240	4.9111	2.1787	0.1648	0.1792	97.8087	95.0307
89	5,000	0.6102	0.2707	0.1635	0.1776	97.9722	95.2083
90	4,800	0.5858	0.2599	0.1513	0.1749	98.1235	95.3832
91	5,550	0.6773	0.3005	0.1452	0.1743	98.2688	95.5575
92	190	0.0232	0.0103	0.1355	0.1711	98.4042	95.7286
93	730	0.0891	0.0395	0.1306	0.1705	98.5348	95.8991
94	2,650	0.3234	0.1435	0.1269	0.1635	98.6617	96.0626
95	9,010	1.0996	0.4878	0.1257	0.1538	98.7874	96.2164
96	1,000	0.1220	0.0541	0.1220	0.1532	98.9095	96.3696
97	12,800	1.5622	0.6930	0.1111	0.1505	99.0205	96.5201
98	1,770	0.2160	0.0958	0.1098	0.1462	99.1304	96.6663
99	5,960	0.7274	0.3227	0.1050	0.1435	99.2353	96.8097
100	7,830	0.9556	0.4239	0.1013	0.1429	99.3366	96.9527
101	6,320	0.7713	0.3422	0.1001	0.1419	99.4367	97.0945
102	2,050	0.2502	0.1110	0.0891	0.1305	99.5257	97.2250

TABLE B. 22: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,710	0.2087	0.0926	0.0879	0.1213	99.6136	97.3463
104	2,700	0.3295	0.1462	0.0793	0.1142	99.6929	97.4605
105	1,490	0.1818	0.0807	0.0659	0.1110	99.7588	97.5715
106	2,110	0.2575	0.1142	0.0452	0.1094	99.8040	97.6808
107	3,280	0.4003	0.1776	0.0415	0.1067	99.8455	97.7875
108	2,830	0.3454	0.1532	0.0330	0.1045	99.8784	97.8920
109	6,290	0.7677	0.3406	0.0305	0.1002	99.9089	97.9921
110	17,380	2.1211	0.9410	0.0244	0.0964	99.9333	98.0885
111	2,640	0.3222	0.1429	0.0232	0.0958	99.9565	98.1843
112	650	0.0793	0.0352	0.0195	0.0937	99.9760	98.2780
113	1,110	0.1355	0.0601	0.0134	0.0926	99.9894	98.3706
114	1,930	0.2355	0.1045	0.0037	0.0893	99.9931	98.4599
115	30	0.0037	0.0016	0.0037	0.0807	99.9967	98.5405
116	2,240	0.2734	0.1213	0.0024	0.0785	99.9991	98.6190
117	1,030	0.1257	0.0558	0.0	0.0774	99.9991	98.6964
Total all manufacturing	819,370	99.9998		99.9998		9,005.1502	
118	102,560		5.5528		0.0758		98.7722
119	11,100		0.6010		0.0731		98.8453
120	18,550		1.0043		0.0726		98.9179
121	3,020		0.1635		0.0671		98.9850
122	45,240		2.4494		0.0644		99.0494
123	24,620		1.3330		0.0601		99.1095
124	16,260		0.8803		0.0585		99.1680
125	5,950		0.3221		0.0579		99.2259
126	10,730		0.5809		0.0563		99.2822
127	70		0.0038		0.0558		99.3380
128	18,780		1.0168		0.0541		99.3921
129	2,840		0.1538		0.0536		99.4457
130	36,810		1.9930		0.0493		99.4949
131	153,240		8.2967		0.0487		99.5437
132	11,270		0.6102		0.0466		99.5902
133	13,250		0.7174		0.0449		99.6351

TABLE B. 22: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	28,800		1.5593		0.0444		99.6795
135	6,600		0.3573		0.0395		99.7191
136	70,480		3.8159		0.0390		99.7580
137	4,970		0.2691		0.0357		99.7937
138	54,170		2.9329		0.0352		99.8289
139	1,080		0.0585		0.0292		99.8582
140	5,290		0.2864		0.0271		99.8852
141	7,600		0.4115		0.0200		99.9053
142	3,150		0.1705		0.0184		99.9237
143	1,450		0.0785		0.0146		99.9383
144	32,310		1.7493		0.0135		99.9518
145	7,520		0.4071		0.0108		99.9626
146	5,360		0.2902		0.0103		99.9729
147	26,220		1.4196		0.0087		99.9816
148	1,780		0.0964		0.0060		99.9875
149	5,010		0.2713		0.0038		99.9913
150	17,680		0.9572		0.0032		99.9945
151	12,240		0.6627		0.0016		99.9962
152	21,990		1.1906		0.0016		99.9978
153	58,360		3.1597		0.0011		99.9988
154	660		0.0357		0.0		99.9988
Grand Total	1,847,000		99.9998		99.9998		12,948.5598

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 23: CALCULATION OF THE TRESS INDICES FOR THE NORTH FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	33,290		2.5647		12.5108		12.5108
2	2,060		0.1567		9.3852		21.8960
3	1,230		0.0948		6.9106		28.8066
4	162,390		12.5108		3.8390		32.6456
5	2,510		0.1934		3.5824		36.2280
6	970		0.0747		3.5231		39.7511
7	3,410		0.2627		3.4284		43.1795
8	2,100	0.4720	0.1618	10.4506	3.1079	10.4506	46.2873
9	9,490	2.1328	0.7311	10.0011	3.0678	20.4517	49.3551
10	3,510	0.7889	0.2704	9.0662	2.9384	29.5179	52.2935
11	2,510	0.5664	0.1941	4.5174	2.5647	34.0352	54.8582
12	1,280	0.2877	0.0986	4.0948	2.2357	38.1301	57.0939
13	120	0.0270	0.0092	4.0139	2.1317	42.1440	59.2256
14	3,440	0.7731	0.2650	3.3217	1.5485	45.4657	60.7742
15	1,760	0.3956	0.1356	3.1824	1.5339	48.6481	62.3080
16	20	0.0045	0.0015	2.4587	1.4037	51.1068	63.7117
17	670	0.1506	0.0516	2.1328	1.3783	53.2396	65.0900
18	6,030	1.3552	0.4646	1.6946	1.3760	54.9342	66.4660
19	2,350	0.5281	0.1810	1.6788	1.2843	56.6130	67.7502
20	1,430	0.3214	0.1102	1.6406	1.2072	58.2536	68.9575
21	4,910	1.1035	0.3783	1.5103	1.1995	59.7639	70.1570
22	40	0.0090	0.0031	1.5080	1.1387	61.2719	71.2957
23	150	0.0337	0.0116	1.3822	1.0909	62.6541	72.3866
24	40,340	9.0662	3.1079	1.3552	0.9723	64.0093	73.3588
25	1,890	0.4248	0.1456	1.3327	0.9314	65.3420	74.2902
26							
27	3,970	0.8922	0.3059	1.2451	0.8428	66.5871	75.1331
28	4,530	1.0158	0.3482	1.2294	0.8020	67.8164	75.9351
29	2,230	0.5012	0.1718	1.1777	0.7881	68.9941	76.7232
30	350	0.0708	0.0270	1.1260	0.7311	70.1201	77.4543
31	44,500	10.0011	3.4284	1.1237	0.6803	71.2438	78.1345
32	1,540	0.3461	0.1186	1.1170	0.6233	72.3607	78.7578
33	7,540	1.6946	0.5809	1.1035	0.5809	73.4642	79.3387
34	1,170	0.2630	0.0901	1.0541	0.5755	74.5183	79.9142

TABLE B. 23: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	2,310	0.5192	0.1780	1.0248	0.5624	75.5431	80.4766
36	1,560	0.3506	0.1202	1.0158	0.5439	76.5589	81.0205
37	3,180	0.7147	0.2450	0.9125	0.5177	77.4714	81.5382
38	270	0.0607	0.0208	0.8922	0.5169	78.3636	82.0552
39	320	0.0719	0.0247	0.8271	0.5116	79.1907	82.5667
40	100	0.0225	0.0077	0.7889	0.5062	79.9795	83.0729
41	2,760	0.6203	0.2126	0.7754	0.4738	80.7549	83.5467
42	7,300	1.6406	0.5624	0.7731	0.4646	81.5280	84.0112
43	560	0.1259	0.0431	0.7394	0.4569	82.2674	84.4681
44	10,940	2.4587	0.8428	0.7147	0.4468	82.9821	84.9149
45	20,100	4.5174	1.5485	0.6697	0.4268	83.6518	85.3417
46	14,160	3.1824	1.0909	0.6203	0.4214	84.2721	85.7631
47							
48	1,330	0.2989	0.1025	0.5686	0.4037	84.8407	86.1668
49	20	0.0045	0.0015	0.5664	0.3860	85.4070	86.5528
50	18,220	4.0948	1.4037	0.5664	0.3852	85.9734	86.9380
51	1,620	0.3641	0.1248	0.5461	0.3829	86.5195	87.3209
52	4,060	0.9125	0.3128	0.5281	0.3783	87.0476	87.6991
53	7,470	1.6788	0.5755	0.5259	0.3613	87.5735	88.0605
54	2,340	0.5259	0.1803	0.5192	0.3513	88.0927	88.4118
55	3,680	0.8271	0.2835	0.5012	0.3482	88.5939	88.7600
56	46,500	10.4506	3.5824	0.4810	0.3328	89.0748	89.0928
57	17,860	4.0139	1.3760	0.4720	0.3128	89.5468	89.4056
58	2,140	0.4810	0.1649	0.4675	0.3059	90.0142	89.7114
59	10	0.0022	0.0008	0.4630	0.2943	90.4772	90.0057
60	2,980	0.6697	0.2296	0.4450	0.2835	90.9222	90.2892
61	5,930	1.3327	0.4569	0.4248	0.2835	91.3469	90.5727
62	5,470	1.2294	0.4214	0.4068	0.2704	91.7537	90.8431
63	30	0.0067	0.0023	0.4045	0.2658	92.1582	91.1089
64	160	0.0360	0.0123	0.4000	0.2650	92.5583	91.3739
65	0	0.0	0.0	0.3956	0.2627	92.9538	91.6366
66	220	0.0494	0.0169	0.3956	0.2535	93.3493	91.8901
67	2,530	0.5686	0.1949	0.3956	0.2450	93.7449	92.1351
68	2,520	0.5664	0.1941	0.3686	0.2411	94.1135	92.3762

TABLE B. 23:(continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	30	0.0067	0.0023	0.3641	0.2388	94.4775	92.6150
70	6,150	1.3822	0.4738	0.3551	0.2373	94.8326	92.8523
71	1,980	0.4450	0.1525	0.3506	0.2296	95.1832	93.0819
72	470	0.1056	0.0362	0.3461	0.2126	95.5293	93.2945
73	1,640	0.3686	0.1263	0.3214	0.1995	95.8507	93.4940
74	6,710	1.5080	0.5169	0.2989	0.1949	96.1496	93.6889
75	0	0.0	0.0	0.2877	0.1941	96.4373	93.8831
76	2,080	0.4675	0.1602	0.2719	0.1941	96.7092	94.0772
77	2,060	0.4630	0.1587	0.2630	0.1934	96.9721	94.2706
78	0	0.0	0.0	0.2585	0.1872	97.2306	94.4578
79	970	0.2180	0.0747	0.2180	0.1810	97.4486	94.6388
80	10	0.0022	0.0008	0.2135	0.1803	97.6621	94.8191
81	510	0.1146	0.0393	0.1955	0.1780	97.8586	94.9971
82	1,150	0.2585	0.0886	0.1551	0.1718	98.0126	95.1689
83	390	0.0877	0.0300	0.1506	0.1649	98.1632	95.3337
84	1,780	0.4000	0.1371	0.1326	0.1618	98.2958	95.4955
85	590	0.1326	0.0455	0.1259	0.1602	98.4217	95.6557
86	420	0.0944	0.0324	0.1236	0.1587	98.5453	95.8144
87	690	0.1551	0.0532	0.1146	0.1587	98.6599	95.9731
88	14,780	3.3217	1.1387	0.1101	0.1525	98.7700	96.1257
89	1,210	0.2719	0.0932	0.1056	0.1487	98.8756	96.2743
90	1,580	0.3551	0.1217	0.0944	0.1456	98.9700	96.4199
91	6,720	1.5103	0.5177	0.0921	0.1441	99.0621	96.5640
92	90	0.0202	0.0069	0.0877	0.1394	99.1498	96.7034
93	550	0.1236	0.0424	0.0877	0.1387	99.2374	96.8421
94	3,450	0.7754	0.2658	0.0854	0.1371	99.3228	96.9792
95	4,690	1.0541	0.3613	0.0809	0.1356	99.4037	97.1148
96	330	0.0742	0.0254	0.0787	0.1356	99.4824	97.2504
97	4,560	1.0248	0.3513	0.0742	0.1356	99.5565	97.3860
98	410	0.0921	0.0316	0.0742	0.1263	99.6307	97.5123
99	5,540	1.2451	0.4268	0.0719	0.1248	99.7026	97.6371
100	5,010	1.1260	0.3860	0.0607	0.1217	99.7633	97.7589
101	5,000	1.1237	0.3852	0.0494	0.1202	99.8127	97.8790
102	870	0.1955	0.0670	0.0360	0.1186	99.8487	97.9977

TABLE B. 23: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	490	0.1101	0.0378	0.0337	0.1102	99.8824	98.1078
104	330	0.0742	0.0254	0.0270	0.1102	99.9093	98.2180
105	950	0.2135	0.0732	0.0225	0.1025	99.9318	98.3205
106	2,430	0.5461	0.1872	0.0202	0.0986	99.9520	98.4191
107	1,760	0.3956	0.1356	0.0112	0.0948	99.9633	98.5138
108	1,760	0.3956	0.1356	0.0090	0.0932	99.9722	98.6071
109	3,290	0.7394	0.2535	0.0067	0.0901	99.9790	98.6972
110	4,970	1.1170	0.3829	0.0067	0.0886	99.9857	98.7858
111	1,810	0.4068	0.1394	0.0045	0.0755	99.9902	98.8613
112	50	0.0112	0.0039	0.0045	0.0747	99.9947	98.9360
113	380	0.0854	0.0293	0.0022	0.0747	99.9969	99.0107
114	390	0.0877	0.0300	0.0022	0.0732	99.9992	99.0839
115	360	0.0809	0.0277	0.0	0.0670	99.9992	99.1509
116	5,240	1.1777	0.4037	0.0	0.0670	99.9992	99.2179
117	1,800	0.4045	0.1387	0.0	0.0532	99.9992	99.2711
Total all manufacturing	444,950	100.0704		100.0704		9102.3435	
118	89,700		6.9106		0.0516		99.3227
119	6,570		0.5062		0.0455		99.3681
120	10,410		0.8020		0.0431		99.4113
121	2,590		0.1995		0.0431		99.4544
122	27,670		2.1317		0.0424		99.4968
123	19,910		1.5339		0.0393		99.5360
124	10,230		0.7881		0.0378		99.5738
125	12,620		0.9723		0.0362		99.6100
126	8,830		0.6803		0.0324		99.6423
127	50		0.0039		0.0316		99.6739
128	12,090		0.9314		0.0300		99.7040
129	1,870		0.1441		0.0300		99.7340
130	17,890		1.3783		0.0293		99.7633
131	121,820		9.3852		0.0277		99.7910
132	7,060		0.5439		0.0270		99.8180
133	4,320		0.3328		0.0254		99.8434

TABLE B. 23: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	16,670		1.2843		0.0254		99.8688
135	3,100		0.2388		0.0247		99.8935
136	49,830		3.8390		0.0208		99.9143
137	3,080		0.2373		0.0169		99.9312
138	38,140		2.9384		0.0123		99.9435
139	870		0.0670		0.0116		99.9551
140	3,820		0.2943		0.0092		99.9643
141	8,090		0.6233		0.0077		99.9720
142	3,680		0.2835		0.0069		99.9789
143	980		0.0755		0.0039		99.9828
144	39,820		3.0678		0.0039		99.9866
145	5,800		0.4468		0.0031		99.9897
146	1,930		0.1487		0.0023		99.9920
147	15,570		1.1995		0.0023		99.9943
148	1,430		0.1102		0.0015		99.9958
149	3,130		0.2411		0.0015		99.9973
150	15,670		1.2072		0.0008		99.9981
151	6,640		0.5116		0.0008		99.9989
152	29,020		2.2357		0.0		99.9989
153	45,730		3.5281		0.0		99.9989
154	560		0.0431		0.0		99.9989
Grand Total	1,298,000		99.9995		99.9995		13,275.5494

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 24: CALCULATION OF THE TRESS INDICES FOR THE NORTHWEST FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	25,250		0.8528		8.4607		8.4607
2	330		0.0111		5.5535		14.0142
3	1,800		0.0608		3.8332		17.8473
4	53,040		1.7913		3.5110		21.3583
5	3,820		0.1290		3.1253		24.4836
6	780		0.0263		3.1044		27.5880
7	2,820		0.0952		3.0118		30.5998
8	8,250	0.5902	0.2786	8.1196	2.9524	8.1196	33.5521
9	22,270	1.5931	0.7521	6.6201	2.5133	14.7397	36.0655
10	17,320	1.2390	0.5849	5.3239	2.2283	20.0635	38.2938
11	8,410	0.6016	0.2840	3.9925	1.9436	24.0560	40.2374
12	5,780	0.4135	0.1952	3.3523	1.8923	27.4083	42.1296
13	4,230	0.3026	0.1429	3.0690	1.8843	30.4773	44.0144
14	12,120	0.8670	0.4093	2.6583	1.7913	33.1356	45.8057
15	15,100	1.0802	0.5100	2.4044	1.5826	35.5400	47.3883
16	5,340	0.3820	0.1803	2.1697	1.4488	37.7097	48.8371
17	7,140	0.5108	0.2411	2.1283	1.4434	39.8380	50.2805
18	9,990	0.7147	0.3374	2.1046	1.4154	41.9426	51.6959
19	5,590	0.3999	0.1888	1.9630	1.3995	43.9056	53.0954
20	6,900	0.4936	0.2330	1.7670	1.2617	45.6726	54.3572
21	620	0.0444	0.0209	1.7148	1.2550	47.3874	55.6121
22	8,550	0.6116	0.2888	1.6997	1.2290	49.0871	56.8411
23	2,530	0.1810	0.0854	1.5931	1.1351	50.6803	57.9762
24	74,420	5.3239	2.5133	1.5760	1.1071	52.2562	59.0833
25	8,950	0.6403	0.3023	1.5502	1.0243	53.8064	60.1076
26							
27	7,520	0.5380	0.2540	1.4007	1.0047	55.2072	61.1123
28	23,760	1.6997	0.8024	1.3936	0.9936	56.6007	62.1059
29	3,160	0.2261	0.1067	1.3392	0.9656	57.9399	63.0714
30	1,210	0.0866	0.0409	1.3285	0.9267	59.2683	63.9981
31	17,850	1.2770	0.6028	1.3020	0.9166	60.5703	64.9147
32	1,640	0.1173	0.0554	1.2770	0.8831	61.8473	65.7978
33	9,750	0.6975	0.3293	1.2390	0.8528	63.0863	66.6506
34	5,450	0.3899	0.1841	1.1675	0.8528	64.2538	67.5033

TABLE B. 24: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	7,670	0.5487	0.2590	1.1425	0.8342	65.3963	68.3375
36	3,730	0.2668	0.1260	1.0802	0.8095	66.4765	69.1470
37	9,760	0.6982	0.3296	1.0688	0.8024	67.5452	69.9494
38	2,500	0.1788	0.0844	1.0073	0.7521	68.5525	70.7015
39	3,350	0.2397	0.1131	1.0022	0.7440	69.5547	71.4455
40	21,670	1.5502	0.7318	0.9822	0.7318	70.5369	72.1774
41	830	0.0594	0.0280	0.9808	0.6613	71.5177	72.8386
42	5,520	0.3949	0.1864	0.9379	0.6579	72.4556	73.4965
43	2,140	0.1531	0.0723	0.8978	0.6467	73.3534	74.1432
44	42,900	3.0690	1.4488	0.8799	0.6322	74.2333	74.7754
45	19,580	1.4007	0.6613	0.8670	0.6272	75.1003	75.4026
46	27,440	1.9630	0.9267	0.8570	0.6147	75.9573	76.0172
47							
48	7,320	0.5237	0.2472	0.7640	0.6069	76.7213	76.6241
49	280	0.0200	0.0095	0.7640	0.6028	77.4854	77.2270
50	55,810	3.9925	1.8848	0.7540	0.5849	78.2394	77.8119
51	18,720	1.3392	0.6322	0.7318	0.5606	78.9712	78.3725
52	10,680	0.7640	0.3607	0.7154	0.5512	79.6866	78.9237
53	18,200	1.3020	0.6147	0.7147	0.5393	80.4012	79.4630
54	3.910	0.2797	0.1320	0.7039	0.5282	81.1051	79.9912
55	13,730	0.9822	0.4637	0.6982	0.5100	81.8033	80.5011
56	30,330	2.1697	1.0243	0.6975	0.5046	82.5008	81.0057
57	12,550	0.8978	0.4238	0.6403	0.5042	83.1411	81.5099
58	29,750	2.1283	1.0047	0.6124	0.4816	83.7534	81.9915
59	520	0.0372	0.0176	0.6116	0.4755	84.3651	82.4670
60	46,860	3.3523	1.5826	0.6023	0.4732	84.9674	82.9401
61	19,480	1.3936	0.6579	0.6016	0.4637	85.5691	83.4038
62	5,880	0.4206	0.1986	0.5902	0.4630	86.1592	83.8668
63	280	0.0200	0.0095	0.5487	0.4428	86.7079	84.3096
64	1,630	0.1166	0.0550	0.5430	0.4238	87.2509	84.7334
65	110	0.0079	0.0037	0.5380	0.4154	87.7889	85.1488
66	1,940	0.1388	0.0655	0.5237	0.4093	88.3125	85.5581
67	9,840	0.7039	0.3323	0.5108	0.4046	88.8233	85.9627
68	5,320	0.3806	0.1797	0.5094	0.3887	89.3326	86.3464

TABLE B. 24: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	420	0.0300	0.0142	0.5079	0.3607	89.8405	86.7070
70	33,610	2.4044	1.1351	0.5022	0.3607	90.3427	87.0677
71	10,230	0.7318	0.3455	0.4936	0.3560	90.8363	87.4237
72	113,500	8.1196	3.8332	0.4936	0.3455	91.3299	87.7692
73	92,540	6.6201	3.1253	0.4206	0.3377	91.7506	88.1069
74	10,680	0.7640	0.3607	0.4135	0.3374	92.1640	88.4443
75	230	0.0165	0.0078	0.3999	0.3323	92.5639	88.7766
76	2,670	0.1910	0.0902	0.3949	0.3296	92.9588	89.1062
77	7,590	0.5430	0.2563	0.3899	0.3293	93.3487	89.4355
78	20	0.0014	0.0007	0.3820	0.3100	93.7307	89.7455
79	1,600	0.1145	0.0540	0.3806	0.3023	94.1113	90.0477
80	3,450	0.2468	0.1165	0.3699	0.2891	94.4811	90.3368
81	11,980	0.8570	0.4046	0.3670	0.2888	94.8481	90.6256
82	37,160	2.6583	1.2550	0.3527	0.2884	95.2008	90.9140
83	13,110	0.9379	0.4428	0.3341	0.2861	95.5349	91.2000
84	7,100	0.5079	0.2398	0.3026	0.2844	95.8374	91.4844
85	3,480	0.2490	0.1175	0.2904	0.2840	96.1279	91.7684
86	350	0.0250	0.0118	0.2797	0.2786	96.4076	92.0470
87	18,570	1.3285	0.6272	0.2668	0.2675	96.6744	92.3145
88	14,940	1.0688	0.5046	0.2490	0.2590	96.9234	92.5735
89	6,900	0.4936	0.2330	0.2468	0.2563	97.1702	92.8298
90	14,010	1.0022	0.4732	0.2397	0.2540	97.4098	93.0838
91	22,030	1.5760	0.7440	0.2261	0.2472	97.6359	93.3310
92	4,930	0.3527	0.1665	0.2239	0.2411	97.8598	93.5721
93	5,130	0.3670	0.1733	0.1910	0.2405	98.0508	93.8126
94	14,080	1.0073	0.4755	0.1810	0.2398	98.2318	94.0524
95	7,120	0.5094	0.2405	0.1788	0.2394	98.4106	94.2918
96	1,440	0.1030	0.0486	0.1767	0.2371	98.5873	94.5289
97	24,700	1.7670	0.8342	0.1531	0.2330	98.7404	94.7619
98	460	0.0329	0.0155	0.1388	0.2330	98.8791	94.9949
99	12,300	0.8799	0.4154	0.1374	0.1986	99.0165	95.1935
100	8,560	0.6124	0.2891	0.1173	0.1952	99.1338	95.3887
101	10,000	0.7154	0.3377	0.1166	0.1888	99.2504	95.5775
102	3,130	0.2239	0.1057	0.1159	0.1864	99.3663	95.7639

TABLE B. 24: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,920	0.1374	0.0648	0.1145	0.1841	99.4807	95.9479
104	4,060	0.2904	0.1371	0.1030	0.1803	99.5837	96.1283
105	2,470	0.1767	0.0834	0.0866	0.1797	99.6703	96.3079
106	16,320	1.1675	0.5512	0.0594	0.1756	99.7297	96.4835
107	10,540	0.7540	0.3560	0.0444	0.1746	99.7740	96.6581
108	13,710	0.9808	0.4630	0.0372	0.1733	99.8112	96.8314
109	15,970	1.1425	0.5393	0.0343	0.1665	99.8455	96.9979
110	23,970	1.7148	0.8095	0.0329	0.1604	99.8784	97.1583
111	29,420	2.1046	0.9936	0.0300	0.1577	99.9085	97.3160
112	8,420	0.6023	0.2844	0.0250	0.1429	99.9335	97.4588
113	1,620	0.1159	0.0547	0.0200	0.1371	99.9535	97.5960
114	4,670	0.3341	0.1577	0.0200	0.1320	99.9735	97.7280
115	480	0.0343	0.0162	0.0165	0.1290	99.9900	97.8570
116	5,170	0.3699	0.1746	0.0079	0.1260	99.9978	97.9830
117	7,020	0.5022	0.2371	0.0014	0.1175	99.9993	98.1005
Total all manufacturing	1,397,860	100.0002		100.0002		8488.6504	
118	164,440		5.5535		0.1165		98.2170
119	16,600		0.5606		0.1131		98.3301
120	27,140		0.9166		0.1067		98.4368
121	4,750		0.1604		0.1057		98.5425
122	57,550		1.9436		0.0952		98.6378
123	37,360		1.2617		0.0902		98.7279
124	25,250		0.8528		0.0854		98.8134
125	41,910		1.4154		0.0851		98.8985
126	41,440		1.3995		0.0844		98.9829
127	1,500		0.0507		0.0834		99.0663
128	32,780		1.1071		0.0800		99.1463
129	11,360		0.3837		0.0723		99.2186
130	87,420		2.9524		0.0655		99.2841
131	250,520		8.4607		0.0648		99.3489
132	19,150		0.6467		0.0608		99.4097
133	17,970		0.6069		0.0554		99.4651

TABLE B. 24: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	56,030		1.8923		0.0550		99.5201
135	9,180		0.3100		0.0547		99.5748
136	103,960		3.5110		0.0540		99.6289
137	8,470		0.2861		0.0507		99.6795
138	89,180		3.0118		0.0486		99.7281
139	2,520		0.0851		0.0409		99.7690
140	7,920		0.2675		0.0371		99.8061
141	14,260		0.4816		0.0280		99.8342
142	8,540		0.2884		0.0263		99.8605
143	14,930		0.5042		0.0209		99.8814
144	65,980		2.2283		0.0176		99.8990
145	15,640		0.5262		0.0162		99.9152
146	5,200		0.1756		0.0155		99.9307
147	36,390		1.2290		0.0142		99.9449
148	2,370		0.0800		0.0118		99.9567
149	7,090		0.2394		0.0111		99.9678
150	26,150		0.8831		0.0095		99.9773
151	28,590		0.9656		0.0095		99.9867
152	42,740		1.4434		0.0078		99.9945
153	91,920		3.1044		0.0037		99.9982
154	1,100		0.0371		0.0007		99.9989
Grand Total	2,961,000		99.9998		99.9998		12,374.4776

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 25: CALCULATION OF THE TRESS INDICES FOR SCOTLAND FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	84,950		3.9604		10.0646		10.1646
2	7,380		0.3441		7.5650		17.7296
3	11,560		0.5389		4.4145		22.1440
4	94,690		4.4145		4.0671		26.2112
5	3,480		0.1622		3.9604		30.1715
6	1,750		0.0816		3.8741		34.0457
7	1,570		0.0732		3.5291		37.5748
8	3,600	0.4856	0.1678	6.6779	2.5552	6.6779	40.1300
9	18,620	2.5115	0.8681	6.1182	2.4135	12.7961	42.5435
10	11,180	1.5080	0.5212	3.4543	2.3524	16.2503	44.8960
11	12,020	1.6213	0.5604	3.4354	2.3080	19.6857	47.2041
12	3,450	0.4653	0.1608	3.1575	2.1147	22.8432	49.3188
13	1,650	0.2226	0.0769	2.9539	1.8517	25.7971	51.1706
14	6,080	0.8201	0.2834	2.6180	1.8200	28.4151	52.9906
15	5,070	0.6838	0.2364	2.5856	1.8140	31.0008	54.8046
16	2,050	0.2765	0.0956	2.5357	1.4471	33.5365	56.2517
17	3,310	0.4465	0.1543	2.5115	1.4228	36.0480	57.6745
18	8,920	1.2031	0.4159	2.4400	1.2769	38.4879	58.9514
19	18,090	2.4400	0.8434	2.3658	1.1939	40.8537	60.1454
20	2,930	0.3952	0.1366	2.3577	1.1874	43.2114	61.3328
21	830	0.1120	0.0387	2.3078	1.0914	45.5192	62.4241
22	2,990	0.4033	0.1394	2.2660	1.0210	47.7852	63.4451
23	430	0.0580	0.0200	2.1149	0.9678	49.9001	64.4129
24	25,610	3.4543	1.1939	1.6685	0.9049	51.5685	65.3178
25	2,190	0.2954	0.1021	1.6213	0.8937	53.1898	66.2115
26							
27	2,410	0.3251	0.1124	1.5080	0.8765	54.6977	67.0880
28	1,500	0.2023	0.0699	1.4999	0.8681	56.1976	67.9560
29	230	0.0310	0.0107	1.4931	0.8434	57.6907	68.7994
30	400	0.0540	0.0186	1.3434	0.8177	59.0341	69.6171
31	21,900	2.9539	1.0210	1.3299	0.8149	60.3640	70.4320
32	9,510	1.2827	0.4434	1.3137	0.7977	61.6777	71.2296
33	17,110	2.3078	0.7977	1.3029	0.7832	62.9807	72.0128
34	4,870	0.6569	0.2270	1.2962	0.7613	64.2769	72.7741

TABLE B. 25: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	3,110	0.4195	0.1450	1.2827	0.7310	65.5596	73.5051
36	5,210	0.7027	0.2429	1.2139	0.7296	66.7735	74.2347
37	4,310	0.5813	0.2009	1.2031	0.7221	67.9766	74.9569
38	1,010	0.1362	0.0471	1.1586	0.6760	69.1352	75.6328
39	2,400	0.3237	0.1119	1.1047	0.6373	70.2399	76.2701
40	2,410	0.3251	0.1124	1.1006	0.6117	71.3405	76.8818
41	880	0.1187	0.0410	1.0467	0.5767	72.3872	77.4585
42	5.500	0.7418	0.2564	1.0318	0.5655	73.4190	78.0239
43	9,610	1.2962	0.4480	1.0076	0.5604	74.4265	78.5843
44	45,360	6.1182	2.1147	0.9954	0.5389	75.4220	79.1232
45	25,470	3.4354	1.1847	0.9469	0.5375	76.3688	79.6608
46	9,740	1.3137	0.4541	0.9347	0.5212	77.3035	80.1820
47							
48	5,680	0.7661	0.2648	0.9037	0.5184	78.2072	80.7004
49	3,470	0.4680	0.1618	0.8201	0.5161	79.0273	81.2164
50	8,590	1.1586	0.4005	0.7890	0.4848	79.8163	81.7013
51	840	0.1133	0.0392	0.7661	0.4643	80.5824	82.1656
52	220	0.0297	0.0103	0.7418	0.4625	81.3243	82.6281
53	7,650	1.0318	0.3566	0.7027	0.4611	82.0270	83.0891
54	3,700	0.4991	0.1725	0.6865	0.4597	82.7135	83.5488
55	4,780	0.6447	0.2228	0.6838	0.4541	83.3974	84.0029
56	49,510	6.6779	2.3082	0.6569	0.4503	84.0542	84.4532
57	23,410	3.1575	1.0914	0.6447	0.4480	84.6989	84.9012
58	7,470	1.0076	0.3483	0.5813	0.4434	85.2803	85.3446
59	120	0.0162	0.0056	0.5813	0.4196	85.8616	85.7642
60	15,680	2.1149	0.7310	0.5638	0.4159	86.4254	86.1800
61	8,190	1.1047	0.3818	0.5557	0.4005	86.9811	86.5805
62	9,960	1.3434	0.4643	0.5517	0.3818	87.5327	86.9623
63	260	0.0351	0.0121	0.5031	0.3804	88.0358	87.3427
64	310	0.0418	0.0145	0.4991	0.3762	88.5349	87.7189
65	700	0.0944	0.0326	0.4991	0.3618	89.0339	88.0807
66	3,470	0.4680	0.1618	0.4856	0.3566	89.5195	88.4373
67	4,120	0.5557	0.1921	0.4815	0.3483	90.0010	88.7856
68	1,370	0.1848	0.0639	0.4680	0.3441	90.4690	89.1296

TABLE B. 25: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	300	0.0405	0.0140	0.4680	0.3441	90.9371	89.4737
70	17,480	2.3577	0.8149	0.4653	0.3273	91.4024	89.8009
71	340	0.0459	0.0159	0.4465	0.3231	91.8488	90.1240
72	11,120	1.4999	0.5184	0.4195	0.3124	92.2683	90.4364
73	6,930	0.9347	0.3231	0.4033	0.3110	92.6716	90.7473
74	19,410	2.6180	0.9049	0.3952	0.2834	93.0668	91.0307
75	17,540	2.3658	0.8177	0.3925	0.2727	93.4593	91.3025
76	3,700	0.4991	0.1725	0.3655	0.2648	93.8248	91.5683
77	19,170	2.5856	0.8937	0.3466	0.2564	94.1714	91.8247
78	1,790	0.2414	0.0834	0.3251	0.2429	94.4965	92.0676
79	9,660	1.3029	0.4503	0.3251	0.2387	94.8215	92.3063
80	290	0.0391	0.0135	0.3251	0.2373	95.1466	92.5435
81	4,090	0.5517	0.1907	0.3237	0.2364	95.4703	92.7799
82	11,070	1.4931	0.5161	0.3197	0.2284	95.7900	93.0083
83	760	0.1025	0.0354	0.2954	0.2270	96.0853	93.2354
84	2,570	0.3466	0.1198	0.2765	0.2228	96.3618	93.4582
85	1,200	0.1619	0.0559	0.2657	0.2219	96.6275	93.6801
86	670	0.0904	0.0312	0.2441	0.2140	96.8717	93.8941
87	2,710	0.3655	0.1263	0.2414	0.2009	97.1131	94.0950
88	7,380	0.9954	0.3441	0.2360	0.2009	97.3491	94.2959
89	6,700	0.9037	0.3124	0.2226	0.1949	97.5717	94.4908
90	5,090	0.6865	0.2373	0.2023	0.1921	97.7740	94.6829
91	2,410	0.3251	0.1124	0.1848	0.1907	97.9588	94.8736
92	810	0.1093	0.0378	0.1673	0.1739	98.1260	95.0474
93	2,370	0.3197	0.1105	0.1619	0.1725	98.2879	95.2199
94	2,910	0.3925	0.1357	0.1362	0.1725	98.4241	95.3924
95	9,000	1.2139	0.4196	0.1187	0.1678	98.5428	95.5602
96	770	0.1039	0.0359	0.1133	0.1664	98.6561	95.7267
97	4,310	0.5813	0.2009	0.1120	0.1622	98.7680	95.8889
98	370	0.0499	0.0172	0.1093	0.1618	98.8772	96.0507
99	7,760	1.0467	0.3618	0.1093	0.1618	98.9865	96.2124
100	9,860	1.3299	0.4597	0.1039	0.1608	99.0903	96.3732
101	7,020	0.9469	0.3273	0.1025	0.1543	99.1928	96.5276
102	1,970	0.2657	0.0918	0.0944	0.1450	99.2872	96.6725

TABLE B. 25: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,240	0.1673	0.0578	0.0904	0.0904	99.3776	96.8119
104	3,570	0.4815	0.1664	0.0863	0.1366	99.4639	96.9485
105	1,810	0.2441	0.0844	0.0580	0.1357	99.5219	97.0842
106	16,800	2.2660	0.7832	0.0540	0.1352	99.5758	97.2194
107	3,730	0.5031	0.1739	0.0526	0.1263	99.6284	97.3457
108	4,180	0.5638	0.1949	0.0499	0.1198	99.6783	97.4655
109	12,370	1.6685	0.5767	0.0459	0.1124	99.7242	97.5779
110	18,800	2.5357	0.8765	0.0418	0.1124	99.7660	97.6902
111	8,160	1.1006	0.3804	0.0418	0.1124	99.8078	97.8026
112	5,850	0.7890	0.2727	0.0405	0.1119	99.8433	97.9144
113	390	0.0526	0.0182	0.0391	0.1105	99.8874	98.0249
114	810	0.1093	0.0378	0.0351	0.1105	99.9224	98.1354
115	310	0.0418	0.0145	0.0310	0.1021	99.9534	98.2375
116	640	0.0863	0.0298	0.0297	0.0960	99.9831	98.3335
117	1,750	0.2360	0.0816	0.0162	0.0956	99.9993	98.4291
Total all manufacturing	741,400	100.0003		100.0003		8,489.8270	
118	162,270		7.5650		0.0918		98.5209
119	11,530		0.5375		0.0844		98.6053
120	15,650		0.7296		0.0834		98.6887
121	2,900		0.1352		0.0816		98.7703
122	51,770		2.4135		0.0816		98.8519
123	39,040		1.8200		0.0797		98.9316
124	20,760		0.9678		0.0783		99.0099
125	15,490		0.7221		0.0769		99.0868
126	13,670		0.6373		0.0732		99.1600
127	1,680		0.0783		0.0699		99.2299
128	31,040		1.4471		0.0639		99.2938
129	4,590		0.2140		0.0578		99.3516
130	50,460		2.3524		0.0559		99.4075
131	218,030		10.1646		0.0471		99.4546
132	14,500		0.6760		0.0410		99.4956
133	9,890		0.4611		0.0392		99.5348

TABLE B. 25: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	38,910		1.8140		0.0387		99.5734
135	8,070		0.3762		0.0378		99.6112
136	87,240		4.0671		0.0378		99.6489
137	12,130		0.5655		0.0359		99.6848
138	83,100		3.8741		0.0354		99.7203
139	2,060		0.0960		0.0326		99.7529
140	13,120		0.6117		0.0312		99.7841
141	10,400		0.4848		0.0298		99.8139
142	4,760		0.2219		0.0200		99.8340
143	4,900		0.2284		0.0186		99.8526
144	54,810		2.5552		0.0182		99.8708
145	9,920		0.4625		0.0172		99.8880
146	5,120		0.2387		0.0159		99.9039
147	30,520		1.4228		0.0145		99.9183
148	2,370		0.1105		0.0145		99.9328
149	6,670		0.3110		0.0140		99.9468
150	27,390		1.2769		0.0135		99.9603
151	16,330		0.7613		0.0121		99.9724
152	39,720		1.8517		0.0107		99.9831
153	75,700		3.5291		0.0103		99.9934
154	1,710		0.0797		0.0056		99.9989
Grand total	2,145,000		99.9999		99.9999		12,777.8750

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 26: CALCULATION OF THE TRESS INDICES FOR WALES FOR THE 152 MLH END MAY 1959

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	21,730		2.2850		12.1640		12.1640
2	4,380		0.4606		7.9527		20.1167
3	780		0.0820		7.4385		27.5552
4	115,680		12.1640		7.0578		34.6130
5	7,120		0.7487		4.6025		39.2155
6	540		0.0568		4.3775		43.5930
7	520		0.0547		3.8465		47.4395
8	1,260	0.4423	0.1325	23.5616	3.3628	23.5616	50.8022
9	5,830	2.0465	0.6130	5.3814	2.7035	28.9430	53.5057
10	2,150	0.7547	0.2261	4.5951	2.2850	33.5381	55.7907
11	1,110	0.3897	0.1167	3.5981	2.1998	37.1362	57.9904
12	1,830	0.6424	0.1924	2.6889	1.6120	39.8251	59.6024
13	40	0.0140	0.0042	2.5520	1.5962	42.3772	61.1986
14	1,520	0.5336	0.1598	2.2993	1.4826	44.6765	62.6813
15	1,200	0.4212	0.1262	2.2923	1.4763	46.9687	64.1576
16	180	0.0632	0.0189	2.0465	1.4616	49.0153	65.6192
17	110	0.0386	0.0116	2.0220	1.4332	51.0372	67.0524
18	3,820	1.3410	0.4017	1.5375	1.3964	52.5748	68.4489
19	2,060	0.7231	0.2166	1.5235	1.3764	54.0983	69.8253
20	470	0.1650	0.0494	1.5130	1.0778	55.6113	70.9031
21	3,600	1.2637	0.3785	1.4708	1.0578	57.0821	71.9609
22	2,810	0.9864	0.2955	1.4673	0.8286	58.5494	72.7895
23	90	0.0316	0.0095	1.4463	0.8055	59.9957	73.5950
24	15,330	5.3814	1.6120	1.3761	0.8055	61.3717	74.4005
25	740	0.2598	0.0778	1.3726	0.7645	62.7443	75.1649
26							
27	480	0.1685	0.0505	1.3410	0.7529	64.0852	75.9178
28	360	0.1264	0.0379	1.2637	0.7487	65.3490	76.6665
29	1,590	0.5581	0.1672	1.2357	0.6887	66.5846	77.3552
30	1,220	0.4283	0.1283	1.1865	0.6866	67.7711	78.0419
31	67,120	23.5616	7.0578	1.1339	0.6562	68.9050	78.6980
32	2,100	0.7372	0.2208	1.0391	0.6530	69.9440	79.3510
33	4,190	1.4708	0.4406	0.9864	0.6130	70.9304	79.9640
34	7,660	2.6889	0.8055	0.9829	0.6057	71.9133	80.5697

TABLE B. 26: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	2,960	1.0391	0.3113	0.9162	0.5005	72.8295	81.0702
36	1,010	0.3545	0.1062	0.9092	0.4858	73.7387	81.5560
37	1,380	0.4844	0.1451	0.8846	0.4763	74.6233	82.0323
38	370	0.1299	0.0389	0.8846	0.4606	75.5079	82.4929
39	10	0.0035	0.0011	0.8600	0.4606	76.3680	82.9534
40	40	0.0140	0.0042	0.8460	0.4564	77.2139	83.4098
41	100	0.0351	0.0105	0.8214	0.4532	78.0354	83.8630
42	200	0.0702	0.0210	0.8179	0.4406	78.8533	84.3036
43	270	0.0948	0.0284	0.8039	0.4395	79.6572	84.7431
44	5,760	2.0220	0.6057	0.7933	0.4332	80.4505	85.1763
45	4,310	1.5130	0.4532	0.7828	0.4122	81.2333	85.5885
46	3,230	1.1339	0.3396	0.7618	0.4111	81.9950	85.9997
47							
48	2,610	0.9162	0.2744	0.7547	0.4017	82.7498	86.4013
49	1,980	0.6951	0.2082	0.7372	0.3870	83.4869	86.7883
50	3,920	1.3761	0.4122	0.7231	0.3785	84.2101	87.1668
51	2,450	0.8600	0.2576	0.6951	0.3701	84.9051	87.5370
52	690	0.2422	0.0726	0.6424	0.3554	85.5475	87.8924
53	7,270	2.5520	0.7645	0.5581	0.3396	86.1057	88.2320
54	4,380	1.5375	0.4606	0.5476	0.3386	86.6533	88.5706
55	2,410	0.8460	0.2534	0.5371	0.3113	87.1903	88.8818
56	6,530	2.2923	0.6866	0.5336	0.2955	87.7239	89.1773
57	220	0.0772	0.0231	0.4950	0.2944	88.2189	89.4717
58	6,550	2.2993	0.6887	0.4879	0.2744	88.7068	89.7462
59	1,350	0.4739	0.1420	0.4844	0.2744	89.1912	90.0206
60	2,230	0.7828	0.2345	0.4739	0.2723	89.6651	90.2929
61	1,050	0.3686	0.1104	0.4423	0.2650	90.1074	90.5579
62	3,910	1.3726	0.4111	0.4283	0.2650	90.5357	90.8229
63	530	0.1860	0.0557	0.4283	0.2608	90.9639	91.0837
64	240	0.0842	0.0252	0.4212	0.2576	91.3851	91.3413
65	110	0.0386	0.0116	0.4177	0.2534	91.8029	91.5947
66	2,340	0.8214	0.2461	0.3897	0.2461	92.1925	91.8407
67	2,170	0.7618	0.2282	0.3756	0.2450	92.5681	92.0857
68	2,800	0.9829	0.2944	0.3686	0.2408	92.9367	92.3265

TABLE B. 26: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	40	0.0140	0.0042	0.3581	0.2387	93.2947	92.5652
70	13,090	4.5951	1.3764	0.3545	0.2376	93.6493	92.8029
71	10,250	3.5981	1.0778	0.3545	0.2345	94.0038	93.0374
72	1,070	0.3756	0.1125	0.3475	0.2282	94.3513	93.2655
73	640	0.2247	0.0673	0.3405	0.2261	94.6918	93.4916
74	860	0.3019	0.0904	0.3230	0.2240	95.0148	93.7156
75	0	0.0	0.0	0.3019	0.2208	95.3167	93.9364
76	160	0.0562	0.0168	0.2843	0.2166	95.6010	94.1530
77	990	0.3475	0.1041	0.2738	0.2082	95.8748	94.3612
78	0	0.0	0.0	0.2598	0.2050	96.1346	94.5662
79	110	0.0386	0.0116	0.2422	0.1998	96.3768	94.7660
80	680	0.2387	0.0715	0.2387	0.1924	96.6155	94.9584
81	780	0.2738	0.0820	0.2387	0.1672	96.8542	95.1256
82	560	0.1966	0.0589	0.2282	0.1640	97.0823	95.2897
83	160	0.0562	0.0168	0.2247	0.1640	97.3070	95.4537
84	1,010	0.3545	0.1062	0.1966	0.1609	97.5036	95.6146
85	810	0.2843	0.0852	0.1860	0.1598	97.6896	95.7744
86	270	0.0948	0.0284	0.1685	0.1483	97.8581	95.9226
87	370	0.1299	0.0389	0.1650	0.1462	98.0231	96.0688
88	4,120	1.4463	0.4332	0.1334	0.1451	98.1564	96.2139
89	1,410	0.4950	0.1483	0.1299	0.1420	98.2863	96.3558
90	920	0.3230	0.0967	0.1299	0.1325	98.4162	96.4883
91	3,380	1.1865	0.3554	0.1299	0.1314	98.5461	96.6198
92	10	0.0035	0.0011	0.1264	0.1283	98.6725	96.7480
93	1,530	0.5371	0.1609	0.1229	0.1283	98.7953	96.8763
94	970	0.3405	0.1020	0.1123	0.1262	98.9076	97.0025
95	4,340	1.5235	0.4564	0.0983	0.1251	99.0059	97.1276
96	350	0.1229	0.0368	0.0948	0.1167	99.1007	97.2443
97	1,560	0.5476	0.1640	0.0948	0.1125	99.1955	97.3568
98	1,020	0.3581	0.1073	0.0878	0.1104	99.2832	97.4672
99	2,290	0.8039	0.2408	0.0842	0.1073	99.3675	97.5745
100	2,520	0.8846	0.2650	0.0772	0.1062	99.4447	97.6807
101	2,330	0.8179	0.2450	0.0772	0.1062	99.5219	97.7869
102	380	0.1334	0.0400	0.0702	0.1041	99.5921	97.8910

TABLE B. 26: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	220	0.0772	0.0231	0.0632	0.1020	99.6553	97.9930
104	680	0.2387	0.0715	0.0562	0.0967	99.7115	98.0897
105	280	0.0983	0.0294	0.0562	0.0904	99.7676	98.1801
106	2,590	0.9092	0.2723	0.0386	0.0852	99.8062	98.2653
107	1,390	0.4879	0.1462	0.0386	0.0820	99.8448	98.3473
108	250	0.0878	0.0263	0.0386	0.0820	99.8834	98.4293
109	2,520	0.8846	0.2650	0.0351	0.0778	99.9185	98.5071
110	2,260	0.7933	0.2376	0.0316	0.0726	99.9501	98.5797
111	4,180	1.4673	0.4395	0.0140	0.0715	99.9641	98.6512
112	370	0.1299	0.0389	0.0140	0.0715	99.9782	98.7227
113	650	0.2282	0.0683	0.0140	0.0683	99.9922	98.7910
114	3,520	1.2357	0.3701	0.0035	0.0673	99.9957	98.8583
115	320	0.1123	0.0336	0.0035	0.0589	99.9992	98.9172
116	1,190	0.4177	0.1251	0.0	0.0568	99.9992	98.9740
117	1,220	0.4283	0.1283	0.0	0.0568	99.9992	99.0307
Total all manufacturing	284,870	99.9998		99.9998		8997.9421	
118	70,740		7.4385		0.0568		99.0875
119	4,620		0.4858		0.0557		99.1432
120	14,040		1.4763		0.0557		99.1990
121	1,560		0.1640		0.0547		99.2536
122	31,980		3.3628		0.0536		99.3073
123	14,100		1.4826		0.0505		99.3577
124	7,660		0.8055		0.0494		99.4071
125	6,210		0.6530		0.0400		99.4471
126	7,880		0.8286		0.0389		99.4860
127	510		0.0536		0.0389		99.5249
128	13,630		1.4332		0.0389		99.5638
129	1,250		0.1314		0.0379		99.6016
130	13,280		1.3964		0.0368		99.6384
131	75,630		7.9527		0.0336		99.6720
132	7,160		0.7529		0.0294		99.7015
133	4,530		0.4763		0.0284		99.7299

TABLE B. 26: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	13,900		1.4616		0.0284		99.7582
135	2,130		0.2240		0.0263		99.7845
136	43,770		4.6025		0.0252		99.8097
137	2,610		0.2744		0.0231		99.8329
138	36,580		3.8465		0.0231		99.8560
139	540		0.0568		0.0210		99.8770
140	2,480		0.2608		0.0189		99.8960
141	6,240		0.6562		0.0168		99.9128
142	1,950		0.2050		0.0168		99.9296
143	3,220		0.3386		0.0116		99.9411
144	25,710		2.7035		0.0116		99.9527
145	3,680		0.3870		0.0116		99.9643
146	1,900		0.1998		0.0105		99.9748
147	15,180		1.5962		0.0095		99.9843
148	530		0.0557		0.0042		99.9884
149	2,270		0.2387		0.0042		99.9926
150	10,060		1.0578		0.0042		99.9968
151	4,760		0.5005		0.0011		99.9979
152	20,920		2.1998		0.0011		99.9989
153	41,630		4.3775		0.0		99.9989
154	540		0.0568		0.0		99.9989
Grand Total	951,000		99.9995		99.9995		13,330.9766

Source of Data: Ministry of Labour Gazette, May 1960

TABLE B. 27: CALCULATION OF THE TRESS INDICES FOR GREAT BRITAIN FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	425,000		1.8357		12.2154		12.2154
2	505,900		2.1851		11.6733		23.8887
3	823,000	9.3947	3.5548	26.4283	10.0000	26.4283	33.8887
4	505,800	5.7738	2.1847	9.3947	9.2813	35.8230	43.1700
5	591,800	6.7555	2.5562	9.2851	6.9795	45.1081	50.1495
6	2,315,200	26.4283	10.0000	8.0054	6.9130	53.1135	57.0625
7	197,000	2.2488	0.8509	7.3194	6.1671	60.4329	63.2296
8	813,400	9.2851	3.5133	6.7555	3.5548	67.1884	66.7844
9	578,300	6.6014	2.4978	6.6014	3.5133	73.7898	70.2977
10	701,300	8.0054	3.0291	5.7738	3.0291	79.5636	73.3268
11	56,800	0.6484	0.2453	5.6802	2.9138	85.2438	76.2406
12	497,600	5.6802	2.1493	4.0855	2.7695	89.3293	79.0101
13	357,900	4.0855	1.5459	4.0421	2.5562	93.3714	81.5663
14	326,900	3.7316	1.4120	3.7316	2.4978	97.1030	84.0641
15	641,200	7.3194	2.7695	2.2488	2.1851	99.3518	86.2492
16	354,100	4.0421	1.5295	0.6484	2.1847	100.0002	88.4339
Total all manufacturing	8,760,300	100.0002		100.0002		1,005.8471	
17	1,600,500		6.9130		2.1493		90.5832
18	417,800		1.8046		1.8357		92.4189
19	1,615,900		6.9795		1.8046		94.2235
20	2,828,100		12.2154		1.5459		95.7694
21	674,600		2.9138		1.5295		97.2989
22	2,702,600		11.6733		1.4120		98.7109
23	2,148,800		9.2813		0.8509		99.5618
24	1,427,800		6.1671		0.2453		99.8071
25	44,500		0.1922		0.1922		99.9993
Grand Total	23,152,000		99.9993		99.9993		1,857.9505

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 28: CALCULATION OF THE TRESS INDICES FOR THE SOUTH EAST FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	100,700		1.2696		13.7685		13.7685
2	17,700		0.2220		12.3225		26.0910
3	220,600	8.6850	2.7665	33.4252	11.7419	33.4252	37.8329
4	165,200	6.5039	2.0717	12.1378	10.6471	45.5630	48.4800
5	46,800	1.8425	0.5869	9.3661	8.4537	54.9291	56.9337
6	849,000	33.4252	10.6471	8.6850	7.3890	63.6141	64.3227
7	41,200	1.6220	6.5167	6.5039	6.2528	70.1180	70.5755
8	237,900	9.3661	2.9834	5.5433	4.7968	75.6613	75.3723
9	128,200	5.0472	1.6077	5.2047	3.8663	80.8660	79.2386
10	33,000	1.2992	0.4138	5.1575	2.9834	86.0235	82.2220
11	18,800	0.7402	0.2358	5.0472	2.7665	91.0707	84.9885
12	140,800	5.5433	1.7657	3.4173	2.0717	94.4880	87.0602
13	86,800	3.4173	1.0885	1.8425	1.8184	96.3305	88.8786
14	132,200	5.2042	1.6579	1.6220	1.7657	97.9525	90.6443
15	308,300	12.1378	3.8663	1.2992	1.6579	99.2517	92.3022
16	131,000	5.1575	1.6428	0.7402	1.6428	99.9919	93.9450
Total all manufacturing	2,540,000	99.9919		99.9919		1089.2855	
17	498,600		6.2528		1.6077		95.5527
18	145,000		1.8184		1.2696		96.8223
19	674,100		8.4537		1.0885		97.9108
20	1,097,900		13.7685		0.5869		98.4977
21	382,500		4.7968		0.5167		99.0144
22	982,600		12.3225		0.4138		99.4282
23	936,300		11.7419		0.2358		99.6640
24	589,200		7.3890		0.2220		99.8860
25	9,400		0.1179		0.1179		100.0039
Grand Total	7,974,000		100.0039		100.0039		1979.4360

Source of Data: Employment and Productivity Gazette, March 1969.

TABLE B. 29: CALCULATION OF THE TRESS INDICES FOR THE SOUTH WEST FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	47,600		3.5522		13.6642		13.6642
2	13,900		1.0373		12.4776		26.1418
3	65,300	15.5773	4.8731	27.0754	10.9851	27.0754	37.1269
4	13,000	3.1011	0.9701	15.5773	8.4701	42.6527	45.5970
5	6,100	1.4552	0.4552	14.6708	8.1418	57.3235	53.7388
6	113,500	27.0754	8.4701	8.8502	7.8358	66.1737	61.5746
7	17,100	4.0792	1.2761	6.0115	6.4851	72.1852	68.0597
8	61,500	14.6708	4.5896	4.6040	4.8731	76.7892	72.9328
9	13,000	3.1011	0.9701	4.1031	4.5896	80.8923	77.5224
10	15,300	3.6498	1.1418	4.0792	3.5522	84.9715	81.0746
11	4,100	0.9781	0.3060	3.6498	2.7687	88.6213	83.8433
12	25,200	6.0115	1.8806	3.1011	2.2015	91.7224	86.0448
13	11,400	2.7195	0.8507	3.1011	2.1642	94.8235	88.2090
14	19,300	4.6040	1.4403	2.7195	1.8806	97.5430	90.0896
15	37,100	8.8502	2.7687	1.4552	1.4403	98.9982	91.5299
16	17,200	4.1031	1.2836	0.9781	1.2836	99.9763	92.8135
Total all manufacturing	419,200	99.9763		99.9763		1079.7482	
17	105,000		7.8358		1.2761		94.0896
18	29,500		2.2015		1.1418		95.2314
19	86.900		6.4851		1.0373		96.2687
20	167,200		12.4776		0.9701		97.2388
21	29,000		2.1642		0.9701		98.2089
22	183,100		13.6642		0.8507		99.0596
23	147,200		10.9851		0.4552		99.5148
24	109,100		8.1418		0.3060		99.8208
25	2,400		0.1791		0.1791		99.9999
Grand Total	1,340,000		99.9999		99.9999		1949.3954

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 30: CALCULATION OF THE TRESS INDICES FOR EAST ANGLIA FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	57,900		9.3689		12.2492		12.2492
2	2,500		0.4045		11.6181		23.8673
3	40,400	20.4040	6.5372	29.0404	9.8220	29.0404	33.6893
4	10,900	5.5051	1.7638	20.4040	9.3689	49.4444	43.0582
5	4,100	2.0707	0.6634	8.2828	9.3042	57.7272	52.3624
6	57,500	29.0404	9.3042	8.0808	8.3010	65.8080	60.6634
7	3,500	1.7677	0.5663	6.7172	6.5372	72.5252	67.2006
8	16,400	8.2828	2.6537	5.8081	6.2783	78.3333	73.4789
9	3,900	1.9697	0.6311	5.5051	5.9061	83.8384	79.3850
10	3,500	1.7677	0.5663	4.2424	2.6537	88.0808	82.0387
11							
12	13,300	6.7172	2.1521	3.9394	2.5890	92.0202	84.6277
13	8,400	4.2424	1.3592	2.0707	2.1521	94.0909	86.7798
14	11,500	5.8081	1.8608	1.9697	2.1036	96.0606	88.8834
15	16,000	8.0808	2.5890	1.7677	1.8608	97.8283	90.7442
16	7,800	3.9394	1.2621	1.7677	1.8447	99.5960	92.5889
Total all manufacturing	198,000	99.5960		99.5960		1004.3937	
17	51,300		8.3010		1.7638		94.3527
18	11,400		1.8417		1.3592		95.7119
19	38,800		6.2783		1.2621		96.9740
20	71,800		11.6181		0.6634		97.6374
21	13,000		2.1036		0.6311		98.2685
22	75,700		12.2492		0.5663		98.8348
23	60,700		9.8220		0.5663		99.4011
24	36.500		5.9061		0.4045		99.8056
25							
Grand Total	618,000		99.8056		99.8056		1752.6030

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 31: CALCULATION OF THE TRESS INDICES FOR THE EAST MIDLANDS FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	33,900		2.3840		11.4346		11.4346
2	92,900		6.5331		10.3446		21.7792
3	48,200	7.7343	3.3896	23.6040	9.7539	23.6040	31.5331
4	18,600	2.9846	1.3080	19.5603	8.5724	43.1643	40.1055
5	44,700	7.1727	3.1435	11.3928	6.7511	54.5571	46.8566
6	147,100	23.6040	10.3446	9.0019	6.5331	63.5590	53.3897
7	1,300	0.2086	0.0914	7.7343	6.4205	71.2933	59.8102
8	56,100	9.0019	3.9451	7.1727	4.9930	78.4660	64.8032
9	22,200	3.5623	1.5612	4.1239	4.7890	82.5899	69.5922
10	121,900	19.5603	8.5724	3.9955	4.6273	86.5854	74.2195
11	4,600	0.7381	0.3235	3.5623	3.9451	90.1477	78.1646
12	71,000	11.3928	4.9930	3.0327	3.3896	93.1804	81.5542
13	24,900	3.9955	1.7511	2.9846	3.1435	96.1650	84.6977
14	18,900	3.0327	1.3291	2.8883	2.3840	99.0533	87.0817
15	25,700	4.1239	1.8073	0.7381	1.8987	99.7914	88.9804
16	18,000	2.8883	1.2658	0.2086	1.8073	100.0000	90.7877
Total all manufacturing	623,200	100.0000		100.0000		1082.1568	
17	91,300		6.4205		1.7511		92.5388
18	27,000		1.8987		1.5612		94.1000
19	65,800		4.6273		1.4276		95.5276
20	162,600		11.4346		1.3291		96.8567
21	20,300		1.4276		1.3080		98.1647
22	138,700		9.7539		1.2658		99.4305
23	96,000		6.7511		0.3235		99.7540
24	68,100		4.7890		0.1758		99.9298
25	2,500		0.1758		0.0914		100.0212
Grand Total	1,422,000		100.0212		100.0212		1861.1134

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 32: CALCULATION OF THE TRESS INDICES FOR THE WEST MIDLANDS FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	30,500		1.3175		12.9849		12.9849
2	37,200		1.6069		10.0000		22.9849
3	70,200	5.7673	3.0324	24.6960	9.3089	24.6960	32.2938
4	25,500	2.0950	1.1015	17.7046	9.3002	42.4006	41.5940
5	145,400	11.9454	6.2808	16.7762	8.8207	59.1768	50.4147
6	300,600	24.6960	12.9849	11.9454	6.6479	71.1222	57.0626
7	1,300	0.1068	0.0562	6.7943	6.2808	77.9165	63.3434
8	204,200	16.7762	8.8207	5.7673	6.1253	83.6838	69.4687
9	215,500	17.7046	9.3089	4.0421	4.5140	87.7259	73.9827
10	35,000	2.8755	1.5119	2.8755	4.5097	90.6014	78.4924
11	6,100	0.5012	0.2635	2.7522	3.5724	93.3536	82.0648
12	23,100	1.8978	0.9978	2.0950	3.0324	95.4486	85.0972
13	82,700	6.7943	3.5724	2.0539	2.1253	97.5025	87.2225
14	25,000	2.0539	1.0799	1.8978	1.6242	99.4003	88.8467
15	33,500	2.7522	1.4471	0.5012	1.6112	99.9015	90.4579
16	49,200	4.0421	2.1253	0.1068	1.6069	100.0083	92.0648
Total all manufacturing	1,217,200	100.0083		100.0083		1122.9380	
17	141,800		6.1253		1.5119		93.5767
18	37,600		1.6242		1.4471		95.0238
19	104,500		4.5140		1.3175		96.3413
20	215,300		9.3002		1.1015		97.4428
21	37,300		1.6112		1.0799		98.5227
22	231,500		10.0000		0.9978		99.5205
23	153,900		6.6429		0.2635		99.7840
24	104,400		4.5092		0.1685		99.9525
25	3,900		0.1685		0.0562		100.0087
Grand Total	2,315,000		100.0087		100.0087		1908.5490

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 33: CALCULATION OF THE TRESS INDICES FOR YORKSHIRE AND HUMBERSIDE FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	32,600		1.5902		11.2780		11.2780
2	104,800		5.1122		10.7610		22.0390
3	82,400	9.4767	4.0195	19.1604	8.1268	19.1604	30.1658
4	45,800	5.2674	2.2341	18.6659	7.9171	37.8263	38.0829
5	110,100	12.6624	5.3707	12.6624	7.5951	50.4887	45.6780
6	162,300	18.6659	7.9171	9.4767	6.7561	59.9654	52.4341
7	7,500	0.8626	0.3659	7.8781	6.0683	67.8435	58.5024
8	44,400	5.1064	2.1659	6.3255	5.3707	74.1690	63.8731
9	68,500	7.8781	3.3415	5.2674	5.1122	79.4364	68.9853
10	166,600	19.1604	8.1268	5.1064	4.4439	84.5428	73.4292
11	5,700	0.6555	0.2780	4.4968	4.0195	89.0396	77.4487
12	55,000	6.3255	2.6829	4.2898	3.3415	93.3294	80.7902
13	37,300	4.2898	1.8195	3.4848	2.6829	96.8142	83.4731
14	30,300	3.4848	1.4780	1.6676	2.2341	98.4818	85.7072
15	39,100	4.4968	1.9073	0.8626	2.1659	99.3444	87.8731
16	14,500	1.6676	0.7073	0.6555	1.9073	99.9999	89.7804
Total all manufacturing	869,500	99.9999		99.9999		1050.4418	
17	138,500		6.7561		1.8976		91.6780
18	38,500		1.8780		1.8780		93.5560
19	124,400		6.0683		1.8195		95.3755
20	231,200		11.2780		1.5902		96.9657
21	38,900		1.8976		1.4780		98.4437
22	220,600		10.7610		0.7073		99.1510
23	155,700		7.5951		0.3659		99.5169
24	91,100		4.4439		0.2780		99.7949
25	4.100		0.2000		0.2000		99.9949
Grand Total	2,050,000		99.9949		99.9949		1844.0171

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 34: CALCULATION OF THE TRESS INDICES FOR THE NORTH FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	21,900		1.6705		11.7468		11.7468
2	88,800		6.7735		10.9306		22.6774
3	39,500	8.4800	3.0130	27.1146	9.6339	27.1146	32.3113
4	50,800	10.9060	3.8749	11.8935	8.8863	39.0081	41.1976
5	55,400	11.8935	4.2258	10.9060	8.4897	49.9141	49.6873
6	126,300	27.1146	9.6339	8.8235	6.7735	58.7376	56.4608
7	41,100	8.8235	3.1350	8.4800	6.2471	67.2176	62.7079
8	11,700	2.5118	0.8924	7.4710	6.0183	74.6886	68.7262
9	14,600	3.1344	1.1137	4.4440	4.2258	79.1326	72.9520
10	20,700	4.4440	1.5789	4.4225	3.8749	83.5551	76.8269
11	1,600	0.3435	0.1220	3.8214	3.1350	87.3765	79.9619
12	34,800	7.4710	2.6545	3.3705	3.0130	90.7470	82.9749
13	20,600	4.4225	1.5713	3.2417	2.6545	93.9887	85.6294
14	15,100	3.2417	1.1518	3.1344	1.7391	97.1231	87.3685
15	17,800	3.8214	1.3577	2.5118	1.6705	99.6349	89.0390
16	15,700	3.3705	1.1976	0.3435	1.5942	99.9784	90.6332
Total all manufacturing	465,800	99.9784		99.9784		1048.2169	
17	116,500		8.8863		1.5789		92.2121
18	22,800		1.7391		1.5713		93.7834
19	78,900		6.0183		1.3577		95.1411
20	154,000		11.7468		1.1976		96.3387
21	20,900		1.5942		1.1518		97.4905
22	143,300		10.9306		1.1137		98.6042
23	111,300		8.4897		0.8924		99.4966
24	81,900		6.2471		0.3280		99.8246
25	4,300		0.3280		0.1220		99.9466
Grand Total	1,311,000		99.9466		99.9466		1883.7389

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 35: CALCULATION OF THE TRESS INDICES FOR THE NORTHWEST FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployeed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	17,200		9.5799		11.9993		11.9993
2	29,500		0.9946		11.0283		23.0276
3	131,500	9.7930	4.4336	22.9371	10.3844	22.9337	33.4120
4	116,700	8.6908	3.9346	14.4698	7.6399	37.4069	41.0519
5	38,800	2.8895	1.3082	9.7930	7.3736	47.1999	48.4255
6	308,000	22.9371	10.3844	9.1376	6.5509	56.3375	54.9764
7	33,100	2.4650	1.1160	8.6908	6.0384	65.0283	61.0148
8	122,700	9.1376	4.1369	6.8514	4.8955	71.8797	65.9103
9	60,800	4.5279	2.0499	6.4567	4.4336	78.3364	70.3439
10	194,300	14.4698	6.5509	4.7885	4.1369	83.1249	74.4808
11	9,300	0.6926	0.3136	4.5279	3.9346	87.6528	78.4154
12	86,700	6.4567	2.9231	3.5970	3.1018	91.2498	81.5172
13	48,300	3.5970	1.6285	2.8895	2.9231	94.1393	84.4403
14	36,500	2.7182	1.2306	2.7182	2.2960	96.8575	86.7363
15	92,000	6.8514	3.1018	2.4650	2.1679	99.3225	88.9042
16	64,300	4.7885	2.1679	0.6926	2.0499	100.0151	90.9541
Total all manufacturing	1,342,800	100.0151		100.0151		1031.4877	
17	179,100		6.0384		1.6824		92.6365
18	49,900		1.6824		1.6285		94.2650
19	218,700		7.3736		1.3082		95.5732
20	355,900		11.9993		1.2306		96.8038
21	68,100		2.2960		1.1160		97.9198
22	327,100		11.0283		0.9946		98.9144
23	226,600		7.6399		0.5799		99.4943
24	145,200		4.8955		0.3136		99.8079
25	5,800		0.1955				
Grand Total	2,966,000		100.0034		100.0034		1871.0283

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 36: CALCULATION OF THE TRESS INDICES FOR SCOTLAND FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	68,100		3.1528		12.7500		12.7500
2	49,500		2.2917		12.6991		25.4491
3	104,000	13.8815	4.8148	24.9600	9.2037	24.9600	34.6528
4	34,500	4.6049	1.5972	13.8815	8.6574	38.8415	43.3102
5	47,500	6.3401	2.1991	12.4399	8.1944	51.2814	51.5046
6	187,000	24.9600	8.6574	7.8350	7.1713	59.1164	58.6759
7	48,000	6.4068	2.2222	6.4068	5.7870	65.5232	64.4629
8	38,800	5.1789	1.7963	6.3401	4.8148	71.8633	69.2777
9	27,400	3.6572	1.2685	5.1789	4.3148	77.0422	73.5925
10	93,200	12.4399	4.3148	4.6049	3.1528	81.6471	76.7453
11	3,700	0.4939	0.1713	4.2979	2.7176	85.9450	79.4629
12	32,200	4.2979	1.4907	3.8574	2.2917	89.8024	81.7546
13	26,100	3.4837	1.2083	3.6572	2.2222	93.4596	83.9768
14	28,900	3.8574	1.3380	3.4837	2.2176	96.9433	86.1944
15	58,700	7.8350	2.7176	2.5761	2.1991	99.5194	88.3935
16	19,300	2.5761	0.8935	0.4939	1.7963	100.0133	90.1898
Total all manufacturing	749,200	100.0133		100.0133		1035.9581	
17	198,800		9.2037		1.5972		91.7870
18	32,800		1.5185		1.5185		93.3055
19	154,900		7.1713		1.4907		94.7962
20	274,300		12.6991		1.3380		96.1342
21	47,900		2.2176		1.2685		97.4027
22	275,400		12.7500		1.2083		98.6110
23	177,000		8.1944		0.8935		99.5045
24	125,000		5.7870		0.3426		99.8471
25	7,400		0.3426		0.1713		100.0184
Grand Total	2,160,000		100.0184		100.0184		1891.7996

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 37 CALCULATION OF THE TRESS INDICES FOR WALES FOR THE 25 SIC JUNE 1968

SIC	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	14,700		1.4924		12.6497		12.6497
2	69,200		7.0254		9.9289		22.5787
3	21,000	6.2593	2.1320	27.6900	9.4315	27.6900	32.0101
4	24,800	7.3920	2.5178	19.0462	8.5279	46.7362	40.5380
5	92,900	27.6900	9.4315	7.3920	8.0711	54.1282	48.6091
6	63,900	19.0462	6.4873	7.1833	7.0254	61.3115	55.6345
7	3,000	0.8942	0.3046	6.2593	6.9848	67.5708	62.6193
8	19,700	5.8718	2.0000	5.8718	6.8528	73.4426	69.4721
9	24,100	7.1833	2.4467	5.3055	6.4873	78.7481	75.9594
10	17,800	5.3055	1.8071	5.0969	2.5178	83.8450	78.4772
11	1,800	0.5365	0.1827	4.6498	2.4467	88.4948	80.9239
12	15,600	4.6498	1.5838	3.8748	2.3553	92.3696	83.2792
13	11,500	3.4277	1.1675	3.4277	2.1320	95.7973	85.4112
14	9,300	2.7720	0.9442	2.7720	2.0000	98.5693	87.4112
15	13,000	3.8748	1.3198	0.8942	1.8071	99.4635	89.2183
16	17,100	5.0969	1.7360	0.5365	1.7360	100.0000	90.9543
Total all manufacturing	335,500	100.0000		100.0000		1068.1669	
17	79,500		8.0711		1.6853		92.6396
18	23,200		2.3553		1.5838		94.2234
19	68,800		6.9848		1.4924		95.7158
20	97,800		9.9289		1.3198		97.0356
21	16,600		1.6853		1.1675		98.2031
22	124,600		12.6497		0.9442		99.1473
23	84,000		8.5279		0.3959		99.5432
24	67,500		6.8528		0.3046		99.8478
25	3,900		0.3959		0.1827		100.0305
Grand Total	985,000		100.0305		100.0305		1892.1325

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B.38: CALCULATION OF THE TRESS INDICES FOR GREAT BRITAIN FOR THE 152 MLH JUNE 1968

MLH /	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	386,200		1.6681		8.6735		8.6735
2	17,700		0.0765		6.9130		15.5866
3	21,000		0.0907		5.6773		21.2638
4	446,300		1.9277		4.2078		25.4716
5	21,800		0.0942		3.5988		29.0705
6	26,800		0.1158		2.9138		31.9842
7	11,000		0.0475		2.5682		34.5525
8	37,400	0.4269	0.1615	5.4793	2.5484	5.4793	37.1008
9	152,400	1.7397	0.6583	4.4976	2.3518	9.9768	39.4527
10	52,800	0.6027	0.2281	4.1152	2.0733	14.0920	41.5259
11	90,000	1.0274	0.3887	3.8617	2.0184	17.9537	43.5443
12	36,200	0.4132	0.1564	3.2168	1.9277	21.1705	45.4720
13	15,100	0.1724	0.0652	3.0809	1.9147	24.2514	47.3867
14	88,400	1.0091	0.3818	3.0284	1.8607	27.2799	49.2475
15	72,800	0.8310	0.3144	2.7876	1.7018	30.0674	50.9492
16	26,800	0.3059	0.1158	2.6586	1.6681	32.7260	52.6174
17	51,900	0.5924	0.2242	2.4508	1.5571	35.1768	54.1745
18	91,400	1.0433	0.3948	2.1244	1.4612	37.3012	55.6357
19	68,400	0.7808	0.2954	1.7967	1.2880	39.0979	56.9237
20	39,400	0.4498	0.1702	1.7716	1.2172	40.8695	58.1408
21	15,600	0.1781	0.0674	1.7431	1.1658	42.6126	59.3066
22	35,100	0.4007	0.1516	1.7397	1.1459	44.3523	60.4525
23	8,400	0.0959	0.0363	1.6518	1.1381	46.0040	61.5906
24	232,900	2.6586	1.0060	1.5239	1.0548	47.5280	62.6454
25	80,600	0.9201	0.3481	1.5091	1.0526	49.0370	63.6980
26							
27	44,400	0.5068	0.1918	1.4794	1.0392	50.5164	64.7372
28	35,000	0.3995	0.1512	1.4600	1.0060	51.9764	65.7432
29	40,100	0.4577	0.1732	1.3584	0.9273	53.3348	66.6705
30	13,900	0.1587	0.0600	1.2808	0.8257	54.6156	67.4963
31	281,800	3.2168	1.2172	1.2785	0.8038	55.8941	68.3002
32	53,600	0.6119	0.2315	1.2728	0.6799	57.1669	68.9800
33	111,500	1.2728	0.4816	1.2043	0.6704	58.3712	69.6503
34	59,200	0.6758	0.2557	1.1655	0.6596	59.5366	70.3099

TABLE B. 38 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	85,700	0.9783	0.3702	1.1175	0.6583	60.6542	70.9681
36	34,900	0.3984	0.1507	1.1061	0.6574	61.7603	71.6255
37	97,900	1.1175	0.4229	1.0673	0.6250	62.8276	72.2505
38	71,200	0.8128	0.3075	1.0559	0.6025	63.8835	72.8531
39	37,900	0.4326	0.1637	1.0433	0.5870	64.9268	73.4400
40	46,200	0.5274	0.1996	1.0274	0.5853	65.9542	74.0253
41	40,600	0.4635	0.1754	1.0091	0.5766	66.9633	74.6019
42	59,600	0.6803	0.2574	0.9783	0.5710	67.9416	75.1729
43	49,000	0.5593	0.2116	0.9749	0.5598	68.9164	75.7327
44	360,500	4.1152	1.5571	0.9303	0.5537	69.8467	76.2864
45	186,100	2.1244	0.8038	0.9201	0.5524	70.7668	76.8388
46	269,900	3.0809	1.1658	0.8516	0.5468	71.6183	77.3857
47							
48	133,500	1.5239	0.5766	0.8459	0.5140	72.4642	77.8996
49	14,000	0.1598	0.0605	0.8310	0.4846	73.2952	78.3843
50	214,700	2.4508	0.9273	0.8128	0.4838	74.1080	78.8680
51	55,700	0.6358	0.2406	0.7808	0.4816	74.8887	79.3496
52	92,500	1.0559	0.3995	0.7625	0.4751	75.6513	79.8247
53	338,300	3.8617	1.4612	0.7317	0.4557	76.3830	80.2804
54	59,900	0.6838	0.2587	0.7260	0.4410	77.1090	80.7214
55	152,700	1.7431	0.6596	0.7077	0.4311	77.8167	81.1525
56	157,400	1.7967	0.6799	0.6849	0.4311	78.5016	81.5835
57	39,600	0.4520	0.1710	0.6838	0.4229	79.1854	82.0064
58	480,000	5.4793	2.0733	0.6803	0.4185	79.8657	82.4249
59	23,000	0.2625	0.0993	0.6758	0.4039	80.5415	82.8287
60	244,200	2.7876	1.0548	0.6358	0.3995	81.1773	83.2283
61	28,300	0.3230	0.1222	0.6119	0.3965	81.7891	83.6248
62	32,400	0.3699	0.1399	0.6027	0.3948	82.3918	84.0195
63	5,400	0.0616	0.0233	0.5924	0.3887	82.9843	84.4083
64	22,300	0.2546	0.0963	0.5593	0.3818	83.5436	84.7901
65	13,100	0.1495	0.0566	0.5297	0.3801	84.0733	85.1702
66	46,400	0.5297	0.2004	0.5274	0.3702	84.6006	85.5403
67	42,800	0.4886	0.1849	0.5068	0.3689	85.1075	85.9092
68	34,200	0.3904	0.1477	0.4886	0.3585	85.5960	86.2677

TABLE B. 38 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	25,500	0.2911	0.1101	0.4886	0.3520	86.0846	86.6197
70	394,000	4.4976	1.7018	0.4703	0.3481	86.5549	86.9678
71	40,900	0.4669	0.1767	0.4669	0.3222	87.0217	87.2900
72	85,400	0.9749	0.3689	0.4635	0.3201	87.4852	87.6101
73	74,600	0.8516	0.3222	0.4635	0.3144	87.9486	87.9245
74	155,200	1.7716	0.6704	0.4577	0.3136	88.4064	88.2381
75	15,800	0.1804	0.0682	0.4520	0.3075	88.8584	88.5456
76	9,400	0.1073	0.0406	0.4520	0.2954	89.3104	88.8410
77	127,900	1.4600	0.5524	0.4498	0.2885	89.7602	89.1296
78	8,000	0.0913	0.0346	0.4463	0.2769	90.2065	89.4064
79	42,800	0.4886	0.1849	0.4326	0.2764	90.6391	89.6828
80	21,000	0.2397	0.0907	0.4304	0.2747	91.0695	89.9576
81	30,200	0.3447	0.1304	0.4269	0.2678	91.4964	90.2253
82	64,100	0.7317	0.2769	0.4132	0.2592	91.9096	90.4845
83	26,100	0.2979	0.1127	0.4007	0.2587	92.3103	90.7432
84	25,600	0.2922	0.1106	0.3995	0.2574	92.7098	91.0006
85	23,300	0.2660	0.1006	0.3984	0.2557	93.1082	91.2563
86	7,800	0.0890	0.0337	0.3904	0.2553	93.4986	91.5116
87	26,500	0.3025	0.1145	0.3699	0.2406	93.8684	91.7522
88	112,200	1.2808	0.4846	0.3447	0.2315	94.2131	91.9837
89	62,000	0.7077	0.2678	0.3230	0.2281	94.5362	92.2117
90	40,600	0.4635	0.1754	0.3059	0.2242	94.8421	92.4359
91	112,000	1.2785	0.4838	0.3025	0.2116	95.1446	92.6475
92	9,900	0.1130	0.0428	0.2979	0.2004	95.4425	92.8479
93	37,700	0.4304	0.1628	0.2922	0.1996	95.7347	93.0475
94	96,900	1.1061	0.4185	0.2911	0.1983	96.0258	93.2457
95	66,800	0.7625	0.2885	0.2911	0.1922	96.3169	93.4379
96	60,000	0.6849	0.2592	0.2660	0.1918	96.5829	93.6297
97	81,500	0.9303	0.3520	0.2625	0.1849	96.8454	93.8145
98	17,300	0.1975	0.0747	0.2546	0.1849	97.0999	93.9994
99	132,200	1.5191	0.5710	0.2454	0.1780	97.3454	94.1774
100	119,000	1.3584	0.5140	0.2397	0.1767	97.5851	94.3540
101	102,100	1.1655	0.4410	0.2249	0.1754	97.8100	94.5294
102	19,700	0.2249	0.0851	0.1975	0.1754	98.0074	94.7047

TABLE B. 38 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	39,100	0.4463	0.1689	0.1804	0.1754	98.1878	94.8801
104	25,500	0.2911	0.1101	0.1781	0.1732	98.3659	95.0533
105	21,500	0.2454	0.0929	0.1724	0.1710	98.5382	95.2243
106	93,500	1.0673	0.4039	0.1598	0.1710	98.6980	95.3953
107	63,600	0.7260	0.2747	0.1587	0.1702	98.8567	95.5655
108	74,100	0.8459	0.3201	0.1541	0.1689	99.0108	95.7344
109	144,700	1.6518	0.6250	0.1495	0.1637	99.1603	95.8981
110	265,300	3.0284	1.1459	0.1415	0.1628	99.3019	96.0609
111	129,600	1.4794	0.5598	0.1393	0.1615	99.4411	96.2224
112	13,500	0.1541	0.0583	0.1130	0.1564	99.5541	96.3788
113	12,400	0.1415	0.0536	0.1073	0.1516	99.6614	96.5304
114	39,600	0.4520	0.1710	0.0959	0.1512	99.7573	96.6815
115	12,200	0.1393	0.0527	0.0913	0.1507	99.8486	96.8323
116	105,500	1.2043	0.4557	0.0890	0.1477	99.9377	96.9800
117	41,200	0.4703	0.1780	0.0616	0.1399	99.9993	97.1199
Total all manufacturing	8,760,300	100.0000		100.0000		8117.6197	
118	1,600,500		6.9130		0.1304		97.2504
119	128,200		0.5537		0.1222		97.3726
120	243,700		1.0526		0.1158		97.4883
121	45,900		0.1983		0.1158		97.6041
122	298,200		1.2880		0.1145		97.7186
123	263,500		1.1381		0.1127		97.8313
124	240,600		1.0392		0.1106		97.9418
125	88,000		0.3801		0.1101		98.0520
126	135,500		0.5853		0.1101		98.1621
127	64,000		0.2764		0.1006		98.2628
128	443,300		1.9147		0.0993		98.3621
129	83,000		0.3585		0.0963		98.4584
130	544,500		2.3518		0.0942		98.5526
131	2,008,100		8.6735		0.0929		98.6454
132	135,900		0.5870		0.0907		98.7361
133	139,500		0.6025		0.0907		98.8260

TABLE B. 38 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	674,600		2.9138		0.0903		98.9171
135	91,800		0.3965		0.0851		99.0022
136	1,314,400		5.6773		0.0765		99.0786
137	110,000		0.4751		0.0747		99.1533
138	974,200		4.2078		0.0682		99.2216
139	20,900		0.0903		0.0674		99.2889
140	191,200		0.8258		0.0652		99.3541
141	126,600		0.5468		0.0605		99.4146
142	72,600		0.3136		0.0600		99.4746
143	59,100		0.2553		0.0583		99.5329
144	590,000		2.5484		0.0566		99.5895
145	99,800		0.4311		0.0536		99.6431
146	40,600		0.1754		0.0527		99.6958
147	430,800		1.8607		0.0475		99.7433
148	10,200		0.0441		0.0441		99.7873
149	99,800		0.4311		0.0428		99.8301
150	152,200		0.6574		0.0406		99.8707
151	467,300		2.0184		0.0363		99.9069
152	594,600		2.5682		0.0346		99.9415
153	833,200		3.5988		0.0337		99.9751
154	44,500		0.1922		0.0233		99.9985
Grand Total	23,152,000		99.9997		99.9997		12466.3140

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 39: CALCULATION OF THE TRESS INDICES FOR THE SOUTH EAST FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	97,300		1.2202		9.3391		9.3391
2	3,000		0.0376		6.2528		15.5919
3	0		0.0		5.3599		20.9518
4	7,700		0.0966		4.7968		25.7487
5	1,500		0.0188		4.2689		30.0175
6	6,600		0.0828		3.8839		33.9014
7	2,000		0.0251		3.5051		37.4065
8	11,600	0.4567	0.1455	8.0197	3.4926	8.0197	40.8991
9	38,600	1.5197	0.4841	6.0197	3.0850	14.0394	43.9841
10	13,200	0.5197	0.1655	5.3189	2.7878	19.3583	46.7719
11	23,700	0.9331	0.2972	4.8976	2.5546	24.2559	49.3265
12	9,100	0.3583	0.1141	3.6417	2.5144	27.8976	51.8409
13	5,900	0.2323	0.0740	3.4921	1.9175	31.3897	53.7584
14	21,900	0.8622	0.2746	3.2992	1.8924	34.6889	55.6508
15	16,100	0.6339	0.2019	3.1732	1.6943	37.8622	57.3450
16	5,200	0.2047	0.0652	2.8228	1.5601	40.6850	58.9051
17	20,000	0.7874	0.2508	2.5945	1.4046	43.2794	60.3096
18	27,500	1.0827	0.3449	1.9646	1.3795	45.2440	61.6891
19	17,700	0.6969	0.2220	1.9213	1.2202	47.1653	62.9093
20	10,100	0.3976	0.1267	1.9213	1.1600	49.0865	64.0693
21	0	0.0	0.0	1.8701	1.1124	50.9566	65.1817
22	21,400	0.8425	0.2684	1.7953	1.0660	52.7519	66.2477
23	2,800	0.1102	0.0351	1.7874	1.0509	54.5393	67.2986
24	47,500	1.8701	0.5957	1.7283	1.0108	56.2676	68.3093
25	48,800	1.9213	0.6120	1.6614	0.9895	57.9290	69.2988
26							
27	20,600	0.8110	0.2583	1.5748	0.9895	59.5038	70.2882
28	6,900	0.2717	0.0865	1.5197	0.8992	61.0235	71.1874
29	9,100	0.3583	0.1141	1.4449	0.8327	62.4684	72.0201
30	8,100	0.3189	0.1016	1.4213	0.8264	63.8896	72.8465
31	3,900	0.1535	0.0489	1.3150	0.7449	65.2046	73.5915
32	3,600	0.1417	0.0451	1.2087	0.7374	66.4132	74.3289
33	7,500	0.2953	0.0941	1.2008	0.7361	67.6140	75.0650
34	14,200	0.5591	0.1781	1.1968	0.6922	68.8108	75.7572

TABLE B. 39: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	17,600	0.6929	0.2207	1.0827	0.6408	69.8935	76.3981
36	8,800	0.3465	0.1104	1.0236	0.6346	70.9171	77.0326
37	26,000	1.0236	0.3261	0.9567	0.6258	71.8738	77.6584
38	24,300	0.9567	0.3047	0.9331	0.6132	72.8069	78.2716
39	7,500	0.2953	0.0941	0.9331	0.6120	73.7399	78.8836
40	1,200	0.0472	0.0150	0.9252	0.6120	74.6651	79.4956
41	8,400	0.3307	0.1053	0.8622	0.5994	75.5273	80.0950
42	16,300	0.6417	0.2044	0.8583	0.5994	76.3856	80.6945
43	23,500	0.9252	0.2947	0.8425	0.5957	77.2281	81.2901
44	124,400	4.8976	1.5601	0.8110	0.5719	78.0391	81.8620
45	42,200	1.6614	0.5292	0.7874	0.5694	78.8265	82.4313
46	80,600	3.1732	1.0108	0.7835	0.5505	79.6100	82.9819
47							
48	92,500	3.6417	1.1600	0.7441	0.5405	80.3540	83.5224
49	3,700	0.1457	0.0464	0.7441	0.5292	81.0981	84.0516
50	43,900	1.7283	0.5505	0.7323	0.5242	81.8304	84.5758
51	23,700	0.9331	0.2972	0.7165	0.5016	82.5469	85.0774
52	30,700	1.2087	0.3850	0.6969	0.4929	83.2437	85.5702
53	203,700	8.0197	2.5546	0.6929	0.4841	83.9366	86.0543
54	21,800	0.8583	0.2734	0.6654	0.4602	84.6020	86.5145
55	65,900	2.5945	0.8264	0.6417	0.4527	85.2437	86.9673
56	30,500	1.2008	0.3825	0.6339	0.4189	85.8776	87.3861
57	10,700	0.4213	0.1342	0.5591	0.3850	86.4366	87.7711
58	152,900	6.0197	1.9175	0.5197	0.3825	86.9563	88.1536
59	1,600	0.0630	0.0201	0.5118	0.3812	87.4681	88.5348
60	71,700	2.8228	0.8992	0.4961	0.3449	87.9642	88.8797
61	2,300	0.0906	0.0288	0.4567	0.3436	88.4208	89.2233
62	7,800	0.3071	0.0978	0.4213	0.3261	88.8421	89.5493
63	1,500	0.0591	0.0188	0.4213	0.3047	89.2633	89.8541
64	2,500	0.0984	0.0314	0.3976	0.2972	89.6610	90.1513
65	5,200	0.2047	0.0652	0.3937	0.2972	90.0547	90.4485
66	5,900	0.2323	0.0740	0.3819	0.2947	90.4365	90.7432
67	5,200	0.2047	0.0652	0.3583	0.2746	90.7948	91.0178
68	10,700	0.4213	0.1342	0.3583	0.2734	91.1531	91.2912

TABLE B. 39: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	10,000	0.3937	0.1264	0.3465	0.2684	91.4995	91.5596
70	88,700	3.4921	1.1124	0.3465	0.2583	91.8460	91.8179
71	0	0.0	0.0	0.3465	0.2508	92.1924	92.0687
72	2,400	0.0945	0.0301	0.3425	0.2496	92.5349	92.3183
73	1,600	0.0630	0.0201	0.3307	0.2383	92.8656	92.5565
74	2,100	0.0827	0.0263	0.3307	0.2370	93.1963	92.7935
75	0	0.0	0.0	0.3307	0.2370	93.5270	93.0306
76	1,400	0.0551	0.0176	0.3268	0.2333	93.8538	93.2638
77	8,000	0.3150	0.1003	0.3189	0.2282	94.1727	93.4921
78	0	0.0	0.0	0.3150	0.2220	94.4877	93.7140
79	0	0.0	0.0	0.3071	0.2207	94.7947	93.9347
80	1,400	0.0551	0.0176	0.2953	0.2119	95.0900	94.1467
81	6,500	0.2559	0.0815	0.2953	0.2044	95.3853	94.3511
82	3,500	0.1378	0.0439	0.2717	0.2019	95.6569	94.5530
83	4.100	0.1614	0.0514	0.2638	0.1894	95.9207	94.7423
84	3,900	0.1535	0.0489	0.2559	0.1818	96.1766	94.9242
85	8,800	0.3465	0.1104	0.2402	0.1781	96.4168	95.1022
86	6,100	0.2402	0.0765	0.2362	0.1655	96.6530	95.2678
87	2,500	0.0984	0.0314	0.2323	0.1630	96.8852	95.4308
88	18,900	0.7441	0.2370	0.2323	0.1580	97.1175	95.5888
89	36,700	1.4449	0.4602	0.2047	0.1505	97.3222	95.7393
90	9,700	0.3819	0.1216	0.2047	0.1455	97.5269	95.8847
91	45,600	1.7953	0.5719	0.2047	0.1342	97.7316	96.0189
92	6,000	0.2362	0.0752	0.1929	0.1342	97.9245	96.1531
93	12,600	0.4961	0.1580	0.1614	0.1267	98.0860	96.2798
94	8,700	0.3425	0.1091	0.1535	0.1254	98.2395	96.4052
95	13,000	0.5118	0.1630	0.1535	0.1216	98.3930	96.5268
96	3,100	0.1220	0.0389	0.1457	0.1179	98.5387	96.6447
97	16,900	0.6654	0.2119	0.1417	0.1141	98.6804	96.7588
98	8,400	0.3307	0.1053	0.1378	0.1141	98.8182	96.8729
99	45,400	1.7874	0.5694	0.1220	0.1104	98.9402	96.9833
100	40,000	1.5748	0.5016	0.1102	0.1104	99.0505	97.0936
101	49,900	1.9646	0.6258	0.0984	0.1104	99.1489	97.2040
102	6,700	0.2638	0.0840	0.0984	0.1091	99.2473	97.3131

TABLE B. 39: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	18,900	0.7441	0.2370	0.0945	0.1053	99.3418	97.4184
104	8,300	0.3268	0.1041	0.0906	0.1053	99.4323	97.5237
105	8,400	0.3307	0.1053	0.0827	0.1053	99.5150	97.6291
106	36,100	1.4213	0.4527	0.0630	0.1041	99.5780	97.7331
107	19,900	0.7835	0.2496	0.0630	0.1016	99.6410	97.8347
108	33,400	1.3150	0.4189	0.0591	0.1003	99.7000	97.9350
109	83,800	3.2992	1.0509	0.0551	0.0978	99.7551	98.0328
110	135,100	5.3189	1.6943	0.0551	0.0966	99.8103	98.1294
111	30,400	1.1968	0.3812	0.0551	0.0941	99.8654	98.2234
112	1,400	0.0551	0.0176	0.0472	0.0941	99.9126	98.3175
113	4,900	0.1929	0.0614	0.0	0.0865	99.9126	98.4040
114	18,600	0.7323	0.2333	0.0	0.0840	99.9126	98.4880
115	8,800	0.3465	0.1104	0.0	0.0828	99.9126	98.5708
116	48,800	1.9213	0.6120	0.0	0.0815	99.9126	98.6523
117	18,200	0.7165	0.2282	0.0	0.0765	99.9126	98.7288
Total all manufacturing	2,540,000	99.9139		99.9139		8690.0767	
118	498,600		6.2528		0.0752		98.8040
119	51,100		0.6408		0.0740		98.8780
120	78,900		0.9895		0.0740		98.9520
121	15,100		0.1894		0.0652		99.0172
122	110,000		1.3795		0.0652		99.0824
123	85,000		1.0660		0.0652		99.1476
124	66,400		0.8327		0.0614		99.2091
125	50,600		0.6346		0.0514		99.2605
126	58,700		0.7361		0.0489		99.3094
127	55,200		0.6922		0.0489		99.3583
128	200,500		2.5144		0.0464		99.4047
129	47,800		0.5994		0.0451		99.4498
130	246,000		3.0850		0.0451		99.4949
131	744,700		9.3391		0.0439		99.5388
132	47,800		0.5994		0.0389		99.5777
133	59,400		0.7449		0.0376		99.6153

TABLE B. 39: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	385,500		4.7968		0.0351		99.6504
135	41,800		0.5242		0.0314		99.6818
136	427,400		5.3599		0.0314		99.7131
137	48,900		0.6132		0.0301		99.7432
138	340,400		4.2689		0.0288		99.7720
139	12,000		0.1505		0.0263		99.7984
140	112,000		1.4046		0.0251		99.8234
141	78,900		0.9895		0.0201		99.8435
142	27,400		0.3436		0.0201		99.8635
143	19,000		0.2383		0.0188		99.8823
144	222,300		2.7878		0.0188		99.9011
145	43,100		0.5405		0.0176		99.9187
146	14,500		0.1818		0.0176		99.9362
147	150,900		1.8924		0.0176		99.9538
148	3,600		0.0451		0.0150		99.9688
149	39,300		0.4929		0.0		99.9688
150	58,800		0.7374		0.0		99.9688
151	278,500		3.4926		0.0		99.9688
152	279,500		3.5051		0.0		99.9688
153	309,700		3.8839		0.0		99.9688
154	9,400		0.1179		0.0		99.9688
Grand Total	7,974,000		99.9697		99.9697		12987.7876

Source of Data: Employmeat and Productivity Gazette, March 1969

TABLE B. 40: CALCULATION OF THE TRESS INDICES FOR THE SOUTH WEST FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	45,300		3.3806		8.8955		8.8955
2	1,700		0.1269		7.8358		16.7313
3	0		0.0		6.7687		23.5000
4	1,000		0.0746		5.0672		28.5671
5	4,000		0.2985		4.2687		32.8358
6	7,800		0.5821		3.8731		36.7089
7	1,100		0.0821		3.7761		40.4850
8	3,100	0.7395	0.2313	9.9475	3.3806	9.9475	43.8656
9	10,400	2.4809	0.7761	5.4866	3.1119	15.4342	46.9775
10	0	0.0	0.0	4.8426	2.5448	20.2767	49.5223
11	8,500	2.0277	0.6343	4.1269	2.3134	24.4036	51.8357
12	10,200	2.4332	0.7612	3.6975	2.1642	28.1011	53.9999
13	0	0.0	0.0	3.3158	2.0149	31.4169	56.0148
14	5,300	1.2643	0.3955	3.1250	1.7164	34.5419	57.7312
15	1,600	0.3817	0.1194	2.6956	1.5149	37.2375	59.2462
16	4,300	1.0258	0.3209	2.6002	1.4627	39.8377	60.7088
17	2,300	0.5487	0.1716	2.6002	1.3209	42.4379	62.0297
18	6,000	1.4313	0.4478	2.4809	1.2910	44.9188	63.3208
19	3,900	0.9303	0.2910	2.4332	1.1866	47.3520	64.5073
20	8,500	2.0277	0.6343	2.0754	1.1866	49.4274	65.6939
21	0	0.0	0.0	2.0515	1.1567	51.4789	66.8506
22	0	0.0	0.0	2.0277	1.1493	53.5066	67.9998
23	0	0.0	0.0	2.0277	1.1119	55.5343	69.1118
24	8,100	1.9323	0.6045	1.9323	1.0373	57.4665	70.1491
25	1,100	0.2624	0.0821	1.6698	1.0149	59.1364	71.1640
26							
27	1,200	0.2863	0.0896	1.6698	0.9776	60.8062	72.1416
28	0	0.0	0.0	1.6460	0.8582	62.4522	72.9998
29	1,800	0.4294	0.1343	1.4313	0.8433	63.8835	73.8431
30	0	0.0	0.0	1.3597	0.8134	65.2432	74.6565
31	0	0.0	0.0	1.2643	0.8134	66.5075	75.4699
32	0	0.0	0.0	1.2643	0.7761	67.7718	76.2460
33	2,100	0.5010	0.1567	1.2643	0.7612	69.0361	77.0072
34	0	0.0	0.0	1.2166	0.6493	70.2527	77.6565

TABLE B. 40: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	2,700	0.6441	0.2015	1.1212	0.6418	71.3739	78.2983
36	2,500	0.5964	0.1866	1.0973	0.6343	72.4712	78.9326
37	3,400	0.8111	0.2537	1.0973	0.6343	73.5685	79.5669
38	2,500	0.5964	0.1866	1.0735	0.6045	74.6420	80.1714
39	5,300	1.2643	0.3955	1.0258	0.5821	75.6678	80.7535
40	0	0.0	0.0	0.9542	0.5821	76.6220	81.3355
41	1,800	0.4294	0.1343	0.9303	0.5672	77.5523	81.9027
42	4,600	1.0973	0.3433	0.8588	0.5224	78.4111	82.4251
43	3,500	0.8349	0.2612	0.8588	0.5224	79.2698	82.9475
44	20,300	4.8426	1.5149	0.8349	0.5149	80.1047	83.4624
45	3,600	0.8588	0.2687	0.8111	0.4925	80.9158	83.9549
46	23,000	5.4866	1.7164	0.8111	0.4776	81.7269	84.4325
47							
48	8,600	2.0515	0.6418	0.8111	0.4776	82.5379	84.9101
49	0	0.0	0.0	0.7872	0.4478	83.3251	85.3579
50	10,900	2.6002	0.8134	0.7634	0.4254	84.0885	85.7832
51	0	0.0	0.0	0.7395	0.4179	84.8280	86.2011
52	0	0.0	0.0	0.7395	0.4179	85.5675	86.6190
53	15,500	3.6975	1.1567	0.6441	0.3955	86.2116	87.0146
54	2,400	0.5725	0.1701	0.5964	0.3955	86.8079	87.4101
55	3,400	0.8111	0.2537	0.5964	0.3955	87.4043	87.8056
56	13,100	3.1250	0.9776	0.5725	0.3806	87.9768	88.1862
57	4,000	0.9542	0.2985	0.5725	0.3507	88.5493	88.5369
58	13,900	3.3158	1.0373	0.5725	0.3433	89.1218	88.8802
59	0	0.0	0.0	0.5487	0.3433	89.6705	89.2234
60	41,700	9.9475	3.1119	0.5010	0.3358	90.1714	89.5593
61	5,300	1.2643	0.3955	0.5010	0.3209	90.6724	89.8802
62	0	0.0	0.0	0.4532	0.3209	91.1256	90.2010
63	0	0.0	0.0	0.4532	0.2985	91.5788	90.4995
64	0	0.0	0.0	0.4294	0.2985	92.0082	90.7980
65	0	0.0	0.0	0.4294	0.2985	92.4376	91.0965
66	0	0.0	0.0	0.4055	0.2910	92.8431	91.3876
67	0	0.0	0.0	0.4055	0.2687	93.2487	91.6562
68	0	0.0	0.0	0.3817	0.2687	93.6303	91.9249

TABLE B. 40: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.3578	0.2612	93.9881	92.1860
70	11,300	2.6956	0.8433	0.3340	0.2612	94.3221	92.4472
71	2,400	0.5725	0.1791	0.3340	0.2537	94.6561	92.7009
72	1,900	0.4532	0.1418	0.3101	0.2537	94.9662	92.9547
73	0	0.0	0.0	0.2863	0.2537	95.2524	93.2084
74	3,400	0.8111	0.2537	0.2863	0.2463	95.5387	93.4547
75	0	0.0	0.0	0.2624	0.2388	95.8011	93.6935
76	0	0.0	0.0	0.2624	0.2313	96.0635	93.9248
77	0	0.0	0.0	0.0	0.2313	96.0635	94.1561
78	0	0.0	0.0	0.0	0.2239	96.0635	94.3800
79	1,300	0.3101	0.0970	0.0	0.2015	96.0635	94.5815
80	0	0.0	0.0	0.0	0.1866	96.0635	94.7681
81	1,500	0.3578	0.1119	0.0	0.1866	96.0635	94.9546
82	0	0.0	0.0	0.0	0.1791	96.0635	95.1337
83	1,400	0.3340	0.1045	0.0	0.1791	96.0635	95.3128
84	3,300	0.7872	0.2463	0.0	0.1791	96.0635	95.4919
85	0	0.0	0.0	0.0	0.1791	96.0635	95.6710
86	0	0.0	0.0	0.0	0.1716	96.0635	95.8426
87	0	0.0	0.0	0.0	0.1716	96.0635	96.0142
88	2,100	0.5010	0.1567	0.0	0.1567	96.0635	96.1709
89	0	0.0	0.0	0.0	0.1567	96.0635	96.3277
90	3,100	0.7395	0.2313	0.0	0.1493	96.0635	96.4769
91	2,400	0.5725	0.1791	0.0	0.1418	96.0635	96.6187
92	0	0.0	0.0	0.0	0.1418	96.0635	96.7605
93	5,700	1.3597	0.4254	0.0	0.1343	96.0635	96.8948
94	10,900	2.6002	0.8134	0.0	0.1343	96.0635	97.0291
95	1,700	0.4055	0.1269	0.0	0.1269	96.0635	97.1560
96	1,400	0.3340	0.1045	0.0	0.1269	96.0635	97.2828
97	0	0.0	0.0	0.0	0.1269	96.0635	97.4097
98	0	0.0	0.0	0.0	0.1194	96.0635	97.5291
99	6,900	1.6460	0.5149	0.0	0.1194	96.0635	97.6485
100	8,700	2.0754	0.6493	0.0	0.1119	96.0635	97.7604
101	4,700	1.1212	0.3507	0.0	0.1045	96.0635	97.8649
102	1,200	0.2863	0.0896	0.0	0.1045	96.0635	97.9694

TABLE B. 40: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,900	0.4532	0.1418	0.0	0.0970	96.0635	98.0664
104	1,100	0.2624	0.0821	0.0	0.0896	96.0635	98.1559
105	1,700	0.4055	0.1269	0.0	0.0896	96.0635	98.2455
106	7,000	1.6698	0.5224	0.0	0.0821	96.0635	98.3275
107	5,100	1.2166	0.3806	0.0	0.0821	96.0635	98.4096
108	3,200	0.7634	0.2388	0.0	0.0821	96.0635	98.4917
109	4,500	1.0735	0.3358	0.0	0.0746	96.0635	98.5663
110	17,300	4.1269	1.2910	0.0	0.0	96.0635	98.5663
111	7,000	1.6698	0.5224	0.0	0.0	96.0635	98.5663
112	0	0.0	0.0	0.0	0.0	96.0635	98.5663
113	0	0.0	0.0	0.0	0.0	96.0635	98.5663
114	0	0.0	0.0	0.0	0.0	96.0635	98.5663
115	0	0.0	0.0	0.0	0.0	96.0635	98.5663
116	4,600	1.0973	0.3433	0.0	0.0	96.0635	98.5663
117	3,600	0.8588	0.2687	0.0	0.0	96.0635	98.5663
Total all manufacturing	419,200	96.0635		96.0635		8713.6680	
118	105,000		7.8358		0.0		98.5663
119	6,400		0.4776		0.0		98.5663
120	19,600		1.4627		0.0		98.5663
121	3,500		0.2612		0.0		98.5663
122	15,900		1.1866		0.0		98.5663
123	13,600		1.0149		0.0		98.5663
124	14,900		1.1119		0.0		98.5663
125	1,600		0.1194		0.0		98.5663
126	6,400		0.4776		0.0		98.5663
127	0		0.0		0.0		98.5663
128	31,000		2.3134		0.0		98.5663
129	3,000		0.2239		0.0		98.5663
130	27,000		2.0149		0.0		98.5663
131	119,200		8.8955		0.0		98.5663
132	15,400		1.1493		0.0		98.5663
133	5,600		0.4179		0.0		98.5663

TABLE B. 40 (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	29,000		2.1642		0.0		98.5663
135	4,300		0.3209		0.0		98.5663
136	90,700		6.7687		0.0		98.5663
137	7,800		0.5821		0.0		98.5663
138	67,900		5.0672		0.0		98.5663
139	0		0.0		0.0		98.5663
140	11,500		0.8582		0.0		98.5663
141	5,600		0.4179		0.0		98.5663
142	4,000		0.2985		0.0		98.5663
143	2,300		0.1716		0.0		98.5663
144	50,600		3.7761		0.0		98.5663
145	6,600		0.4925		0.0		98.5663
146	2,000		0.1493		0.0		98.5663
147	34,100		2.5448		0.0		98.5663
148	0		0.0		0.0		98.5663
149	7,600		0.5672		0.0		98.5663
150	15,900		1.1866		0.0		98.5663
151	17,700		1.3209		0.0		98.5663
152	57,200		4.2687		0.0		98.5663
153	51,900		3.8731		0.0		98.5663
154	2,400		0.1791		0.0		98.5663
Grand Total	1,340,000		98.5666		98.5666		13080.8242

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 41: CALCULATION OF THE TRESS INDICES FOR THE SOUTH WEST FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	45,300		3.4297		9.0248		9.0248
2	1,700		0.1287		7.9497		16.9745
3	0		0.0		6.8671		23.8416
4	1,000		0.0757		5.1408		28.9824
5	4,000		0.3028		4.3307		33.3131
6	7,800		0.5906		3.9294		37.2426
7	1,100		0.0833		3.8310		41.0736
8	3,100	0.7698	0.2347	10.3551	3.4297	10.3551	44.5033
9	10,400	2.5826	0.7874	5.7114	3.1572	16.0665	47.6605
10	0	0.0	0.0	5.0410	2.5818	21.1075	50.2422
11	8,500	2.1108	0.6435	4.2960	2.3471	25.4035	52.5893
12	10,200	2.5329	0.7723	3.8490	2.1956	29.2525	54.7849
13	0	0.0	0.0	3.4517	2.0442	32.7042	56.8291
14	5,300	1.3161	0.4013	3.2530	1.7414	35.9572	58.5705
15	1,600	0.3973	0.1211	2.8061	1.5369	38.7633	60.1074
16	4,300	1.0678	0.3256	2.7067	1.4839	41.4700	61.5914
17	2,300	0.5711	0.1741	2.7067	1.3401	44.1767	62.9315
18	6,000	1.4899	0.4543	2.5826	1.3098	46.7593	64.2413
19	3,900	0.9685	0.2953	2.5329	1.2038	49.2922	65.4451
20	8,500	2.1108	0.6435	2.1604	1.2038	51.4526	66.6489
21	0	0.0	0.0	2.1356	1.1735	53.5882	67.8224
22	0	0.0	0.0	2.1108	1.1660	55.6989	68.9884
23	0	0.0	0.0	2.1108	1.1281	57.8097	70.1165
24	8,100	2.0114	0.6133	2.0114	1.0524	59.8211	71.1688
25	1,100	0.2732	0.0833	1.7383	1.0297	61.5594	72.1985
26							
27	1,200	0.2980	0.0909	1.7383	0.9918	63.2976	73.1903
28	0	0.0	0.0	1.7134	0.8707	65.0111	74.0610
29	1,800	0.4470	0.1363	1.4899	0.8555	66.5010	74.9165
30	0	0.0	0.0	1.4154	0.8253	67.9164	75.7418
31	0	0.0	0.0	1.3161	0.8253	69.2325	76.5671
32	0	0.0	0.0	1.3161	0.7874	70.5486	77.3545
33	2,100	0.5215	0.1590	1.3161	0.7723	71.8647	78.1267
34	0	0.0	0.0	1.2665	0.6587	73.1312	78.7854

TABLE B. 41: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	2,700	0.6705	0.2044	1.1671	0.6511	74.2983	79.4365
36	2,500	0.6208	0.1893	1.1423	0.6435	75.4406	80.0800
37	3,400	0.8443	0.2574	1.1423	0.6435	76.5829	80.7236
38	2,500	0.6208	0.1893	1.1175	0.6133	77.7003	81.3368
39	5,300	1.3161	0.4013	1.0678	0.5906	78.7681	81.9274
40	0	0.0	0.0	0.9933	0.5906	79.7614	82.5179
41	1,800	0.4470	0.1363	0.9685	0.5754	80.7298	83.0933
42	4,600	1.1423	0.3483	0.8940	0.5300	81.6238	83.6233
43	3,500	0.8691	0.2650	0.8940	0.5300	82.5177	84.1533
44	20,300	5.0410	1.5369	0.8691	0.5224	83.3869	84.6757
45	3,600	0.8940	0.2726	0.8443	0.4997	84.2312	85.1754
46	23,000	5.7114	1.7414	0.8443	0.4846	85.0755	85.6599
47							
48	8,600	2.1356	0.6511	0.8443	0.4846	85.9198	86.1444
49	0	0.0	0.0	0.8195	0.4543	86.7392	86.5987
50	10,900	2.7067	0.8253	0.7946	0.4316	87.5339	87.0303
51	0	0.0	0.0	0.7698	0.4240	88.3036	87.4542
52	0	0.0	0.0	0.7698	0.4240	89.0734	87.8782
53	15,500	3.8490	1.1735	0.6705	0.4013	89.7439	88.2795
54	2,400	0.5960	0.1817	0.6208	0.4013	90.3647	88.6807
55	3,400	0.8443	0.2574	0.6208	0.4013	90.9855	89.0820
56	13,100	3.2530	0.9918	0.5960	0.3861	91.5815	89.4681
57	4,000	0.9933	0.3028	0.5960	0.3558	92.1774	89.8240
58	13,900	3.4517	1.0524	0.5960	0.3483	92.7734	90.1722
59	0	0.0	0.0	0.5711	0.3483	93.3445	90.5205
60	41,700	10.3551	3.1572	0.5215	0.3407	93.8660	90.8612
61	5,300	1.3161	0.4013	0.5215	0.3256	94.3875	91.1867
62	0	0.0	0.0	0.4718	0.3256	94.8593	91.5123
63	0	0.0	0.0	0.4718	0.3028	95.3311	91.8151
64	0	0.0	0.0	0.4470	0.3028	95.7781	92.1180
65	0	0.0	0.0	0.4470	0.3028	96.2250	92.4208
66	0	0.0	0.0	0.4222	0.2953	96.6472	92.7161
67	0	0.0	0.0	0.4222	0.2726	97.0693	92.9886
68	0	0.0	0.0	0.3973	0.2726	97.4666	93.2612

TABLE B. 41: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.3725	0.2650	97.8391	93.5262
70	11,300	2.8061	0.8555	0.3477	0.2650	98.1868	93.7912
71	2,400	0.5960	0.1817	0.3477	0.2574	98.5344	94.0486
72	1,900	0.4718	0.1439	0.3228	0.2574	98.8572	94.3060
73	0	0.0	0.0	0.2980	0.2574	99.1552	94.5634
74	3,400	0.8443	0.2574	0.2980	0.2498	99.4532	94.8132
75	0	0.0	0.0	0.2732	0.2423	99.7263	95.0555
76	0	0.0	0.0	0.2732	0.2347	99.9995	95.2902
77	0	0.0	0.0	0.0	0.2347	99.9995	95.5249
78	0	0.0	0.0	0.0	0.2271	99.9995	95.7520
79	1,300	0.3228	0.0984	0.0	0.2044	99.9995	95.9564
80	0	0.0	0.0	0.0	0.1893	99.9995	96.1457
81	1,500	0.3725	0.1136	0.0	0.1893	99.9995	96.3350
82	0	0.0	0.0	0.0	0.1817	99.9995	96.5167
83	1,400	0.3477	0.1060	0.0	0.1817	99.9995	96.6984
84	3,300	0.8195	0.2498	0.0	0.1817	99.9995	96.8801
85	0	0.0	0.0	0.0	0.1817	99.9995	97.0618
86	0	0.0	0.0	0.0	0.1741	99.9995	97.2359
87	0	0.0	0.0	0.0	0.1741	99.9995	97.4100
88	2,100	0.5215	0.1590	0.0	0.1590	99.9995	97.5690
89	0	0.0	0.0	0.0	0.1590	99.9995	97.7280
90	3,100	0.7698	0.2347	0.0	0.1514	99.9995	97.8794
91	2,400	0.5960	0.1817	0.0	0.1439	99.9995	98.0233
92	0	0.0	0.0	0.0	0.1439	99.9995	98.1671
93	5,700	1.4154	0.4316	0.0	0.1363	99.9995	98.3034
94	10,900	2.7067	0.8253	0.0	0.1363	99.9995	98.4397
95	1,700	0.4222	0.1287	0.0	0.1287	99.9995	98.5684
96	1,400	0.3477	0.1060	0.0	0.1287	99.9995	98.6971
97	0	0.0	0.0	0.0	0.1287	99.9995	98.8258
98	0	0.0	0.0	0.0	0.1211	99.9995	98.9469
99	6,900	1.7134	0.5224	0.0	0.1211	99.9995	99.0680
100	8,700	2.1604	0.6587	0.0	0.1136	99.9995	99.1816
101	4,700	1.1671	0.3558	0.0	0.1060	99.9995	99.2876
102	1,200	0.2980	0.0909	0.0	0.1060	99.9995	99.3936

TABLE B. 41: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	1,900	0.4718	0.1439	0.0	0.0984	99.9995	99.4920
104	1,100	0.2732	0.0833	0.0	0.0909	99.9995	99.5828
105	1,700	0.4222	0.1287	0.0	0.0909	99.9995	99.6737
106	7,000	1.7383	0.5300	0.0	0.0833	99.9995	99.7570
107	5,100	1.2665	0.3861	0.0	0.0833	99.9995	99.8403
108	3,200	0.7946	0.2423	0.0	0.0833	99.9995	99.9235
109	4,500	1.1175	0.3407	0.0	0.0757	99.9995	99.9992
110	17,300	4.2960	1.3098	0.0	0.0	99.9995	99.9992
111	7,000	1.7383	0.5300	0.0	0.0	99.9995	99.9992
112	0	0.0	0.0	0.0	0.0	99.9995	99.9992
113	0	0.0	0.0	0.0	0.0	99.9995	99.9992
114	0	0.0	0.0	0.0	0.0	99.9995	99.9992
115	0	0.0	0.0	0.0	0.0	99.9995	99.9992
116	4,600	1.1423	0.3483	0.0	0.0	99.9995	99.9992
117	3,600	0.8940	0.2726	0.0	0.0	99.9995	99.9992
Total all manufacturing	402,700	99.9996		99.9996		9070.5898	
118	105,000		7.9497		0.0		99.9992
119	6,400		0.4846		0.0		99.9992
120	19,600		1.4839		0.0		99.9992
121	3,500		0.2650		0.0		99.9992
122	15,900		1.2038		0.0		99.9992
123	13,600		1.0297		0.0		99.9992
124	14,900		1.1281		0.0		99.9992
125	1,600		0.1211		0.0		99.9992
126	6,400		0.4846		0.0		99.9992
127	0		0.0		0.0		99.9992
128	31,000		2.3471		0.0		99.9992
129	3,000		0.2271		0.0		99.9992
130	27,000		2.0442		0.0		99.9992
131	119,200		9.0248		0.0		99.9992
132	15,400		1.1660		0.0		99.9992
133	5,600		0.4240		0.0		99.9992

TABLE B. 41: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	29,000		2.1956		0.0		99.9992
135	4,300		0.3256		0.0		99.9992
136	90,700		6.8671		0.0		99.9992
137	7,800		0.5906		0.0		99.9992
138	67,900		5.1408		0.0		99.9992
139	0		0.0		0.0		99.9992
140	11,500		0.8707		0.0		99.9992
141	5,600		0.4240		0.0		99.9992
142	4,000		0.3028		0.0		99.9992
143	2,300		0.1741		0.0		99.9992
144	50,600		3.8310		0.0		99.9992
145	6,600		0.4997		0.0		99.9992
146	2,000		0.1514		0.0		99.9992
147	34,100		2.5818		0.0		99.9992
148	0		0.0		0.0		99.9992
149	7,600		0.5754		0.0		99.9992
150	15,900		1.2038		0.0		99.9992
151	17,700		1.3401		0.0		99.9992
152	57,200		4.3307		0.0		99.9992
153	51,900		3.9294		0.0		99.9992
154	2,400		0.1817		0.0		99.9992
Grand Total	1,320,800		99.9995		99.9995		13271.0312

Source of Data: Employment and Productivity Gazette, March 1969

*The Tress statistic index was calculated in this Table considering the values of the sub-total employment (only in manufacturing industries) and the Grand Total of employment (for all industries) as the real sums of the 152 MLH; in other words, the sub-total and total employment figures used were not the ones supplied by the source.

TABLE B. 42: CALCULATION OF THE TRESS INDICES FOR EAST ANGLIA FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	55,600		8.9968		8.9968		8.9968
2	0		0.0		8.5437		17.5405
3	1,500		0.2427		8.3010		25.8414
4	0		0.0		7.1036		32.9450
5	0		0.0		3.7217		36.6666
6	1,500		0.2427		3.6570		40.3236
7	0		0.0		2.6052		42.9288
8	2,400	1.2121	0.3883	7.9293	2.5405	7.9293	45.4692
9	2,500	1.2626	0.4045	7.3737	2.4919	15.3030	47.9611
10	0	0.0	0.0	6.5657	2.3625	21.8687	50.3236
11	3,700	1.8687	0.5987	5.3535	2.2330	27.2222	52.5566
12	0	0.0	0.0	4.2929	2.1036	31.5151	54.6601
13	2,100	1.0606	0.3398	3.7879	2.1036	35.3030	56.7637
14	3,400	1.7172	0.5502	3.6364	2.1036	38.9394	58.8672
15	15,700	7.9293	2.5405	3.0303	1.8123	41.9697	60.6795
16	1,800	0.9091	0.2913	2.3737	1.7152	44.3434	62.3947
17	3,000	1.5152	0.4854	2.2727	1.5858	46.6161	63.9805
18	3,400	1.7172	0.5502	2.1717	1.4401	48.7878	65.4206
19	1,400	0.7071	0.2265	2.1212	1.3916	50.9090	66.8121
20	0	0.0	0.0	1.9697	1.3754	52.8787	68.1875
21	0	0.0	0.0	1.8687	1.3269	54.7474	69.5144
22	0	0.0	0.0	1.8687	1.2136	56.6161	70.7280
23	0	0.0	0.0	1.8182	1.1812	58.4342	71.9092
24	4,700	2.3737	0.7605	1.7677	1.1650	60.2019	73.0742
25	0	0.0	0.0	1.7172	0.9709	61.9191	74.0451
26							
27	1,000	0.5051	0.1618	1.7172	0.8586	63.6362	74.9027
28	0	0.0	0.0	1.6667	0.7605	65.3029	75.6632
29	3,500	1.7677	0.5663	1.6162	0.7605	66.9191	76.4238
30	0	0.0	0.0	1.5152	0.7282	68.4342	77.1519
31	0	0.0	0.0	1.4646	0.6958	69.8988	77.8477
32	0	0.0	0.0	1.4141	0.6796	71.3130	78.5273
33	2,800	1.4141	0.4531	1.4141	0.6311	72.7271	79.1584
34	0	0.0	0.0	1.3636	0.6311	74.0907	79.7894

TABLE B. 42: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	0	0.0	0.0	1.2626	0.5987	75.3534	80.3881
36	7,200	3.6364	1.1650	1.2121	0.5987	76.5655	80.9868
37	1,900	0.9596	0.3074	1.1616	0.5825	77.7271	81.5693
38	0	0.0	0.0	1.1111	0.5663	78.8382	82.1357
39	0	0.0	0.0	1.0606	0.5502	79.8988	82.6858
40	0	0.0	0.0	1.0606	0.5502	80.9594	83.2360
41	2,900	1.4646	0.4693	1.0606	0.5340	82.0200	83.7699
42	0	0.0	0.0	1.0606	0.5178	83.0806	84.2877
43	0	0.0	0.0	0.9596	0.4854	84.0401	84.7731
44	10,600	5.3535	1.7152	0.9091	0.4854	84.9492	85.2586
45	2,100	1.0606	0.3398	0.7576	0.4854	85.7068	85.7440
46	3,600	1.8182	0.5825	0.7071	0.4693	86.4139	86.2133
47							
48	3,700	1.8687	0.5987	0.7071	0.4531	87.1209	86.6663
49	0	0.0	0.0	0.6566	0.4531	87.7775	87.1194
50	3,900	1.9697	0.6311	0.6566	0.4531	88.4340	87.5724
51	0	0.0	0.0	0.6061	0.4531	89.0401	88.0255
52	0	0.0	0.0	0.5051	0.4369	89.5451	88.4624
53	13,000	6.5657	2.1036	0.5051	0.4045	90.0502	88.8669
54	4,300	2.1717	0.6958	0.0	0.3883	90.0502	89.2553
55	2,100	1.0606	0.3398	0.0	0.3883	90.0502	89.6436
56	3,300	1.6667	0.5340	0.0	0.3722	90.0502	90.0158
57	0	0.0	0.0	0.0	0.3560	90.0502	90.3717
58	14,600	7.3737	2.3625	0.0	0.3560	90.0502	90.7277
59	0	0.0	0.0	0.0	0.3398	90.0502	91.0675
60	1,500	0.7576	0.2427	0.0	0.3398	90.0502	91.4073
61	0	0.0	0.0	0.0	0.3398	90.0502	91.7471
62	0	0.0	0.0	0.0	0.3398	90.0502	92.0869
63	0	0.0	0.0	0.0	0.3236	90.0502	92.4105
64	0	0.0	0.0	0.0	0.3074	90.0502	92.7180
65	0	0.0	0.0	0.0	0.3074	90.0502	93.0254
66	0	0.0	0.0	0.0	0.2913	90.0502	93.3167
67	0	0.0	0.0	0.0	0.2589	90.0502	93.5755
68	1,300	0.6566	0.2104	0.0	0.2427	90.0502	93.8183

TABLE B. 42: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.0	0.2427	90.0502	94.0610
70	2,100	1.0606	0.3398	0.0	0.2427	90.0502	94.3037
71	0	0.0	0.0	0.0	0.2265	90.0502	94.5302
72	0	0.0	0.0	0.0	0.2265	90.0502	94.7567
73	0	0.0	0.0	0.0	0.2104	90.0502	94.9671
74	0	0.0	0.0	0.0	0.2104	90.0502	95.1774
75	0	0.0	0.0	0.0	0.1942	90.0502	95.3716
76	0	0.0	0.0	0.0	0.1780	90.0502	95.5496
77	0	0.0	0.0	0.0	0.1618	90.0502	95.7114
78	0	0.0	0.0	0.0	0.1618	90.0502	95.8732
79	0	0.0	0.0	0.0	0.1618	90.0502	96.0350
80	0	0.0	0.0	0.0	0.0	90.0502	96.0350
81	0	0.0	0.0	0.0	0.0	90.0502	96.0350
82	0	0.0	0.0	0.0	0.0	90.0502	96.0350
83	0	0.0	0.0	0.0	0.0	90.0502	96.0350
84	0	0.0	0.0	0.0	0.0	90.0502	96.0350
85	0	0.0	0.0	0.0	0.0	90.0502	96.0350
86	0	0.0	0.0	0.0	0.0	90.0502	96.0350
87	0	0.0	0.0	0.0	0.0	90.0502	96.0350
88	2,200	1.1111	0.3560	0.0	0.0	90.0502	96.0350
89	0	0.0	0.0	0.0	0.0	90.0502	96.0350
90	0	0.0	0.0	0.0	0.0	90.0502	96.0350
91	0	0.0	0.0	0.0	0.0	90.0502	96.0350
92	0	0.0	0.0	0.0	0.0	90.0502	96.0350
93	1,000	0.5051	0.1618	0.0	0.0	90.0502	96.0350
94	7,500	3.7879	1.2136	0.0	0.0	90.0502	96.0350
95	4,500	2.2727	0.7282	0.0	0.0	90.0502	96.0350
96	0	0.0	0.0	0.0	0.0	90.0502	96.0350
97	0	0.0	0.0	0.0	0.0	90.0502	96.0350
98	0	0.0	0.0	0.0	0.0	90.0502	96.0350
99	2,800	1.4141	0.4531	0.0	0.0	90.0502	96.0450
100	6,000	3.0303	0.9709	0.0	0.0	90.0502	96.0350
101	3,200	1.6162	0.5178	0.0	0.0	90.0502	96.0350
102	0	0.0	0.0	0.0	0.0	90.0502	96.0350

TABLE B. 42: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	0	0.0	0.0	0.0	0.0	90.0502	96.0305
104	0	0.0	0.0	0.0	0.0	90.0502	96.0350
105	0	0.0	0.0	0.0	0.0	90.0502	96.0350
106	0	0.0	0.0	0.0	0.0	90.0502	96.0350
107	1,400	0.7071	0.2265	0.0	0.0	90.0502	96.0350
108	2,300	1.1616	0.3722	0.0	0.0	90.0502	96.0350
109	2,700	1.3636	0.4369	0.0	0.0	90.0502	96.0350
110	8,500	4.2929	1.3754	0.0	0.0	90.0502	96.0350
111	1,300	0.6566	0.2104	0.0	0.0	90.0502	96.0350
112	0	0.0	0.0	0.0	0.0	90.0502	96.0350
113	1,200	0.6061	0.1942	0.0	0.0	90.0502	96.0350
114	0	0.0	0.0	0.0	0.0	90.0502	96.0350
115	0	0.0	0.0	0.0	0.0	90.0502	96.0350
116	4,200	2.1212	0.6796	0.0	0.0	90.0502	96.0350
117	0	0.0	0.0	0.0	0.0	90.0502	96.0350
Total all manufacturing	198,000	90.0507		90.0507		8578.5597	
118	51,300		8,3010		0.0		96.0350
119	2,200		0.3560		0.0		96.0350
120	8,200		1.3269		0.0		96.0350
121	1,100		0.1780		0.0		96.0350
122	8,600		1.3916		0.0		96.0350
123	4,700		0.7605		0.0		96.0350
124	8,900		1.4401		0.0		96.0350
125	0		0.0		0.0		96.0350
126	2,000		0.3236		0.0		96.0350
127	0		0.0		0.0		96.0350
128	13,000		2.1036		0.0		96.0350
129	0		0.0		0.0		96.0350
130	11,200		1.8123		0.0		96.0350
131	52.800		8.5437		0.0		96.0350
132	5,300		0.8576		0.0		96.0350
133	2,400		0.3883		0.0		96.0350

TABLE 42: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	13,000		2.1036		0.0		96.0350
135	1,900		0.3074		0.0		96.0350
136	43,900		7.1036		0.0		96.0350
137	2,800		0.4531		0.0		96.0350
138	23,000		3.7217		0.0		96.0350
139	0		0.0		0.0		96.0350
140	3,900		0.6311		0.0		96.0350
141	1,600		0.2589		0.0		96.0350
142	3,000		0.4854		0.0		96.0350
143	0		0.0		0.0		96.0350
144	15,400		2.4919		0.0		96.0350
145	2,800		0.4531		0.0		96.0350
146	1,000		0.1618		0.0		96.0350
147	16,100		2.6052		0.0		96.0350
148	0		0.0		0.0		96.0350
149	3,000		0.4854		0.0		96.0350
150	9,800		1.5858		0.0		96.0350
151	7,300		1.1812		0.0		96.0350
152	13,800		2.2330		0.0		96.0350
153	22,600		3.6570		0.0		96.0350
154	0		0.0		0.0		96.0350
Grand Total	618,000		96.0359		96.0359		13089.9648

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 43: CALCULATION OF THE TRESS INDICES FOR THE EAST MIDLANDS FOR THE 152 MLH JUNE 1968

	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	33,200		2.3347		8.6428		8.6428
2	0		0.0		6.4205		15.0633
3	0		0.0		6.0197		21.0830
4	85,600		6.0197		5.4079		26.4908
5	2,600		0.1828		5.3586		31.8495
6	2,100		0.1477		3.2138		35.0633
7	2,500		0.1758		3.1294		38.1927
8	3,700	0.5937	0.2602	12.2272	2.9114	12.2272	41.1040
9	8,100	1.2997	0.5696	6.6431	2.3347	18.8703	43.4388
10	2,300	0.3691	0.1617	4.9101	2.1519	23.7805	45.5907
11	3,200	0.5135	0.2250	3.9153	2.0042	27.6958	47.5949
12	0	0.0	0.0	3.7227	1.7159	31.4185	49.3108
13	1,100	0.1765	0.0774	3.6746	1.6667	35.0930	50.9774
14	2,200	0.3530	0.1547	2.4711	1.6385	37.5642	52.6160
15	7,700	1.2356	0.5415	2.3909	1.6315	39.9550	54.2475
16	2,700	0.4332	0.1899	2.3267	1.6104	42.2817	55.8578
17	2,700	0.4332	0.1899	2.0700	1.5401	44.3517	57.3979
18	4,200	0.6739	0.2954	1.8935	1.4276	46.2451	58.8255
19	1,600	0.2567	0.1125	1.8614	1.2166	48.1065	60.0421
20	7,800	1.2516	0.5485	1.8132	1.1744	49.9197	61.2165
21	2,400	0.3851	0.1688	1.6046	1.1463	51.5243	62.3627
22	0	0.0	0.0	1.5565	1.1041	53.0808	63.4668
23	0	0.0	0.0	1.5405	1.0830	54.6212	64.5498
24	3,400	0.5456	0.2391	1.5244	1.0689	56.1456	65.6187
25	7,300	1.1714	0.5134	1.3479	1.0478	57.4935	66.6665
26							
27	0	0.0	0.0	1.3318	1.0197	58.8253	67.6862
28	1,400	0.2246	0.0985	1.2997	0.9775	60.1250	68.6637
29	0	0.0	0.0	1.2997	0.9072	61.4248	69.5708
30	1,700	0.2728	0.1195	1.2997	0.8298	62.7245	70.4006
31	9,700	1.5565	0.6821	1.2677	0.8158	63.9921	71.2164
32	9,500	1.5244	0.6681	1.2516	0.7947	65.2437	72.0110
33	23,200	3.7227	1.6315	1.2516	0.7032	66.4953	72.7143
34	1,500	0.2407	0.1055	1.2356	0.6821	67.7309	73.3964

TABLE B. 43: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	0	0.0	0.0	1.2195	0.6751	68.9504	74.0715
36	1,700	0.2728	0.1195	1.2195	0.6681	70.1699	74.7395
37	7,600	1.2195	0.5345	1.2035	0.6329	71.3734	75.3725
38	4,400	0.7060	0.3094	1.1714	0.5907	72.5447	75.9632
39	9,600	1.5404	0.6751	1.1553	0.5837	73.7000	76.5468
40	11,600	1.8614	0.8158	1.0751	0.5767	74.7751	77.1235
41	7,800	1.2516	0.5485	0.9788	0.5696	75.7539	77.6931
42	6,700	1.0751	0.4712	0.9628	0.5696	76.7167	78.2627
43	2,000	0.3209	0.1406	0.9467	0.5696	77.6634	78.8323
44	24,400	3.9153	1.7159	0.8825	0.5556	78.5460	79.3879
45	10,000	1.6046	0.7032	0.8504	0.5485	79.3964	79.9364
46	22,900	3.6746	1.6104	0.8344	0.5485	80.2308	80.4849
47							
48	2,400	0.3851	0.1688	0.8184	0.5485	81.0491	81.0334
49	0	0.0	0.0	0.8023	0.5415	81.8515	81.5749
50	7,900	1.2677	0.5556	0.7221	0.5345	82.5735	82.1094
51	1,200	0.1926	0.0844	0.7060	0.5345	83.2796	82.6438
52	8,300	1.3318	0.5837	0.7060	0.5274	83.9856	83.1712
53	11,300	1.8132	0.7947	0.6900	0.5274	84.6756	83.6987
54	1,000	0.1605	0.0703	0.6739	0.5134	85.3495	84.2120
55	6,000	0.9628	0.4219	0.6739	0.5063	86.0234	84.7183
56	1,300	0.2086	0.0914	0.6258	0.4712	86.6492	85.1895
57	0	0.0	0.0	0.6098	0.4712	87.2590	85.6607
58	8,400	1.3479	0.5907	0.5937	0.4360	87.8527	86.0967
59	8,100	1.2997	0.5696	0.5616	0.4290	88.4143	86.5256
60	30,600	4.9101	2.1519	0.5456	0.4219	88.9598	86.9476
61	3,800	0.6098	0.2672	0.5456	0.4149	89.5054	87.3625
62	5,000	0.8023	0.3516	0.5135	0.3868	90.0189	87.7492
63	0	0.0	0.0	0.4814	0.3727	90.5003	88.1219
64	0	0.0	0.0	0.4493	0.3657	90.9495	88.4876
65	0	0.0	0.0	0.4332	0.3586	91.3828	88.8463
66	0	0.0	0.0	0.4332	0.3516	91.8160	89.1979
67	1,800	0.2888	0.1266	0.4012	0.3305	92.2172	89.5284
68	4,200	0.6739	0.2954	0.3851	0.3165	92.6023	89.8448

TABLE B. 43: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.3851	0.3094	92.9874	90.1543
70	14,500	2.3267	1.0197	0.3691	0.3094	93.3564	90.4637
71	5,500	0.8825	0.3868	0.3530	0.3024	93.7094	90.7661
72	3,400	0.5456	0.2391	0.3530	0.2954	94.0625	91.0614
73	4,400	0.7060	0.3094	0.3209	0.2954	94.3834	91.3568
74	3,500	0.5616	0.2461	0.3209	0.2954	94.7043	91.6521
75	0	0.0	0.0	0.2888	0.2743	94.9931	91.9264
76	0	0.0	0.0	0.2888	0.2743	95.2819	92.2006
77	76,200	12.2272	5.3586	0.2728	0.2672	95.5547	92.4678
78	5,900	0.9467	0.4149	0.2728	0.2602	95.8275	92.7280
79	0	0.0	0.0	0.2567	0.2532	96.0842	92.9812
80	8,100	1.2997	0.5696	0.2407	0.2461	96.3249	93.2273
81	1,300	0.2086	0.0914	0.2246	0.2391	96.5496	93.4664
82	12,900	2.0700	0.9072	0.2086	0.2391	96.7581	93.7055
83	0	0.0	0.0	0.2086	0.2321	96.9667	93.9376
84	3,900	0.6258	0.2743	0.2086	0.2250	97.1753	94.1626
85	0	0.0	0.0	0.1926	0.2110	97.3679	94.3736
86	0	0.0	0.0	0.1926	0.1969	97.5604	94.5704
87	0	0.0	0.0	0.1926	0.1969	97.7530	94.7673
88	5,100	0.8184	0.3586	0.1765	0.1899	97.9295	94.9572
89	1,200	0.1926	0.0844	0.1605	0.1899	98.0899	95.1471
90	2,800	0.4493	0.1969	0.1605	0.1828	98.2504	95.3299
91	15,400	2.4711	1.0830	0.0	0.1758	98.2504	95.5057
92	0	0.0	0.0	0.0	0.1758	98.2504	95.6815
93	4,500	0.7221	0.3165	0.0	0.1758	98.2504	95.8573
94	41,400	6.6431	2.9114	0.0	0.1758	98.2504	96.0331
95	7,200	1.1553	0.5063	0.0	0.1688	98.2504	96.2019
96	2,200	0.3530	0.1547	0.0	0.1688	98.2504	96.3706
97	3,000	0.4814	0.2110	0.0	0.1617	98.2504	96.5324
98	0	0.0	0.0	0.0	0.1547	98.2504	96.6871
99	11,800	1.8935	0.8298	0.0	0.1547	98.2504	96.8418
100	7,500	1.2035	0.5274	0.0	0.1477	98.2504	96.9895
101	5,300	0.8504	0.3727	0.0	0.1406	98.2504	97.1301
102	1,000	0.1605	0.0703	0.0	0.1406	98.2504	97.2707

TABLE B. 43: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	2,000	0.3209	0.1406	0.0	0.1266	98.2504	97.3973
104	1,200	0.1926	0.0844	0.0	0.1266	98.2504	97.5239
105	1,800	0.2888	0.1266	0.0	0.1195	98.2504	97.6434
106	0	0.0	0.0	0.0	0.1195	98.2504	97.7630
107	5,200	0.8344	0.3657	0.0	0.1195	98.2504	97.8825
108	0	0.0	0.0	0.0	0.1125	98.2504	97.9950
109	4,300	0.6900	0.3024	0.0	0.1055	98.2504	98.1005
110	14,900	2.3909	1.0478	0.0	0.0985	98.2504	98.1989
111	7,600	1.2195	0.5345	0.0	0.0914	98.2504	98.2903
112	0	0.0	0.0	0.0	0.0914	98.2504	98.3818
113	0	0.0	0.0	0.0	0.0914	98.2504	98.4732
114	2,500	0.4012	0.1758	0.0	0.0914	98.2504	98.5646
115	0	0.0	0.0	0.0	0.0844	98.2504	98.6490
116	6,100	0.9788	0.4290	0.0	0.0844	98.2504	98.7334
117	1,300	0.2086	0.0914	0.0	0.0844	98.2504	98.8177
Total all manufacturing	623,200	98.2505		98.2505		8738.0508	
118	91,300		6.4205		0.0774		98.8951
119	7,800		0.5485		0.0703		98.9654
120	16,700		1.1744		0.0703		99.0357
121	2,500		0.1758		0.0		99.0357
122	17,300		1.2166		0.0		99.0357
123	13,900		0.9775		0.0		99.0357
124	15,200		1.0689		0.0		99.0357
125	0		0.0		0.0		99.0357
126	0		0.0		0.0		99.0357
127	0		0.0		0.0		99.0357
128	16,300		1.1463		0.0		99.0357
129	1,700		0.1195		0.0		99.0357
130	23,300		1.6385		0.0		99.0357
131	122,900		8.6428		0.0		99.0357
132	9,000		0.6329		0.0		99.0357
133	7,500		0.5274		0.0		99.0357

TABLE B. 43: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	20,300		1.4276		0.0		99.0357
135	4,200		0.2954		0.0		99.0357
136	76,900		5.4079		0.0		99.0357
137	4,700		0.3305		0.0		99.0357
138	45,700		3.2138		0.0		99.0357
139	0		0.0		0.0		99.0357
140	6,700		0.4712		0.0		99.0357
141	3,300		0.2321		0.0		99.0357
142	2,800		0.1969		0.0		99.0357
143	1,300		0.0914		0.0		99.0357
144	21,900		1.5401		0.0		99.0357
145	3,600		0.2532		0.0		99.0357
146	3,900		0.2743		0.0		99.0357
147	28,500		2.0042		0.0		99.0357
148	0		0.0		0.0		99.0357
149	6,200		0.4360		0.0		99.0357
150	8,200		0.5767		0.0		99.0357
151	15,700		1.1041		0.0		99.0357
152	23,700		1.6667		0.0		99.0357
153	44,500		3.1294		0.0		99.0357
154	2,500		0.1758		0.0		99.0357
Grand Total	1,422,000		99.0359		99.0359		12812.9648

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 44: CALCULATION OF THE TRESS INDICES FOR THE WEST MIDLANDS FOT THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	30,000		1.2959		6.9935		6.9935
2	0		0.0		6.8985		13.8920
3	0		0.0		6.4104		20.3024
4	33,600		1.4514		6.1253		26.4276
5	1,200		0.0518		5.5162		31.9438
6	2,200		0.0950		3.2657		35.2095
7	0		0.0		3.0756		38.2851
8	0	0.0	0.0	13.3010	2.0950	13.3010	40.3801
9	19,700	1.6185	0.8510	13.1203	1.8445	26.4213	42.2246
10	1,800	0.1479	0.0778	3.9846	1.8315	30.4058	44.0561
11	6,400	0.5258	0.2765	3.5081	1.7711	33.9139	45.8272
12	3,000	0.2465	0.1296	3.4834	1.7538	37.3973	47.5809
13	0	0.0	0.0	2.9823	1.7451	40.3795	49.3261
14	12,000	0.9859	0.5184	2.8344	1.6112	43.2139	50.9373
15	4,300	0.3533	0.1857	2.8097	1.6026	46.0236	52.5399
16	0	0.0	0.0	2.6454	1.5680	48.6690	54.1079
17	3,100	0.2547	0.1339	2.5715	1.4903	51.2405	55.5982
18	13,000	1.0680	0.5616	2.4318	1.4773	53.6723	57.0755
19	4,800	0.3943	0.2073	2.3497	1.4514	56.0219	58.5269
20	0	0.0	0.0	2.3414	1.4341	58.3634	59.9610
21	0	0.0	0.0	2.2921	1.3909	60.6555	61.3519
22	0	0.0	0.0	2.1771	1.3521	62.8326	62.7040
23	0	0.0	0.0	2.0128	1.2959	64.8454	63.9998
24	13,000	1.0680	0.5616	1.8403	1.2873	66.6857	65.2871
25	0	0.0	0.0	1.6185	1.2786	68.3042	66.5657
26							
27	4,400	0.3615	0.1901	1.3309	1.2354	69.6351	67.8011
28	0	0.0	0.0	1.3063	1.2311	70.9414	69.0322
29	4,400	0.3615	0.1901	1.2570	1.2052	72.1983	70.2374
30	0	0.0	0.0	1.2406	1.1447	73.4389	71.3821
31	27,900	2.2921	1.2052	1.1173	1.0583	74.5562	72.4404
32	24,500	2.0128	1.0583	1.0680	1.0022	75.6242	73.4425
33	34,500	2.8344	1.4903	1.0680	0.9676	76.6922	74.4101
34	22,400	1.8403	0.9676	1.0352	0.9460	77.7274	75.3561

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	36,300	2.9823	1.5680	0.9941	0.9330	78.7215	76.2892
36	4,500	0.3697	0.1944	0.9859	0.8510	79.7073	77.1401
37	31,300	2.5715	1.3521	0.8873	0.7559	80.5946	77.8961
38	15,300	1.2570	0.6609	0.8380	0.7127	81.4326	78.6088
39	10,800	0.8873	0.4665	0.8293	0.6998	82.2623	79.3086
40	1,800	0.1479	0.0778	0.7558	0.6868	83.0182	79.9954
41	3,500	0.2875	0.1512	0.7394	0.6609	83.7576	80.6563
42	6,600	0.5422	0.2851	0.6983	0.6523	84.4559	81.3086
43	2,400	0.1972	0.1037	0.6162	0.5875	85.0721	81.8960
44	28,600	2.3497	1.2354	0.5751	0.5616	85.6471	82.4576
45	28,500	2.3414	1.2311	0.5504	0.5616	86.1976	83.0191
46	42,400	3.4834	1.8315	0.5422	0.5443	86.7398	83.5634
47							
48	4,100	0.3368	0.1771	0.5258	0.5227	87.2656	84.0861
49	0	0.0	0.0	0.5258	0.5184	87.7914	84.6044
50	42,700	3.5081	1.8445	0.5094	0.5011	88.3007	85.1055
51	4,700	0.3861	0.2030	0.5012	0.4924	88.8019	85.5979
52	15,100	1.2406	0.6523	0.4190	0.4665	89.2209	86.0645
53	16,200	1.3309	0.6998	0.4190	0.4406	89.6398	86.5051
54	7,500	0.6162	0.3240	0.4108	0.4363	90.0506	86.9413
55	34,200	2.8097	1.4773	0.4026	0.4363	90.4532	87.3776
56	0	0.0	0.0	0.3943	0.3974	90.8475	87.7750
57	0	0.0	0.0	0.3943	0.3888	91.2418	88.1638
58	159,700	13.1203	6.8985	0.3861	0.3672	91.6280	88.5309
59	12,600	1.0352	0.5443	0.3697	0.3542	91.9977	88.8851
60	26,500	2.1771	1.1447	0.3615	0.3499	92.3591	89.2350
61	0	0.0	0.0	0.3615	0.3456	92.7206	89.5806
62	2,900	0.2383	0.1253	0.3533	0.3456	93.0739	89.9262
63	2,100	0.1725	0.0907	0.3368	0.3413	93.4107	90.2674
64	6,100	0.5012	0.2635	0.3204	0.3240	93.7311	90.5914
65	0	0.0	0.0	0.2958	0.3024	94.0269	90.8937
66	29,600	2.4318	1.2786	0.2958	0.2894	94.3226	91.1832
67	6,200	0.5094	0.2678	0.2875	0.2851	94.6101	91.4682
68	2,500	0.2054	0.1080	0.2875	0.2765	94.8977	91.7447

TABLE B. 44: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	9,200	0.7558	0.3974	0.2547	0.2765	95.1523	92.0211
70	161,900	13.3010	6.9935	0.2465	0.2678	95.3988	92.2889
71	4,800	0.3943	0.2073	0.2465	0.2635	95.6453	92.5524
72	2,500	0.2054	0.1080	0.2465	0.2462	95.8917	92.7986
73	2,500	0.2054	0.1080	0.2383	0.2203	96.1300	93.0189
74	1,300	0.1068	0.0562	0.2218	0.2203	96.3518	93.2392
75	0	0.0	0.0	0.2218	0.2160	96.5736	93.4552
76	0	0.0	0.0	0.2054	0.2160	96.7790	93.6712
77	3,600	0.2958	0.1555	0.2054	0.2117	96.9844	93.8828
78	0	0.0	0.0	0.2054	0.2073	97.1898	94.0902
79	12,100	0.9941	0.5227	0.1972	0.2073	97.3869	94.2975
80	3,600	0.2958	0.1555	0.1725	0.2030	97.5594	94.5005
81	1,800	0.1479	0.0778	0.1725	0.1944	97.7319	94.6949
82	1,600	0.1314	0.0691	0.1561	0.1901	97.8880	94.8850
83	0	0.0	0.0	0.1479	0.1901	98.0359	95.0750
84	0	0.0	0.0	0.1479	0.1857	98.1838	95.2608
85	5,100	0.4190	0.2203	0.1479	0.1771	98.3316	95.4379
86	0	0.0	0.0	0.1314	0.1771	98.4631	95.6149
87	0	0.0	0.0	0.1232	0.1685	98.5863	95.7834
88	6,700	0.5504	0.2894	0.1150	0.1685	98.7013	95.9519
89	0	0.0	0.0	0.1150	0.1598	98.8163	96.1117
90	1,400	0.1150	0.0605	0.1068	0.1555	98.9231	96.2672
91	5,100	0.4190	0.2203	0.0904	0.1555	99.0135	96.4227
92	0	0.0	0.0	0.0	0.1512	99.0135	96.5739
93	3,000	0.2465	0.1296	0.0	0.1512	99.0135	96.7251
94	5,000	0.4108	0.2160	0.0	0.1512	99.0135	96.8762
95	10,200	0.8380	0.4406	0.0	0.1339	99.0135	97.0101
96	48,500	3.9846	2.0950	0.0	0.1296	99.0135	97.1397
97	8,500	0.6983	0.3672	0.0	0.1296	99.0135	97.2693
98	1,900	0.1561	0.0821	0.0	0.1296	99.0135	97.3989
99	13,600	1.1173	0.5875	0.0	0.1253	99.0135	97.5241
100	9,000	0.7394	0.3888	0.0	0.1166	99.0135	97.6407
101	7,000	0.5751	0.3024	0.0	0.1166	99.0135	97.7574
102	1,100	0.0904	0.0475	0.0	0.1123	99.0135	97.8697

TABLE B. 44: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	3,900	0.3204	0.1685	0.0	0.1080	99.0135	97.9777
104	2,700	0.2218	0.1166	0.0	0.1080	99.0135	98.0856
105	1,400	0.1150	0.0605	0.0	0.1080	99.0135	98.1936
106	2,700	0.2218	0.1166	0.0	0.1037	99.0135	98.2973
107	4,900	0.4026	0.2117	0.0	0.0950	99.0135	98.3923
108	3,500	0.2875	0.1512	0.0	0.0907	99.0135	98.4830
109	6,400	0.5258	0.2765	0.0	0.0907	99.0135	98.5737
110	15,900	1.3063	0.6868	0.0	0.0821	99.0135	98.6558
111	32,200	2.6454	1.3909	0.0	0.0778	99.0135	98.7335
112	0	0.0	0.0	0.0	0.0778	99.0135	98.8113
113	1,500	0.1232	0.0648	0.0	0.0778	99.0135	98.8890
114	3,000	0.2465	0.1296	0.0	0.0691	99.0135	98.9581
115	0	0.0	0.0	0.0	0.0648	99.0135	99.0229
116	10,100	0.8298	0.4363	0.0	0.0605	99.0135	99.0834
117	2,100	0.1725	0.0907	0.0	0.0605	99.0135	99.1439
Total all manufacturing	1,217,200	99.0136		99.0136		9185.1406	
118	141,800		6.1253		0.0605		99.2043
119	11,600		0.5011		0.0562		99.2605
120	21,900		0.9460		0.0518		99.3123
121	4,100		0.1771		0.0475		99.3598
122	17,500		0.7559		0.0		99.3598
123	21,600		0.9330		0.0		99.3598
124	23,200		1.0022		0.0		99.3598
125	0		0.0		0.0		99.3598
126	0		0.0		0.0		99.3598
127	0		0.0		0.0		99.3598
128	37,100		1.6026		0.0		99.3598
129	3,700		0.1598		0.0		99.3598
130	40,400		1.7451		0.0		99.3598
131	148,400		6.4104		0.0		99.3598
132	10,100		0.4363		0.0		99.3598
133	16,500		0.7127		0.0		99.3598

TABLE B. 44: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	37,300		1.6112		0.0		99.3598
135	7,900		0.3413		0.0		99.3598
136	127,700		5.5162		0.0		99.3598
137	8,000		0.3456		0.0		99.3598
138	75,600		3.2657		0.0		99.3598
139	0		0.0		0.0		99.3598
140	11,400		0.4924		0.0		99.3598
141	5,700		0.2462		0.0		99.3598
142	5,000		0.2160		0.0		99.3598
143	2,600		0.1123		0.0		99.3598
144	41,000		1.7711		0.0		99.3598
145	8,000		0.3456		0.0		99.3598
146	3,500		0.1512		0.0		99.3598
147	40,600		1.7538		0.0		99.3598
148	1,400		0.0605		0.0		99.3598
149	8,100		0.3499		0.0		99.3598
150	8,200		0.3542		0.0		99.3598
151	29,800		1.2873		0.0		99.3598
152	33,200		1.4341		0.0		99.3598
153	71,200		3.0756		0.0		99.3598
154	3,900		0.1685		0.0		99.3598
Grand Total	2,315,000		99.3600		99.3600		12938.1484

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 45: CALCULATION OF THE TRESS INDICES FOR YORKSHIRE AND HUMBERSIDE FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	25,700		1.2537		8.1902		8.1902
2	0		0.0		6.7561		14.9463
3	6,500		0.3171		5.7366		20.6829
4	100,800		4.9171		5.3610		26.0439
5	0		0.0		4.9171		30.9610
6	2,400		0.1171		4.2390		35.2000
7	0		0.0		3.9756		39.1756
7	3,100	0.3565	0.1512	12.6394	3.1951	12.6394	42.3707
9	11,800	1.3571	0.5756	9.9942	2.1512	22.6337	44.5219
10	3,600	0.4140	0.1756	4.2668	1.9756	26.9005	46.4975
11	12,500	1.4376	0.6098	4.1863	1.8976	31.0868	48.3951
12	1,300	0.1495	0.0634	3.6228	1.8098	34.7096	50.2048
13	0	0.0	0.0	3.0592	1.7902	37.7688	51.9950
14	22,000	2.5302	1.0732	2.8292	1.7756	40.5980	53.7706
15	7,900	0.9086	0.3854	2.6222	1.5366	43.2202	55.3072
16	2,100	0.2415	0.1024	2.5302	1.4439	45.7504	56.7511
17	4,900	0.5635	0.2390	2.3347	1.3073	48.0850	58.0584
18	8,600	0.9891	0.4195	1.8401	1.2976	49.9252	59.3560
19	3,500	0.4025	0.1707	1.8286	1.2537	51.7538	60.6096
20	0	0.0	0.0	1.7251	1.2439	53.4789	61.8535
21	5,100	0.5865	0.2488	1.7136	1.2049	55.1926	63.0584
22	0	0.0	0.0	1.4376	1.2000	56.6302	64.2584
23	0	0.0	0.0	1.4261	1.1854	58.0563	65.4437
24	24,600	2.8292	1.2000	1.4146	1.1512	59.4709	66.5950
25	5,400	0.6210	0.2634	1.4031	1.1220	60.8739	67.7169
26							
27	3,400	0.3910	0.1659	1.3801	1.1122	62.2540	68.8291
28	4,100	0.4715	0.2000	1.3571	1.0732	63.6111	69.9023
29	0	0.0	0.0	1.3571	0.9902	64.9682	70.8925
30	0	0.0	0.0	1.2881	0.7805	66.2563	71.6730
31	86,900	9.9942	4.2390	1.1846	0.7756	67.4409	72.4486
32	0	0.0	0.0	1.1846	0.7317	68.6255	73.1803
33	12,200	1.4031	0.5951	1.1501	0.7268	69.7756	73.9071
34	0	0.0	0.0	1.1041	0.6585	70.8797	74.5656

TABLE B. 45: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	9,600	1.1041	0.4683	1.0811	0.6293	71.9607	75.1949
36	1,500	0.1725	0.0732	1.0351	0.6098	72.9958	75.8046
37	11,200	1.2881	0.5463	0.9891	0.6049	73.9849	76.4095
38	15,900	1.8286	0.7756	0.9661	0.6000	74.9509	77.0095
39	0	0.0	0.0	0.9086	0.5951	75.8595	77.6046
40	9,000	1.0351	0.4390	0.8051	0.5902	76.6645	78.1948
41	4,500	0.5175	0.2195	0.8051	0.5854	77.4696	78.7802
42	3,800	0.4370	0.1854	0.7821	0.5756	78.2516	79.3558
43	2,100	0.2415	0.1024	0.7706	0.5756	79.0222	79.9314
44	37,100	4.2668	1.8098	0.7361	0.5463	79.7582	80.4778
45	15,000	1.7251	0.7317	0.7246	0.5171	80.4828	80.9948
46	26,600	3.0592	1.2976	0.7246	0.5024	81.2073	81.4972
47							
48	4,700	0.5405	0.2293	0.6440	0.5024	81.8514	81.9997
49	0	0.0	0.0	0.6325	0.4878	82.4839	82.4875
50	16,000	1.8401	0.7805	0.6210	0.4829	83.1049	82.9704
51	0	0.0	0.0	0.5865	0.4683	83.6915	83.4387
52	0	0.0	0.0	0.5635	0.4585	84.2550	83.8972
53	6,800	0.7821	0.3317	0.5520	0.4537	84.8071	84.3508
54	3,600	0.4140	0.1756	0.5405	0.4390	85.3476	84.7899
55	3,300	0.3795	0.1610	0.5175	0.4195	85.8651	85.2094
56	7,000	0.8051	0.3415	0.5175	0.4098	86.3826	85.6191
57	0	0.0	0.0	0.5060	0.3854	86.8887	86.0045
58	22,800	2.6222	1.1122	0.5060	0.3756	87.3947	86.3801
59	0	0.0	0.0	0.4830	0.3415	87.8777	86.7215
60	11,800	1.3571	0.5756	0.4715	0.3415	88.3493	87.0630
61	3,300	0.3795	0.1610	0.4715	0.3415	88.8208	87.4044
62	5,500	0.6325	0.2683	0.4715	0.3366	89.2923	87.7410
63	0	0.0	0.0	0.4600	0.3317	89.7523	88.0727
64	10,300	1.1846	0.5024	0.4485	0.3268	90.2009	88.3996
65	6,400	0.7361	0.3122	0.4370	0.3171	90.6379	88.7166
66	2,000	0.2300	0.0976	0.4370	0.3171	91.0749	89.0337
67	10,300	1.1846	0.5024	0.4140	0.3122	91.4889	89.3459
68	3,200	0.3680	0.1561	0.4140	0.3073	91.9030	89.6532

TABLE B. 45: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	4,800	0.5520	0.2341	0.4025	0.3073	92.3055	89.9605
70	31,500	3.6228	1.5366	0.4025	0.3024	92.7080	90.2629
71	6,700	0.7706	0.3268	0.4025	0.2976	93.1105	90.5605
72	4,200	0.4830	0.2049	0.3910	0.2732	93.5016	90.8336
73	8,400	0.9661	0.4098	0.3795	0.2683	93.8811	91.1019
74	109,900	12.6394	5.3610	0.3795	0.2634	94.2606	91.3653
75	0	0.0	0.0	0.3680	0.2488	94.6286	91.6141
76	1,300	0.1495	0.0634	0.3565	0.2488	94.9851	91.8629
77	3,500	0.4025	0.1707	0.3450	0.2390	95.3302	92.1019
78	0	0.0	0.0	0.2645	0.2341	95.5947	92.3360
79	12,300	1.4146	0.6000	0.2645	0.2293	95.8592	92.5653
80	2,300	0.2645	0.1122	0.2645	0.2195	96.1237	92.7848
81	1,600	0.1840	0.0780	0.2415	0.2195	96.3652	93.0043
82	12,000	1.3801	0.5854	0.2415	0.2146	96.6067	93.2189
83	4,000	0.4600	0.1951	0.2415	0.2146	96.8482	93.4336
84	4,100	0.4715	0.2000	0.2300	0.2098	97.0782	93.6433
85	1,400	0.1610	0.0683	0.2300	0.2049	97.3083	93.8482
86	0	0.0	0.0	0.1955	0.2000	97.5038	94.0482
87	1,400	0.1610	0.0683	0.1840	0.2000	97.6878	94.2482
88	36,400	4.1863	1.7756	0.1725	0.2000	97.8603	94.4482
89	3,500	0.4025	0.1707	0.1610	0.2000	98.0213	94.6482
90	4,400	0.5060	0.2146	0.1610	0.1951	98.1823	94.8433
91	6,300	0.7246	0.3073	0.1495	0.1902	98.3318	95.0335
92	0	0.0	0.0	0.1495	0.1854	98.4813	95.2189
93	0	0.0	0.0	0.1265	0.1854	98.6078	95.4042
94	2,000	0.2300	0.0976	0.0	0.1805	98.6078	95.5847
95	9,400	1.0811	0.4585	0.0	0.1805	98.6078	95.7652
96	0	0.0	0.0	0.0	0.1756	98.6078	95.9408
97	14,900	1.7136	0.7268	0.0	0.1756	98.6078	96.1164
98	2,300	0.2645	0.1122	0.0	0.1707	98.6078	96.2871
99	10,000	1.1501	0.4878	0.0	0.1707	98.6078	96.4579
100	12,400	1.4261	0.6049	0.0	0.1707	98.6078	96.6286
101	7,000	0.8051	0.3415	0.0	0.1659	98.6078	96.7944
102	3,000	0.3450	0.1463	0.0	0.1610	98.6078	96.9554

TABLE B. 45: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	3,900	0.4485	0.1902	0.0	0.1610	98.6078	97.1164
104	2,300	0.2645	0.1122	0.0	0.1561	98.6078	97.2725
105	1,700	0.1955	0.0829	0.0	0.1512	98.6078	97.4237
106	4,500	0.5175	0.2195	0.0	0.1463	98.6078	97.5700
107	3,800	0.4370	0.1854	0.0	0.1171	98.6078	97.6871
108	4,100	0.4715	0.2000	0.0	0.1122	98.6078	97.7993
109	6,300	0.7246	0.3073	0.0	0.1122	98.6078	97.9114
110	20,300	2.3347	0.9902	0.0	0.1122	98.6078	98.0236
111	4,400	0.5060	0.2146	0.0	0.1024	98.6078	98.1261
112	0	0.0	0.0	0.0	0.1024	98.6078	98.2285
113	1,100	0.1265	0.0537	0.0	0.1024	98.6078	98.3309
114	2,100	0.2415	0.1024	0.0	0.0976	98.6078	98.4285
115	0	0.0	0.0	0.0	0.0976	98.6078	98.5260
116	5,600	0.6440	0.2732	0.0	0.0829	98.6078	98.6089
117	0	0.0	0.0	0.0	0.0829	98.6078	98.6918
Total all manufacturing	869,500	98.6079		98.6079		8844.3125	
118	138,500		6.7561		0.0780		98.7699
119	10,600		0.5171		0.0732		98.8431
120	23,600		1.1512		0.0683		98.9113
121	4,300		0.2098		0.0683		98.9796
122	29,600		1.4439		0.0683		99.0479
123	24,300		1.1854		0.0634		99.1113
124	23,000		1.1220		0.0634		99.1747
125	1,700		0.0829		0.0537		99.2284
126	13,500		0.6585		0.0488		99.2771
127	0		0.0		0.0		99.2771
128	26,800		1.3073		0.0		99.2771
129	5,100		0.2488		0.0		99.2771
130	40,500		1.9756		0.0		99.2771
131	167,900		8.1902		0.0		99.2771
132	9,900		0.4829		0.0		99.2771
133	12,900		0.6293		0.0		99.2771

TABLE B. 45: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	38,900		1.8976		0.0		99.2771
135	7,000		0.3415		0.0		99.2771
136	117,600		5.7366		0.0		99.2771
137	6,900		0.3366		0.0		99.2771
138	81,500		3.9756		0.0		99.2771
139	1,000		0.0488		0.0		99.2771
140	6,500		0.3171		0.0		99.2771
141	6,100		0.2976		0.0		99.2771
142	6,200		0.3024		0.0		99.2771
143	3,700		0.1805		0.0		99.2771
144	44,100		2.1512		0.0		99.2771
145	9,300		0.4537		0.0		99.2771
146	3,700		0.1805		0.0		99.2771
147	36,700		1.7902		0.0		99.2771
148	1,400		0.0683		0.0		99.2771
149	7,700		0.3756		0.0		99.2771
150	12,100		0.5902		0.0		99.2771
151	24,700		1.2049		0.0		99.2771
152	25,500		1.2439		0.0		99.2771
153	65,500		3.1951		0.0		99.2771
154	4,100		0.2000		0.0		99.2771
Grand Total	2,050,000		99.2772		99.2772		12847.4414

Source of Data: Employment and productivity Gazette, March 1969

TABLE B. 46: CALCULATION OF THE TRESS INDICES FOR THE NORTH FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	19,100		1.4569		9.4127		9.4127
2	1,600		0.1220		8.8863		18.2990
3	1,300		0.0992		6.4989		24.7979
4	85,200		6.4989		5.8047		30.6026
5	1,700		0.1297		4.1419		34.7444
6	0		0.0		3.4172		38.1617
7	1,100		0.0839		3.1808		41.3425
8	1,900	0.4079	0.1449	8.9523	3.0740	8.9523	44.4164
9	11,400	2.4474	0.8696	7.6428	2.8299	16.5951	47.2463
10	2,500	0.5367	0.1907	7.3207	2.7155	23.9158	49.9618
11	4,000	0.8587	0.3051	4.3366	2.6011	28.2524	52.5629
12	2,000	0.4294	0.1526	4.3366	1.7239	32.5891	54.2867
13	0	0.0	0.0	3.6067	1.5942	36.1958	55.8809
14	3,000	0.6441	0.2288	3.3705	1.5408	39.5663	57.4217
15	2,400	0.5152	0.1831	3.3061	1.5408	42.8724	58.9625
16	0	0.0	0.0	3.1344	1.4645	46.0068	60.4270
17	2,000	0.4294	0.1526	2.4474	1.4569	48.4542	61.8839
18	5,800	1.2452	0.4424	2.1039	1.3959	50.5581	63.2798
19	2,500	0.5367	0.1907	2.0824	1.2815	52.6405	64.5613
20	1,800	0.3864	0.1373	1.9966	1.2662	54.6371	65.8275
21	2,200	0.4723	0.1678	1.8033	1.2052	56.4404	67.0327
22	0	0.0	0,0	1.6531	1.1976	58.0935	68.2302
23	0	0.0	0.0	1.5243	1.1747	59.6177	69.4049
24	34,100	7.3207	2.6011	1.4599	1.1594	61.0776	70.5643
25	2,000	0.4294	0.1526	1.3954	1.1594	62.4730	71.7237
26							
27	3,000	0.6441	0.2288	1.3525	1.1137	63.8255	72.8373
28	2,400	0.5152	0.1831	1.3310	0.9687	65.1566	73.8061
29	6,200	1.3310	0.4729	1.2666	0.8696	66.4232	74.6756
30	0	0.0	0.0	1.2452	0.7475	67.6684	75.4231
31	41,700	8.9523	3.1808	1.2452	0.7399	68.9135	76.1630
32	3,300	0.7085	0.2517	1.2237	0.7094	70.1372	76.8724
33	5,800	1.2452	0.4424	1.2022	0.6407	71.3394	77.5131
34	1,600	0.3435	0.1220	1.1387	0.5873	72.4773	78.1004

TABLE B. 46: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	2,900	0.6226	0.2212	0.9231	0.5645	73.4004	78.6649
36	0	0.0	0.0	0.8802	0.5416	74.2806	79.2065
37	3,500	0.7514	0.2670	0.8587	0.5339	75.1393	79.7404
38	0	0.0	0.0	0.8587	0.5187	75.9981	80.2591
39	0	0.0	0.0	0.8373	0.4958	76.8353	80.7549
40	0	0.0	0.0	0.8373	0.4958	77.6726	81.2507
41	3,200	0.6870	0.2441	0.8158	0.4805	78.4884	81.7312
42	6,500	1.3954	0.4958	0.8158	0.4805	79.3042	82.2118
43	0	0.0	0.0	0.7943	0.4729	80.0985	82.6847
44	15,700	3.3705	1.1976	0.7943	0.4500	80.8929	83.1347
45	20,200	4.3366	1.5408	0.7514	0.4424	81.6442	83.5771
46	16,800	3.6067	1.2815	0.7085	0.4424	82.3527	84.0195
47							
48	2,000	0.4294	0.1526	0.6870	0.4348	83.0397	84.4543
49	0	0.0	0.0	0.6441	0.4272	83.6837	84.8814
50	20,200	4.3366	1.5408	0.6441	0.4119	84.3278	85.2933
51	2,500	0.5367	0.1907	0.6226	0.4043	84.9503	85.6976
52	14,600	3.1344	1.1137	0.6226	0.4043	85.5729	86.1019
53	9,300	1.9966	0.7094	0.5582	0.3966	86.1311	86.4985
54	4,100	0.8802	0.3127	0.5367	0.3738	86.6678	86.8723
55	5,300	1.1378	0.4043	0.5367	0.3738	87.2045	87.2460
56	35,600	7.6428	2.7155	0.5367	0.3509	87.7412	87.5969
57	5,600	1.2022	0.4272	0.5152	0.3356	88.2564	87.9325
58	5,700	1.2237	0.4348	0.5152	0.3280	88.7716	88.2605
59	0	0.0	0.0	0.5152	0.3280	89.2868	88.5885
60	1,900	0.4079	0.1449	0.4938	0.3204	89.7806	88.9088
61	0	0.0	0.0	0.4723	0.3127	90.2529	89.2216
62	3,900	0.8373	0.2975	0.4723	0.3051	90.7252	89.5267
63	0	0.0	0.0	0.4508	0.3051	91.1761	89.8318
64	0	0.0	0.0	0.4294	0.2975	91.6054	90.1292
65	0	0.0	0.0	0.4294	0.2975	92.0348	90.4267
66	0	0.0	0.0	0.4294	0.2899	92.4642	90.7165
67	1,700	0.3650	0.1297	0.4294	0.2899	92.8935	91.0064
68	2,100	0.4508	0.1602	0.4079	0.2822	93.3014	91.2886

TABLE B. 46: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.4079	0.2822	93.7093	91.5708
70	9,700	2.0824	0.7399	0.3864	0.2670	94.0957	91.8378
71	3,700	0.7943	0.2822	0.3864	0.2593	94.4822	92.0971
72	1,200	0.2576	0.0915	0.3650	0.2517	94.8471	92.3488
73	1,200	0.2576	0.0915	0.3435	0.2441	95.1906	92.5959
74	5,900	1.2666	0.4500	0.3435	0.2441	95.5341	92.8370
75	0	0.0	0.0	0.3006	0.2365	95.8347	93.0735
76	1,800	0.3864	0.1373	0.2791	0.2288	96.1138	93.3023
77	2,200	0.4723	0.1678	0.2576	0.2288	96.3714	93.5311
78	0	0.0	0.0	0.2576	0.2212	96.6290	93.7523
79	1,400	0.3006	0.1068	0.2576	0.2212	96.8866	93.9735
80	0	0.0	0.0	0.2147	0.1983	97.1013	94.1718
81	1,300	0.2791	0.0992	0.2147	0.1907	97.3159	94.3625
82	1,000	0.2147	0.0763	0.0	0.1907	97.3159	94.5532
83	0	0.0	0.0	0.0	0.1907	97.3159	94.7439
84	0	0.0	0.0	0.0	0.1831	97.3159	94.9269
85	0	0.0	0.0	0.0	0.1831	97.3159	95.1100
86	0	0.0	0.0	0.0	0.1831	97.3159	95.2930
87	1,200	0.2576	0.0915	0.0	0.1754	97.3159	95.4685
88	15,400	3.3061	1.1747	0.0	0.1678	97.3159	95.6363
89	2,600	0.5582	0.1983	0.0	0.1678	97.3159	95.8041
90	2,300	0.4938	0.1754	0.0	0.1602	97.3159	95.9642
91	8,400	1.8033	0.6407	0.0	0.1526	97.3159	96.1168
92	0	0.0	0.0	0.0	0.1526	97.3159	96.2693
93	0	0.0	0.0	0.0	0.1526	97.3159	96.4219
94	4,300	0.9231	0.3280	0.0	0.1526	97.3159	96.5744
95	3,800	0.8158	0.2899	0.0	0.1449	97.3159	96.7193
96	0	0.0	0.0	0.0	0.1449	97.3159	96.8642
97	6,300	1.3525	0.4805	0.0	0.1373	97.3159	97.0015
98	0	0.0	0.0	0.0	0.1373	97.3159	97.1388
99	9,800	2.1039	0.7475	0.0	0.1297	97.3159	97.2685
100	7,700	1.6531	0.5873	0.0	0.1297	97.3159	97.3982
101	4,000	0.8587	0.3051	0.0	0.1297	97.3159	97.5278
102	1,000	0.2147	0.0763	0.0	0.1220	97.3159	97.6499

TABLE B. 46: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	0	0.0	0.0	0.0	0.1220	97.3159	97.7719
104	0	0.0	0.0	0.0	0.1220	97.3159	97.8940
105	0	0.0	0.0	0.0	0.1220	97.3159	98.0160
106	2,400	0.5152	0.1831	0.0	0.1068	97.3159	98.1228
107	2,900	0.6226	0.2212	0.0	0.0992	97.3159	98.2219
108	1,600	0.3435	0.1220	0.0	0.0992	97.3159	98.3211
109	3,900	0.8373	0.2975	0.0	0.0915	97.3159	98.4126
110	7,100	1.5243	0.5416	0.0	0.0915	97.3159	98.5041
111	3,700	0.7943	0.2822	0.0	0.0915	97.3159	98.5957
112	0	0.0	0.0	0.0	0.0839	97.3159	98.6796
113	0	0.0	0.0	0.0	0.0763	97.3159	98.7558
114	0	0.0	0.0	0.0	0.0763	97.3159	98.8321
115	0	0.0	0.0	0.0	0.0	97.3159	98.8321
116	6,800	1.4599	0.5187	0.0	0.0	97.3159	98.8321
117	3,800	0.8158	0.2899	0.0	0.0	97.3159	98.8321
Total all manufacturing	465,800	97.3160		97.3160		8868.1797	
118	116,500		8.8863		0.0		98.8321
119	7,000		0.5339		0.0		98.8321
120	12,700		0.9687		0.0		98.8321
121	3,100		0.2365		0.0		98.8321
122	15,200		1.1594		0.0		98.8321
123	19,200		1.4645		0.0		98.8321
124	15,200		1.1594		0.0		98.8321
125	5,300		0.4043		0.0		98.8321
126	6,300		0.4805		0.0		98.8321
127	0		0.0		0.0		98.8321
128	15,800		1.2052		0.0		98.8321
129	1,600		0.1220		0.0		98.8321
130	18,300		1.3959		0.0		98.8321
131	123,400		9.4127		0.0		98.8321
132	7,400		0.5645		0.0		98.8321
133	4,900		0.3738		0.0		98.8321

TABLE B. 46: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	20,900		1.5942		0.0		98.8321
135	3,400		0.2593		0.0		98.8321
136	76,100		5.8047		0.0		98.8321
137	4,200		0.3204		0.0		98.8321
138	54,300		4.1419		0.0		98.8321
139	0		0.0		0.0		98.8321
140	4,600		0.3509		0.0		98.8321
141	5,200		0.3966		0.0		98.8321
142	5,400		0.4119		0.0		98.8321
143	3,200		0.2441		0.0		98.8321
144	40,300		3.0740		0.0		98.8321
145	4,400		0.3356		0.0		98.8321
146	1,700		0.1297		0.0		98.8321
147	22,600		1.7239		0.0		98.8321
148	0		0.0		0.0		98.8321
149	4,900		0.3738		0.0		98.8321
150	6,500		0.4958		0.0		98.8321
151	16,600		1.2662		0.0		98.8321
152	37,100		2.8299		0.0		98.8321
153	44,800		3.4172		0.0		98.8321
154	4,300		0.3280		0.0		98.8321
Grand total	1,311,000		98.8323		98.8323		13077.3398

Source of Data: Employment and Productivity Gazett, March 1969

TABLE B. 47: CALCULATION OF THE TRESS INDICES FOR THE NORTHWEST FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	15,600		0.5260		8.3378		8.3378
2	0		0.0		6.0384		14.3768
3	1,300		0.0438		5.5833		19.9595
4	23,700		0.7991		4.1976		24.1571
5	3,100		0.1045		3.3918		27.5489
6	0		0.0		2.6433		30.1922
7	1,700		0.0573		2.3297		32.5219
8	7,200	0.5362	0.2428	5.1460	2.2960	5.1460	34.8179
9	25,700	1.9139	0.8665	4.6321	2.0971	9.7781	36.9150
10	16,700	1.2437	0.5630	4.3789	2.0937	14.1570	39.0087
11	12,100	0.9011	0.4080	3.8874	1.9825	18.0444	40.9912
12	4,600	0.3426	0.1551	3.7831	1.7599	21.8275	42.7511
13	3,000	0.2234	0.1011	3.7459	1.7127	25.5734	44.4639
14	12,300	0.9160	0.4147	3.0831	1.6959	28.6565	46.1597
15	11,100	0.8266	0.3742	3.0384	1.5105	31.6949	47.6702
16	6,900	0.5139	0.2326	2.2341	1.5105	33.9290	49.1806
17	9,400	0.7000	0.3169	2.2192	1.5037	36.1483	50.6843
18	10,800	0.8043	0.3641	2.0703	1.4127	38.2186	52.0970
19	5,700	0.4245	0.1922	2.0480	1.3958	40.2665	53.4928
20	6,000	0.4468	0.2023	2.0033	1.3756	42.2698	54.8684
21	0	0.0	0.0	1.9139	1.3351	44.1837	56.2035
22	7,300	0.5436	0.2461	1.8245	1.1767	46.0083	57.3802
23	2,900	0.2160	0.0978	1.7948	1.1733	47.8030	58.5535
24	62,200	4.6321	2.0971	1.7724	1.0553	49.5754	59.6087
25	11,200	0.8341	0.3776	1.6831	1.0115	51.2585	60.6202
26							
27	7,500	0.5585	0.2529	1.4969	1.0047	52.7553	61.6249
28	17,600	1.3107	0.5934	1.4373	0.9373	54.1926	62.5622
29	6,000	0.4468	0.2023	1.4298	0.9272	55.6225	63.4894
30	1,500	0.1117	0.0506	1.3926	0.9069	57.0151	64.3963
31	15,200	1.1320	0.5125	1.3405	0.9036	58.3555	65.2999
32	1,100	0.0819	0.0371	1.3107	0.8665	59.6662	66.1664
33	7,800	0.5809	0.2630	1.2586	0.8260	60.9248	66.9924
34	5,400	0.4021	0.1821	1.2586	0.8125	62.1833	67.8049

TABLE B. 47: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	9,300	0.6926	0.3136	1.2437	0.8024	63.4270	68.6073
36	3,500	0.2606	0.1180	1.2288	0.7991	64.6558	69.4064
37	6,800	0.5064	0.2293	1.1320	0.7620	65.7878	70.1683
38	4,900	0.3649	0.1652	1.0873	0.6777	66.8750	70.8460
39	3,200	0.2383	0.1079	1.0426	0.6507	67.9176	71.4967
40	19,200	1.4298	0.6473	1.0426	0.6473	68.9602	72.1440
41	1,900	0.1415	0.0641	0.9979	0.6305	69.9581	72.7745
42	8,400	0.6256	0.2832	0.9458	0.6170	70.9039	73.3915
43	1,900	0.1415	0.0641	0.9160	0.6102	71.8199	74.0017
44	50,300	3.7459	1.6959	0.9011	0.6069	72.7210	74.6086
45	27,500	2.0480	0.9272	0.8564	0.5934	73.5774	75.2020
46	30,000	2.2341	1.0115	0.8490	0.5833	74.4263	75.7853
47							
48	6,200	0.4617	0.2090	0.8341	0.5698	75.2604	76.3550
49	0	0.0	0.0	0.8266	0.5698	76.0871	76.9248
50	52,200	3.8874	1.7599	0.8266	0.5630	76.9137	77.4879
51	18,700	1.3926	0.6305	0.8266	0.5563	77.7403	78.0441
52	16,900	1.2586	0.5698	0.8266	0.5529	78.5669	78.5971
53	27,800	2.0703	0.9373	0.8043	0.5260	79.3712	79.1230
54	6,000	0.4468	0.2023	0.7596	0.5125	80.1308	79.6355
55	22,600	1.6831	0.7620	0.7447	0.4922	80.8755	80.1277
56	26,900	2.0033	0.9069	0.7447	0.4922	81.6202	80.6200
57	6,200	0.4617	0.2090	0.7000	0.4788	82.3203	81.0987
58	69,100	5.1460	2.3297	0.6926	0.4720	83.0128	81.5707
59	0	0.0	0.0	0.6777	0.4720	83.6905	82.0427
60	40,800	3.0384	1.3756	0.6256	0.4653	84.3161	82.5080
61	9,100	0.6777	0.3068	0.5958	0.4518	84.9118	82.9598
62	3,400	0.2532	0.1146	0.5809	0.4282	85.4927	83.3880
63	0	0.0	0.0	0.5809	0.4147	86.0736	83.8027
64	1,500	0.1117	0.0506	0.5660	0.4080	86.6395	84.2106
65	0	0.0	0.0	0.5585	0.4080	87.1981	84.6185
66	2,500	0.1862	0.0843	0.5436	0.3877	87.7412	85.0063
67	10,000	0.7447	0.3372	0.5362	0.3844	88.2779	85.3906
68	4.700	0.3500	0.1585	0.5139	0.3776	88.7912	85.7682

TABLE B. 47: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.5064	0.3776	89.2981	86.1458
70	41,400	3.0831	1.3958	0.4915	0.3742	89.7896	86.5201
71	6,600	0.4915	0.2225	0.4617	0.3742	90.2513	86.8943
72	58,800	4.3789	1.9825	0.4617	0.3742	90.7131	87.2686
73	50,800	3.7831	1.7127	0.4617	0.3742	91.1748	87.6428
74	10,000	0.7447	0.3372	0.4468	0.3641	91.6216	88.0069
75	0	0.0	0.0	0.4468	0.3540	92.0684	88.3609
76	1,700	0.1266	0.0573	0.4468	0.3439	92.5152	88.7048
77	10,200	0.7596	0.3439	0.4245	0.3439	92.9397	89.0487
78	0	0.0	0.0	0.4021	0.3372	93.3419	89.3858
79	4,000	0.2979	0.1349	0.3724	0.3372	93.7142	89.7230
80	3,500	0.2606	0.1180	0.3649	0.3372	94.0791	90.0601
81	11,100	0.8266	0.3742	0.3500	0.3270	94.4291	90.3871
82	24,500	1.8245	0.8260	0.3426	0.3169	94.7717	90.7041
83	12,700	0.9458	0.4282	0.3053	0.3136	95.0770	91.0176
84	5,000	0.3724	0.1686	0.2979	0.3068	95.3749	91.3244
85	3,900	0.2904	0.1315	0.2904	0.2933	95.6653	91.6178
86	0	0.0	0.0	0.2830	0.2832	95.9483	91.9010
87	16,500	1.2288	0.5563	0.2681	0.2697	96.2164	92.1707
88	11,100	0.8266	0.3742	0.2606	0.2630	96.4770	92.4336
89	8,000	0.5958	0.2697	0.2606	0.2630	96.7377	92.6966
90	11,400	0.8490	0.3844	0.2606	0.2562	96.9983	92.9528
91	20,100	1.4969	0.6777	0.2532	0.2529	97.2515	93.2057
92	2,500	0.1862	0.0843	0.2458	0.2461	97.4972	93.4518
93	3,600	0.2681	0.1214	0.2383	0.2428	97.7355	93.6945
94	13,400	0.9979	0.4518	0.2234	0.2326	97.9589	93.9272
95	6,200	0.4617	0.2090	0.2160	0.2293	98.1749	94.1564
96	2,700	0.2011	0.0910	0.2011	0.2225	98.3759	94.3790
97	24,100	1.7948	0.8125	0.2011	0.2090	98.5770	94.5880
98	0	0.0	0.0	0.1862	0.2090	98.7632	94.7970
99	14,600	1.0873	0.4922	0.1862	0.2090	98.9494	95.0060
100	11,100	0.8266	0.3742	0.1415	0.2023	99.0909	95.2083
101	11,500	0.8564	0.3877	0.1415	0.2023	99.2323	95.4106
102	3,300	0.2458	0.1113	0.1266	0.2023	99.3589	95.6129

TABLE B. 47: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	4,100	0.3053	0.1382	0.1117	0.1989	99.4706	95.8118
104	3,800	0.2830	0.1281	0.1117	0.1955	99.5823	96.0074
105	2,700	0.2011	0.0910	0.0819	0.1922	99.6642	96.1995
106	16,900	1.2586	0.5698	0.0819	0.1821	99.7461	96.3816
107	14,000	1.0426	0.4720	0.0	0.1686	99.7461	96.5501
108	19,300	1.4373	0.6507	0.0	0.1652	99.7461	96.7153
109	18,000	1.3405	0.6069	0.0	0.1585	99.7461	96.8738
110	23,800	1.7724	0.8024	0.0	0.1551	99.7461	97.0289
111	29,800	2.2192	1.0047	0.0	0.1551	99.7461	97.1840
112	7,800	0.5809	0.2630	0.0	0.1382	99.7461	97.3222
113	1,100	0.0819	0.0371	0.0	0.1349	99.7461	97.4571
114	3,500	0.2606	0.1180	0.0	0.1315	99.7461	97.5885
115	0	0.0	0.0	0.0	0.1281	99.7461	97.7167
116	14,000	1.0426	0.4720	0.0	0.1214	99.7461	97.8380
117	7,600	0.5660	0.2562	0.0	0.1180	99.7461	97.9560
Total all manufacturing	1,342,800	99.7462		99.7462		8347.0859	
118	179,100		6.0384		0.1180		98.0740
119	17,300		0.5833		0.1180		98.1920
120	26,800		0.9036		0.1146		98.3066
121	5,900		0.1989		0.1113		98.4179
122	39,600		1.3351		0.1079		98.5258
123	34,900		1.1767		0.1045		98.6303
124	34,800		1.1733		0.1045		98.7348
125	18,100		0.6102		0.1011		98.8359
126	31,300		1.0553		0.0978		98.9337
127	3,100		0.1045		0.0910		99.0247
128	44,800		1.5105		0.0910		99.1157
129	12,100		0.4080		0.0843		99.2000
130	78,400		2.6433		0.0843		99.2843
131	247,300		8.3378		0.0641		99.3483
132	13,800		0.4653		0.0641		99.4124
133	16,400		0.5529		0.0641		99.4764

TABLE B. 47: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	68,100		2.2960		0.0573		99.5338
135	10,000		0.3372		0.0573		99.5911
136	165,600		5.5833		0.0506		99.6416
137	10,500		0.3540		0.0506		99.6922
138	124,500		4.1976		0.0438		99.7360
139	1,900		0.0641		0.0371		99.7731
140	14,600		0.4922		0.0371		99.8102
141	8,700		0.2933		0.0		99.8102
142	9,700		0.3270		0.0		99.8102
143	18,300		0.6170		0.0		99.8102
144	62,100		2.0937		0.0		99.8102
145	11,200		0.3776		0.0		99.8102
146	4,600		0.1551		0.0		99.8102
147	44,800		1.5105		0.0		99.8102
148	0		0.0		0.0		99.8102
149	10,200		0.3439		0.0		99.8102
150	14,200		0.4788		0.0		99.8102
151	41,900		1.4127		0.0		99.8102
152	44,600		1.5037		0.0		99.8102
153	100,600		3.3918		0.0		99.8102
154	5,800		0.1955		0.0		99.8102
Grand Total	2,966,000		99.8104		99.8104		12378.1172

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 48: CALCULATION OF THE TRESS INDICES FOR SCOTLAND FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	53,200		2.4630		9.6944		9.6944
2	6,000		0.2778		9.2037		18.8981
3	8,900		0.4120		5.7824		24.6805
4	45,100		2.0880		5.1481		29.8287
5	2,800		0.1296		3.5926		33.4213
6	1,400		0.0648		2.9306		36.3518
7	0		0.0		2.4630		38.8148
8	2,800	0.3737	0.1296	5.4058	2.2176	5.4058	41.0323
9	17,500	2.3358	0.8102	4.9253	2.1898	10.3310	43.2222
10	10,500	1.4015	0.4861	3.8975	2.0880	14.2285	45.3101
11	14,600	1.9487	0.6759	3.4704	2.0741	17.6989	47.3842
12	2,500	0.3337	0.1157	3.4036	1.8750	21.1025	49.2592
13	1,500	0.2002	0.0694	3.1100	1.7963	24.2125	51.0555
14	4,400	0.5873	0.2037	3.0699	1.7083	27.2824	52.7638
15	5,800	0.7742	0.2685	2.8430	1.7037	30.1254	54.4675
16	2,600	0.3470	0.1204	2.5494	1.5417	32.6748	56.0091
17	4,000	0.5339	0.1852	2.4560	1.3843	35.1307	57.3934
18	8,400	1.1212	0.3889	2.4293	1.3519	37.5600	58.7452
19	26,000	3.4704	1.2037	2.3492	1.2731	39.9091	60.0184
20	3,300	0.4405	0.1528	2.3358	1.2037	42.2450	61.2221
21	0	0.0	0.0	2.3091	1.1991	44.5541	62.4211
22	2,200	0.2936	0.1019	2.0155	1.1806	46.5696	63.6017
23	0	0.0	0.0	2.0021	1.0787	48.5717	64.6804
24	23,300	3.1100	1.0787	1.9487	1.0648	50.5204	65.7452
25	1,800	0.2403	0.0833	1.8954	0.9861	52.4158	66.7313
26							
27	2,300	0.3070	0.1065	1.7619	0.9352	54.1776	67.6664
28	1,200	0.1602	0.0556	1.7218	0.8843	55.8995	68.5507
29	2,200	0.2936	0.1019	1.6418	0.8519	57.5412	69.4025
30	0	0.0	0.0	1.6017	0.8426	59.1429	70.2451
31	23,000	3.0699	1.0648	1.5617	0.8148	60.7046	71.0599
32	7,100	0.9477	0.3287	1.4816	0.8102	62.1861	71.8701
33	10,900	1.4549	0.5046	1.4549	0.8009	63.6410	72.6710
34	3,500	0.4672	0.1620	1.4148	0.7361	65.0558	73.4071

TABLE B. 48: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	3,000	0.4004	0.1389	1.4015	0.6991	66.4573	74.1062
36	3,800	0.5072	0.1759	1.2413	0.6944	67.6987	74.8006
37	5,200	0.6941	0.2407	1.1746	0.6759	68.8732	75.4765
38	2,700	0.3604	0.1250	1.1212	0.6574	69.9944	76.1339
39	0	0.0	0.0	1.1212	0.6111	71.1156	76.7450
40	3,000	0.4004	0.1389	0.9744	0.5972	72.0900	77.3423
41	5,000	0.6674	0.2315	0.9610	0.5926	73.0510	77.9348
42	5,300	0.7074	0.2454	0.9477	0.5694	73.9986	78.5048
43	12,000	1.6017	0.5556	0.9076	0.5556	74.9063	79.0598
44	40,500	5.4058	1.8750	0.8542	0.5556	75.7605	79.6154
45	29,200	3.8975	1.3519	0.8409	0.5417	76.6014	80.1570
46	14,200	1.8954	0.6574	0.8275	0.5139	77.4289	80.6709
47							
48	6,800	0.9076	0.3148	0.8142	0.5046	78.2431	81.1755
49	6,400	0.8542	0.2963	0.7742	0.5046	79.0173	81.6802
50	11,700	1.5617	0.5417	0.7074	0.4907	79.7247	82.1709
51	1,100	0.1468	0.0509	0.6941	0.4861	80.4188	82.6570
52	3,500	0.4672	0.1620	0.6674	0.4722	81.0861	83.1292
53	25,500	3.4036	1.1806	0.6674	0.4306	81.7535	83.5598
54	4,000	0.5339	0.1852	0.6273	0.4306	82.3808	83.9903
55	6,100	0.8142	0.2824	0.5873	0.4306	82.9681	84.4208
56	36,900	4.9253	1.7083	0.5873	0.4259	83.5554	84.8468
57	11,100	1.4816	0.5139	0.5739	0.4120	84.1293	85.2588
58	18,400	2.4560	0.8519	0.5739	0.4074	84.7033	85.6662
59	0	0.0	0.0	0.5739	0.3981	85.2372	86.0643
60	15,000	2.0021	0.6944	0.5339	0.3889	85.7711	86.4532
61	3,500	0.4672	0.1620	0.5339	0.3889	86.3050	86.8421
62	1,800	0.2403	0.0833	0.5206	0.3519	86.8255	87.1939
63	0	0.0	0.0	0.5206	0.3426	87.3461	87.5365
64	0	0.0	0.0	0.5206	0.3380	87.8666	87.8745
65	0	0.0	0.0	0.5072	0.3333	88.3738	88.2078
66	3,300	0.4405	0.1528	0.4672	0.3333	88.8410	88.5411
67	4,400	0.5873	0.2037	0.4672	0.3287	89.3082	88.8698
68	1,400	0.1869	0.0648	0.4672	0.3148	89.7753	89.1846

TABLE B. 48: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.4405	0.3056	90.2158	89.4902
70	17,300	2.3091	0.8009	0.4405	0.2963	90.6562	89.7865
71	1,200	0.1602	0.0556	0.4271	0.2917	91.0833	90.0781
72	8,800	1.1746	0.4074	0.4138	0.2870	91.4971	90.3652
73	3,900	0.5206	0.1806	0.4004	0.2824	91.8975	90.6476
74	18,200	2.4293	0.8426	0.4004	0.2824	92.2980	90.9299
75	15,100	2.0155	0.6991	0.4004	0.2778	92.6984	91.2077
76	1,800	0.2403	0.0833	0.3737	0.2685	93.0721	91.4762
77	21,300	2.8430	0.9861	0.3604	0.2500	93.4325	91.7262
78	1,100	0.1468	0.0509	0.3470	0.2454	93.7795	91.9716
79	10,600	1.4148	0.4907	0.3337	0.2407	94.1132	92.2123
80	0	0.0	0.0	0.3377	0.2315	94.4469	92.4438
81	3,000	0.4004	0.1389	0.3070	0.2315	94.7539	92.6753
82	7,300	0.9744	0.3380	0.3070	0.2176	95.0609	92.8929
83	0	0.0	0.0	0.2936	0.2130	95.3545	93.1058
84	2,500	0.3337	0.1157	0.2936	0.2037	95.6481	93.3095
85	0	0.0	0.0	0.2936	0.2037	95.9418	93.5132
86	0	0.0	0.0	0.2803	0.1991	96.2221	93.7123
87	2,200	0.2936	0.1019	0.2536	0.1991	96.4757	93.9113
88	9,300	1.2413	0.4306	0.2536	0.1852	96.7293	94.0965
89	6,300	0.8409	0.2917	0.2403	0.1852	96.9695	94.2817
90	3,900	0.5206	0.1806	0.2403	0.1852	97.2098	94.4669
91	4,300	0.5739	0.1991	0.2403	0.1806	97.4500	94.6474
92	0	0.0	0.0	0.2403	0.1806	97.6903	94.8280
93	3,900	0.5206	0.1806	0.2136	0.1806	97.9038	95.0085
94	1,900	0.2536	0.0880	0.2002	0.1759	98.1040	95.1844
95	7,200	0.9610	0.3333	0.1869	0.1759	98.2909	95.3608
96	0	0.0	0.0	0.1602	0.1620	98.4510	95.5224
97	4,300	0.5739	0.1991	0.1602	0.1620	98.6112	95.6844
98	0	0.0	0.0	0.1468	0.1620	98.7580	95.8464
99	13,200	1.7619	0.6111	0.1468	0.1528	98.9048	95.9992
100	12,900	1.7218	0.5972	0.0	0.1528	98.9048	96.1520
101	6,200	0.8275	0.2870	0.0	0.1528	98.9048	96.3047
102	1,600	0.2136	0.0741	0.0	0.1481	98.9048	

TABLE B. 48: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	2,300	0.3070	0.1065	0.0	0.1435	98.9048	96.5964
104	4,000	0.5339	0.1852	0.0	0.1389	98.9048	96.7353
105	1,900	0.2536	0.0880	0.0	0.1389	98.9048	96.8742
106	17,600	2.3492	0.8148	0.0	0.1389	98.9048	97.0131
107	5,000	0.6674	0.2315	0.0	0.1296	98.9048	97.1427
108	4,700	0.6273	0.2176	0.0	0.1296	98.9048	97.2723
109	12,300	1.6418	0.5694	0.0	0.1250	98.9048	97.3973
110	19,100	2.5494	0.8843	0.0	0.1204	98.9048	97.5177
111	8,400	1.1212	0.3889	0.0	0.1204	98.9048	97.6380
112	3,200	0.4271	0.1481	0.0	0.1157	98.9048	97.7538
113	0	0.0	0.0	0.0	0.1157	98.9048	97.8695
114	2,100	0.2803	0.0972	0.0	0.1065	98.9048	97.9760
115	0	0.0	0.0	0.0	0.1065	98.9048	98.0825
116	3,100	0.4138	0.1435	0.0	0.1019	98.9048	98.1843
117	1,800	0.2403	0.0833	0.0	0.1019	98.9048	98.2861
Total all manufacturing	749,200	98.9049		98.9049		8434.3906	
118	198,800		9.2037		0.1019		98.3880
119	9,300		0.4306		0.0972		98.4852
120	20,200		0.9352		0.0880		98.5731
121	3,300		0.1528		0.0880		98.6611
122	29,900		1.3843		0.0880		98.7490
123	33,300		1.5417		0.0833		98.8324
124	27,500		1.2731		0.0833		98.9157
125	7,200		0.3333		0.0833		98.9990
126	10,200		0.4722		0.0833		99.0824
127	2,600		0.1204		0.0741		99.1564
128	38,800		1.7963		0.0694		99.2259
129	5,400		0.2500		0.0648		99.2907
130	44,800		2.0741		0.0648		99.3555
131	209,400		9.6944		0.0556		99.4110
132	10,900		0.5046		0.0556		99.4666
133	9,200		0.4259		0.0509		99.5157

TABLE B. 48: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	47,900		2.2176		0.0509		99.5684
135	8,600		0.3981		0.0		99.5684
136	124,900		5.7824		0.0		99.5684
137	12,800		0.5926		0.0		99.5684
138	111,200		5.1481		0.0		99.5684
139	1,900		0.0880		0.0		99.5684
140	15,900		0.7361		0.0		99.5684
141	6,600		0.3056		0.0		99.5684
142	6,100		0.2824		0.0		99.5684
143	4,600		0.2130		0.0		99.5684
144	63,300		2.9306		0.0		99.5684
145	7,600		0.3519		0.0		99.5684
146	3,800		0.1759		0.0		99.5684
147	36,800		1.7037		0.0		99.5684
148	0		0.0		0.0		99.5684
149	9,300		0.4306		0.0		99.5684
150	12,000		0.5556		0.0		99.5684
151	25,900		1.1991		0.0		99.5684
152	47,300		2.1898		0.0		99.5684
153	77,600		3.5926		0.0		99.5684
154	7,400		0.3426		0.0		99.5684
Grand total	2,169,000		99.5687		99.5687		12795.9961

Source of Data: Employment and Productivity Gazette, March 1969

TABLE B. 49: CALCULATION OF THE TRESS INDICES FOR WALES FOR THE 152 MLH JUNE 1968

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
1	11,400		1.1574		8.0711		8.0711
2	2,900		0.2944		7.4315		15.5025
3	0		0.0		7.3198		22.8223
4	63,600		6.4569		6.4772		29.2995
5	4,100		0.4162		6.4569		35.7563
6	1,000		0.1015		5.0964		40.8528
7	0		0.0		4.5279		45.3807
8	0	0.0	0.0	21.8182	2.9543	21.8182	48.3350
9	6,600	1.9672	0.6701	4.6498	2.3249	26.4679	50.6598
10	1,200	0.3577	0.1218	4.3219	1.9898	30.7898	52.6497
11	1,300	0.3875	0.1320	3.0402	1.9594	33.8301	54.6090
12	2,400	0.7154	0.2437	2.8316	1.6853	36.6617	56.2943
13	0	0.0	0.0	2.7422	1.5838	39.4038	57.8781
14	2,000	0.5961	0.2030	2.6826	1.5533	42.0864	59.4314
15	0	0.0	0.0	2.5335	1.4924	44.6199	60.9237
16	0	0.0	0.0	2.5037	1.4721	47.1236	62.3958
17	0	0.0	0.0	2.3547	1.4721	49.4783	63.8679
18	3,600	1.0730	0.3655	1.9672	1.3096	51.4455	65.1775
19	1,300	0.3875	0.1320	1.8778	1.1574	53.3233	66.3349
20	1,100	0.3279	0.1117	1.6095	1.1574	54.9329	67.4922
21	3,900	1.1624	0.3959	1.5797	1.0355	56.5126	68.5277
22	3,200	0.9538	0.3249	1.5499	0.9645	58.0625	69.4922
23	0	0.0	0.0	1.4903	0.9340	59.5528	70.4262
24	10,200	3.0402	1.0355	1.4903	0.9239	61.0431	71.3501
25	1,200	0.3577	0.1218	1.4307	0.9137	62.4738	72.2637
26							
27	0	0.0	0.0	1.4307	0.8629	63.9045	73.1267
28	0	0.0	0.0	1.2221	0.8528	65.1266	73.9795
29	5,200	1.5499	0.5279	1.1624	0.8020	66.2890	74.7815
30	0	0.0	0.0	1.1028	0.6701	67.3918	75.4515
31	73,200	21.8182	7.4315	1.1028	0.6497	68.4946	76.1013
32	2,700	0.8048	0.2741	1.0730	0.6497	69.5677	76.7510
33	4,800	1.4307	0.4873	1.0730	0.6396	70.6407	77.3906
34	9,500	2.8316	0.9645	1.0730	0.5990	71.7137	77.9896

TABLE B. 49: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
35	2,700	0.8048	0.2741	1.0432	0.5482	72.7569	78.5378
36	0	0.0	0.0	0.9538	0.5381	73.7107	79.0759
37	1,000	0.2981	0.1015	0.9538	0.5279	74.6645	79.6038
38	0	0.0	0.0	0.9538	0.5076	75.6183	80.1114
39	0	0.0	0.0	0.9538	0.5076	76.5721	80.6190
40	0	0.0	0.0	0.8346	0.4975	77.4066	81.1164
41	1,500	0.4471	0.1523	0.8048	0.4975	78.2114	81.6139
42	0	0.0	0.0	0.8048	0.4873	79.0162	82.1012
43	0	0.0	0.0	0.7750	0.4873	79.7911	82.5885
44	8,500	2.5335	0.8629	0.7452	0.4772	80.5363	83.0656
45	7,900	2.3547	0.8020	0.7452	0.4162	81.2814	83.4819
46	8,400	2.5037	0.8528	0.7154	0.4162	81.9968	83.8981
47							
48	2,600	0.7750	0.2640	0.7154	0.4061	82.7121	84.3042
49	1,500	0.4471	0.1523	0.6855	0.3959	83.3976	84.7001
50	5,400	1.6095	0.5482	0.6557	0.3959	84.0534	85.0961
51	3,200	0.9538	0.3249	0.6259	0.3756	84.6793	85.4717
52	2,100	0.6259	0.2132	0.6259	0.3756	85.3052	85.8473
53	9,200	2.7422	0.9340	0.5961	0.3655	85.9014	86.2128
54	5,300	1.5797	0.5381	0.5663	0.3655	86.4677	86.5783
55	3,600	1.0730	0.3655	0.5663	0.3655	87.0340	86.9437
56	2,500	0.7452	0.2538	0.5663	0.3655	87.6003	87.3092
57	0	0.0	0.0	0.5365	0.3553	88.1368	87.6645
58	14,500	4.3219	1.4721	0.5067	0.3553	88.6435	88.0199
59	0	0.0	0.0	0.5067	0.3452	89.1502	88.3650
60	2,800	0.8346	0.2843	0.4471	0.3249	89.5973	88.6899
61	0	0.0	0.0	0.4471	0.3249	90.0444	89.0147
62	1,700	0.5067	0.1726	0.4173	0.3249	90.4616	89.3396
63	0	0.0	0.0	0.3875	0.3249	90.8491	89.6645
64	0	0.0	0.0	0.3875	0.3147	91.2366	89.9792
65	0	0.0	0.0	0.3875	0.3046	91.6240	90.2837
66	1,900	0.5663	0.1929	0.3577	0.2944	91.9817	90.5781
67	2,400	0.7154	0.2437	0.3577	0.2843	92.3394	90.8624
68	3,600	1.0730	0.3655	0.3577	0.2843	92.6970	91.1467

TABLE B. 49: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
69	0	0.0	0.0	0.3577	0.2741	93.0547	91.4208
70	15,600	4.6498	1.5838	0.3279	0.2741	93.3826	91.6949
71	9,000	2.6826	0.9137	0.3279	0.2741	93.7104	91.9690
72	2,100	0.6259	0.2132	0.2981	0.2640	94.0085	92.2329
73	0	0.0	0.0	0.2981	0.2538	94.3065	92.4867
74	0	0.0	0.0	0.2981	0.2538	94.6046	92.7405
75	0	0.0	0.0	0.0	0.2538	94.6046	92.9943
76	0	0.0	0.0	0.0	0.2437	94.6046	93.2380
77	1,900	0.5663	0.1929	0.0	0.2437	94.6046	93.4816
78	0	0.0	0.0	0.0	0.2335	94.6046	93.7151
79	0	0.0	0.0	0.0	0.2234	94.6046	93.9385
80	1,200	0.3577	0.1218	0.0	0.2132	94.6046	94.1517
81	1,000	0.2981	0.1015	0.0	0.2132	94.6046	94.3649
82	0	0.0	0.0	0.0	0.2030	94.6046	94.5679
83	0	0.0	0.0	0.0	0.1929	94.6046	94.7608
84	0	0.0	0.0	0.0	0.1929	94.6046	94.9537
85	0	0.0	0.0	0.0	0.1929	94.6046	95.1465
86	0	0.0	0.0	0.0	0.1827	94.6046	95.3293
87	0	0.0	0.0	0.0	0.1827	94.6046	95.5120
88	5,000	1.4903	0.5076	0.0	0.1726	94.6046	95.6846
89	1,700	0.5067	0.1726	0.0	0.1726	94.6046	95.8572
90	0	0.0	0.0	0.0	0.1523	94.6046	96.0095
91	3,700	1.1028	0.3756	0.0	0.1523	94.6046	96.1617
92	0	0.0	0.0	0.0	0.1523	94.6046	96.3140
93	1,900	0.5663	0.1929	0.0	0.1421	94.6046	96.4561
94	1,800	0.5365	0.1827	0.0	0.1320	94.6046	96.5881
95	3,500	1.0432	0.3553	0.0	0.1320	94.6046	96.7201
96	0	0.0	0.0	0.0	0.1320	94.6046	96.8521
97	2,200	0.6557	0.2234	0.0	0.1218	94.6046	96.9739
98	1,200	0.3577	0.1218	0.0	0.1218	94.6046	97.0957
99	4,100	1.2221	0.4162	0.0	0.1218	94.6046	97.2175
100	3,700	1.1028	0.3756	0.0	0.1218	94.6046	97.3394
101	3,200	0.9538	0.3249	0.0	0.1117	94.6046	97.4510
102	0	0.0	0.0	0.0	0.1117	94.6046	97.5627

TABLE B. 49: (continued)

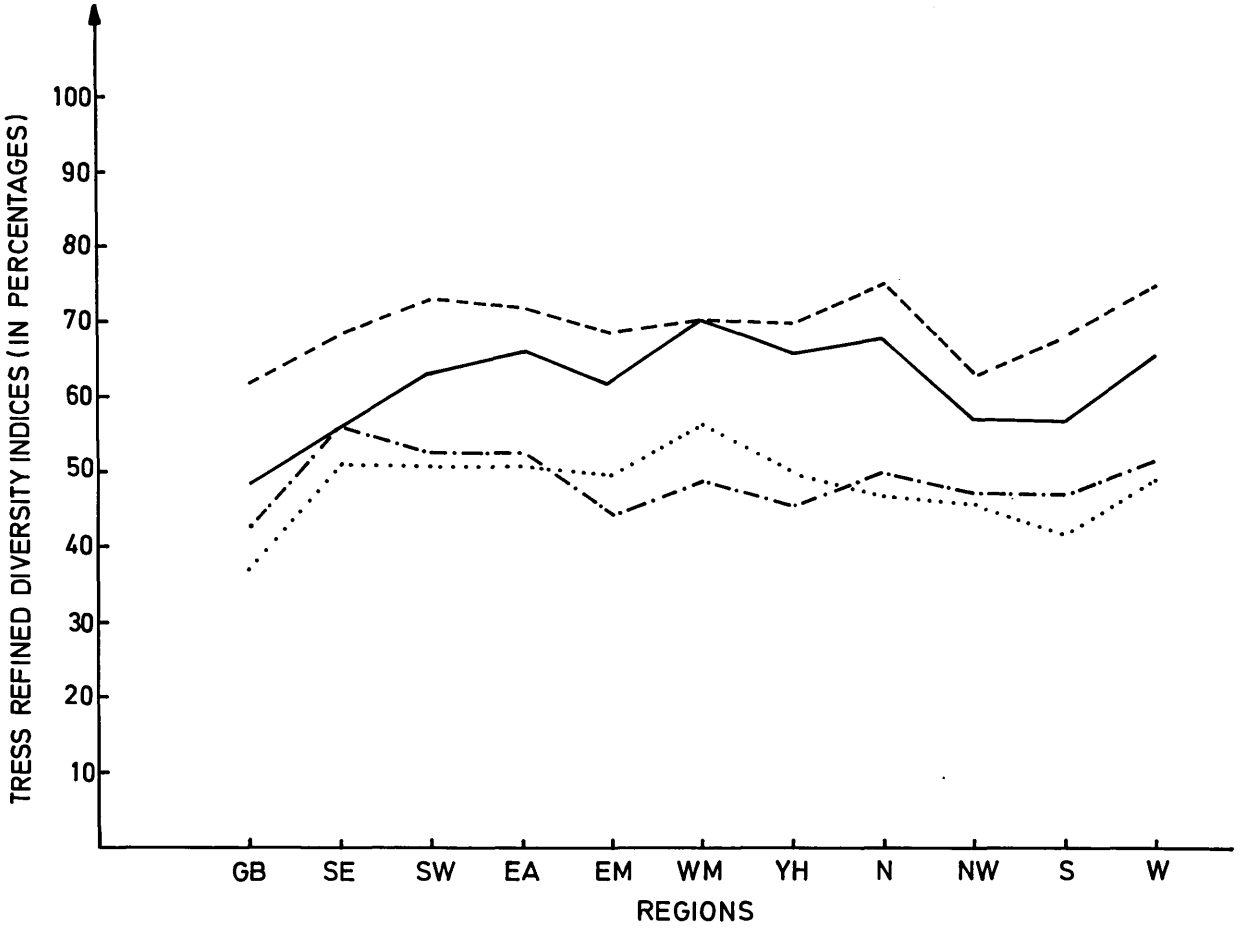
MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
103	0	0.0	0.0	0.0	0.1015	94.6046	97.6642
104	1,000	0.2981	0.1015	0.0	0.1015	94.6046	97.7657
105	0	0.0	0.0	0.0	0.1015	94.6046	97.8672
106	5,000	1.4903	0.5076	0.0	0.1015	94.6046	97.9688
107	1,300	0.3875	0.1320	0.0	0.0	94.6046	97.9688
108	1,100	0.3279	0.1117	0.0	0.0	94.6046	97.9688
109	2,500	0.7452	0.2538	0.0	0.0	94.6046	97.9688
110	3,200	0.9538	0.3249	0.0	0.0	94.6046	97.9688
111	4,800	1.4307	0.4873	0.0	0.0	94.6046	97.9688
112	0	0.0	0.0	0.0	0.0	94.6046	97.9688
113	0	0.0	0.0	0.0	0.0	94.6046	97.9688
114	6,300	1.8778	0.6396	0.0	0.0	94.6046	97.9688
115	0	0.0	0.0	0.0	0.0	94.6046	97.9688
116	2,300	0.6855	0.2335	0.0	0.0	94.6046	97.9688
117	1,400	0.4173	0.1421	0.0	0.0	94.6046	97.9688
Total all manufacturing	335,500	94.6047		94.6047		8789.1445	
118	795,500		8.0711		0.0		97.9688
119	4,900		0.4975		0.0		97.9688
120	15,300		1.5533		0.0		97.9688
121	3,000		0.3046		0.0		97.9688
122	14,500		1.4721		0.0		97.9688
123	12,900		1.3096		0.0		97.9688
124	11,400		1.1574		0.0		97.9688
125	2,700		0.2741		0.0		97.9688
126	5,900		0.5990		0.0		97.9688
127	0		0.0		0.0		97.9688
128	19,300		1.9594		0.0		97.9688
129	1,500		0.1523		0.0		97.9688
130	14,700		1.4924		0.0		97.9688
131	72,100		7.3198		0.0		97.9688
132	6,400		0.6497		0.0		97.9688
133	4,700		0.4772		0.0		97.9688

TABLE B. 49: (continued)

MLH	Number of Employees (employed and unemployed)	Employment in industry in area as a percentage of total employment in area		Percentage ranked (from highest to lowest)		Sum of the accumulated percentage	
		Only manuf.	All industries	Only manuf.	All industries	Only manuf.	All industries
134	16,600		1.6853		0.0		97.9688
135	2,500		0.2538		0.0		97.9688
136	63,800		6.4772		0.0		97.9688
137	3,500		0.3553		0.0		97.9688
138	50,200		5.0964		0.0		97.9688
139	0		0.0		0.0		97.9688
140	4,000		0.4061		0.0		97.9688
141	4,900		0.4975		0.0		97.9688
142	2,800		0.2843		0.0		97.9688
143	3,600		0.3655		0.0		97.9688
144	29,100		2.9543		0.0		97.9688
145	3,100		0.3147		0.0		97.9688
146	1,800		0.1827		0.0		97.9688
147	19,600		1.9898		0.0		97.9688
148	0		0.0		0.0		97.9688
149	3,400		0.3452		0.0		97.9688
150	6,400		0.6497		0.0		97.9688
151	9,100		0.9239		0.0		97.9688
152	22,900		2.3249		0.0		97.9688
153	44,600		4.5279		0.0		97.9688
154	3,900		0.3959		0.0		97.9688
Grand Total	985,000		97.9689		97.9689		13065.9141

Source of Data: Employment and Productivity Gazette, March 1969

GRAPH C-1; COMPARISON BETWEEN THE RESULTS OF THE TRESS REFINED DIVERSITY INDICES CALCULATED FOR THE 25 SIC AND THE 152 MLH (END MAY 1959).



KEY

——— INDICES FOR MANUFACTUING INDUSTRIES CALCULATED FOR THE 152 MLH;

- - - - INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 152 MLH;

..... INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 25 SIC;

·-·-·- INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 25 SIC;

GRAPH C-1: COMPARISON BETWEEN THE RESULTS OF THE TRESS REFINED DIVERSITY INDICES CALCULATED FOR THE SIC 25 AND THE 152 MLH (END MAY 1989).

KEY

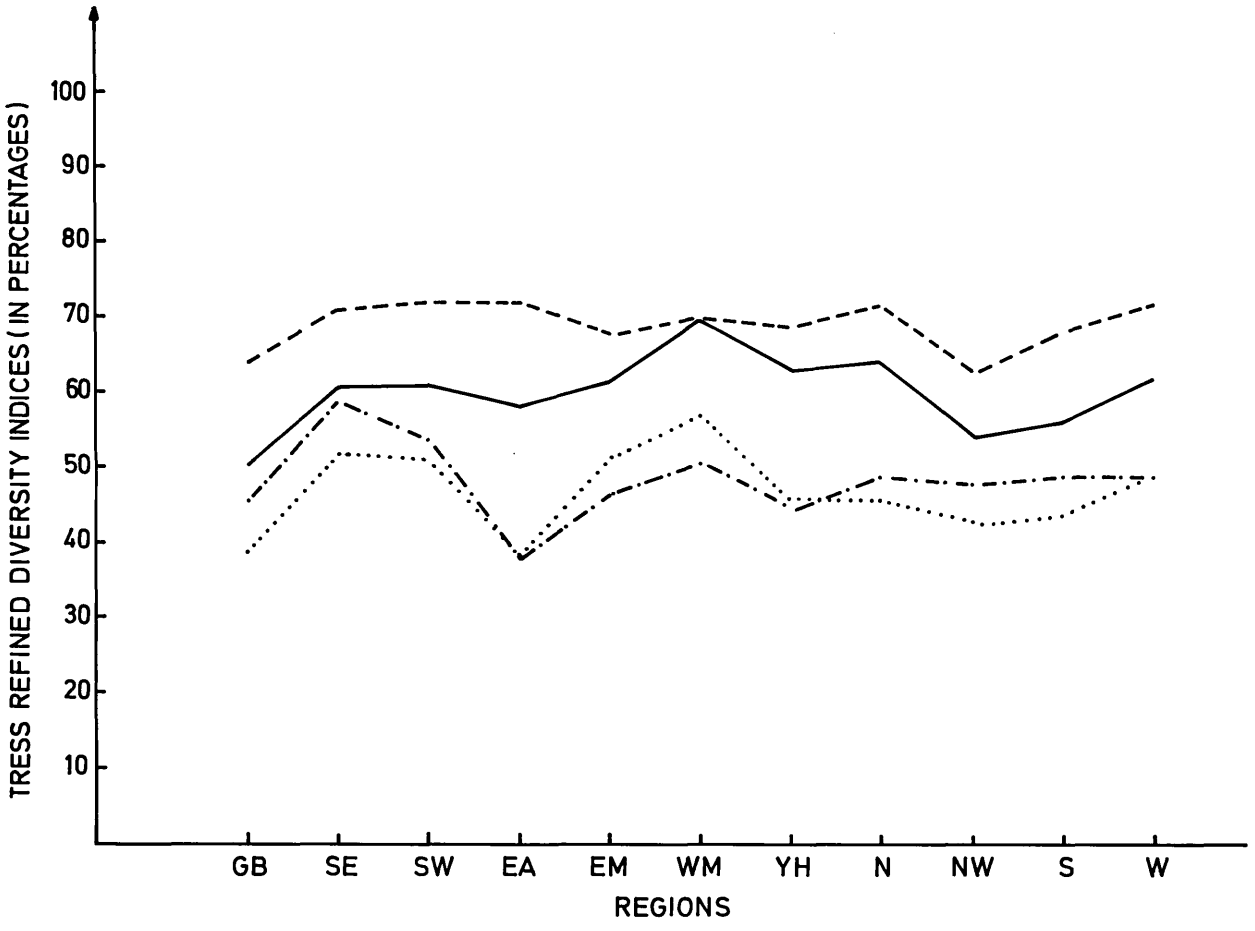
——— INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 152 MLH;

– – – INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 152 MLH;

. . . . . INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 25 SIC;

–.–.–.– INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 25 SIC;

GRAPH C-2; COMPARISON BETWEEN THE RESULTS OF TRESS REFINED DIVERSITY INDICES CALCULATED FOR 25 SIC AND THE 152 MLH (JUNE 1968)



KEY:

——— INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 152 MLH;

- - - - INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 152 MLH;

..... INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 25 SIC;

–·–·– INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 25 SIC;

KEY:

——— INDICES FOR NORTHERN REGIONS CALCULATED FOR THE 1ST MLH;

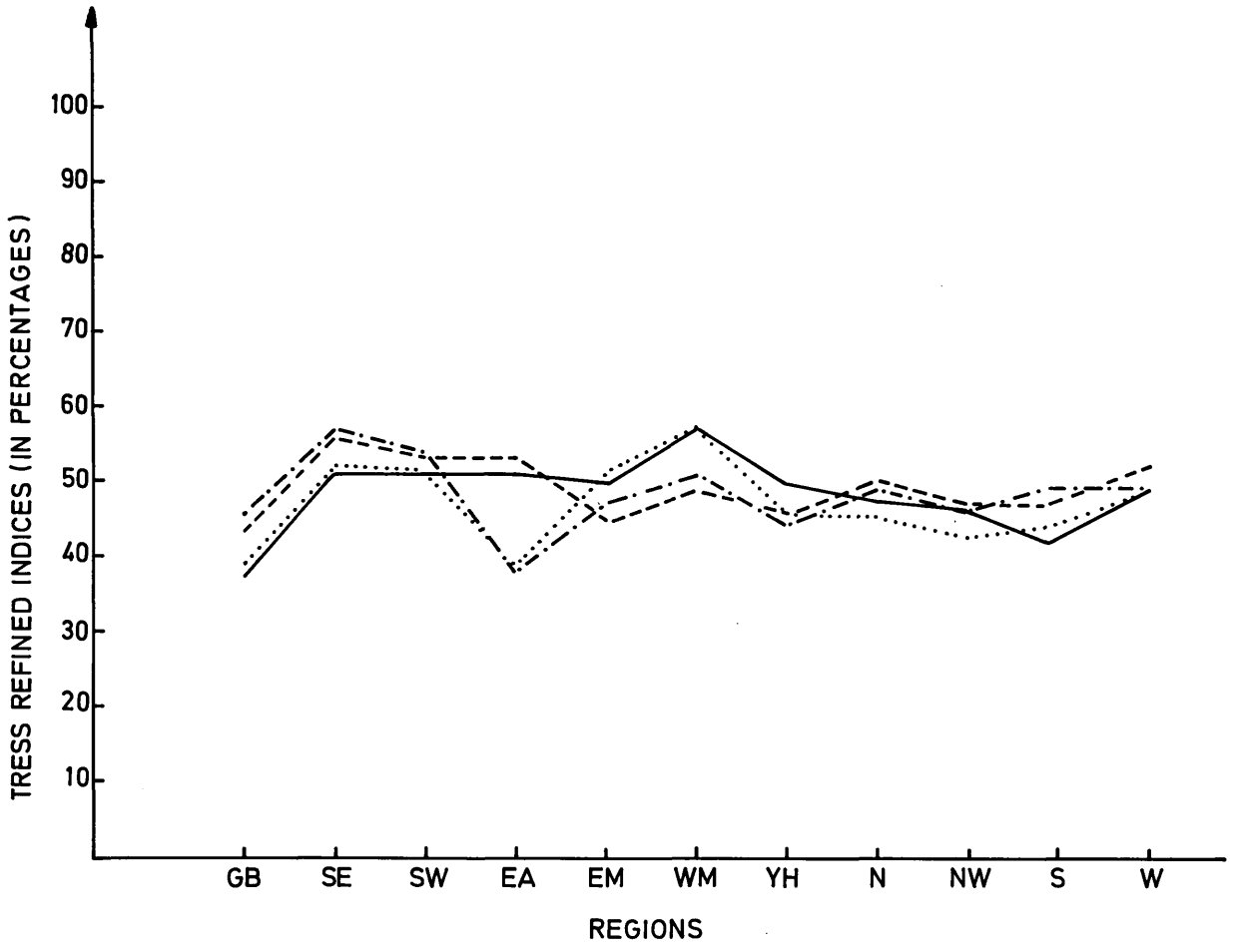
– – – INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 1ST MLH;

. . . . . INDICES FOR NORTHERN REGIONS CALCULATED FOR THE 2D SIC;

–.–.– INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 2D SIC.

GRAPH C-2: COMPARISON BETWEEN THE RESULTS OF TRESS REFINED DIVERSITY INDICES CALCULATED FOR 2D SIC AND THE 1ST MLH (JUNE 1988)

GRAPH C-3; COMPARISON BETWEEN THE RESULTS OF THE TRESS REFINED INDICES CALCULATED FOR THE 25 SIC (END MAY 1959) AND THE 25 SIC (JUNE 1968).



KEY

——— INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 25 SIC (END MAY 1959).

- - - - - INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 25 SIC (END MAY 1959).

. . . . . INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR 25 SIC (JUNE 1968)

-·—·- INDICES FOR ALL INDUSTRIES CALCULATED FOR 25 SIC (JUNE 1968).

GRAPH C-3: COMPARISON BETWEEN THE RESULTS OF THE TRESS REFINED INDICES CALCULATED FOR THE SIC (END MAY 1959) AND THE 25 SIC (JUNE 1968).

KEY

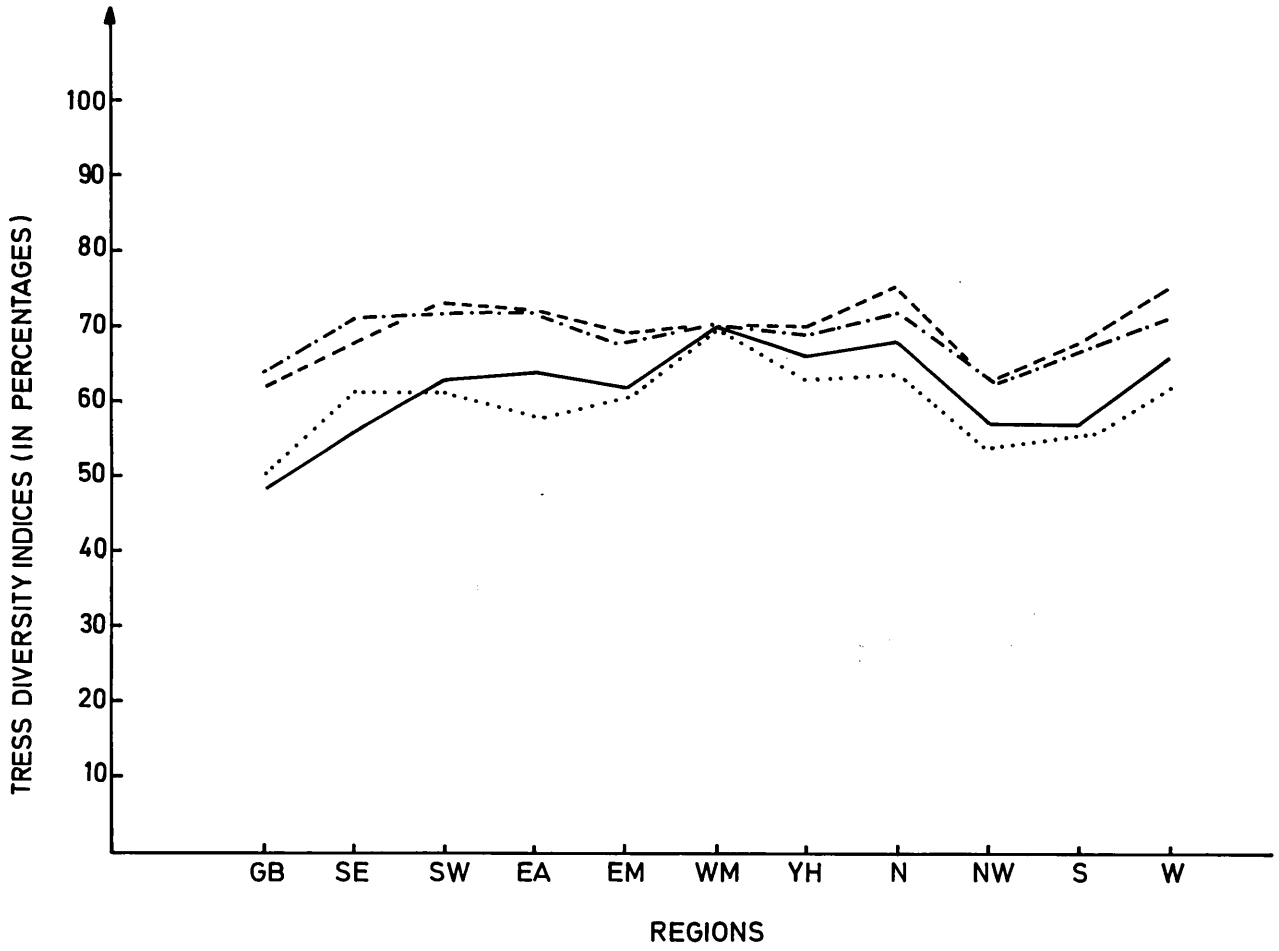
——— INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 25 SIC (END MAY 1959).

- - - - - INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 25 SIC (END MAY 1959).

. . . . . INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR 25 SIC (JUNE 1968).

-.-.- INDICES FOR ALL INDUSTRIES CALCULATED FOR 25 SIC (JUNE 1968).

GRAPH C-4; COMPARISON BETWEEN THE RESULTS OF THE TRESS REFINED INDICES CALCULATED FOR THE 152 MLH, (END MAY 1959) AND THE 152 MLH (JUNE 1968)



KEY

——— INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 152 MLH (END MAY 1959).

- - - - - INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 152 MLH (END MAY 1959).

. . . . . INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 152 MLH (JUNE 1968).

—·—·— INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 152 MLH (JUNE 1968).

GRAPH C-4: COMPARISON BETWEEN THE RESULTS OF THE TRESS REVISED INDICES CALCULATED FOR 152 MLH, (END MAY 1989) AND THE 152 MLH (JUNE 1988)

KEY

——— INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 152 MLH (END MAY 1989).

- - - - - INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 152 MLH (END MAY 1989).

. . . . . INDICES FOR MANUFACTURING INDUSTRIES CALCULATED FOR THE 152 MLH (JUNE 1988).

—·—·— INDICES FOR ALL INDUSTRIES CALCULATED FOR THE 152 MLH (JUNE 1988).

REFERENCE AND BIBLIOGRAPHY

BOOKS

Alder, H. L. and Roessler, E. B.: *Introduction to Probability and Statistics* S. Francisco, W. H. Freeman & Co., 1972

Bergmann, B. R. and Kaun, D. E.: *Structural Unemployment in the United States* Washington D.C., Brookings Institute for the U.S. Department of Commerce, 1966 in - Thirlwall, A. P.: "Types of Unemployment with Special Reference to 'Non-Demand Deficient' Unemployment in Great Britain." Scottish Journal of Political Economy, February 1969 Vol. XVI No. 1, pp. 20 - 49

Britton, J. N. H.: *Regional Analysis and Economic Geography* London, Bell, 1967

Brown, A. J.: *The Framework of Regional Economics in the United Kingdom* Cambridge, The University Press, 1972

Chisholm, M. and Manners, G.: *Spatial Policy Problems of the British Economy* Cambridge, The University Press, 1971

Chisholm, M. and Oeppen, J.: *The Changing Pattern of Employment* - *Regional Specialisation and Industrial Localisation in Britain* London, Croom Helm Ltd., 1973

Clapham, Sir J.: *An Economic History of Modern Britain* Cambridge, The University Press, 1968

Coates, E. B. and Rawstrom, E. M.: *Regional Variations in Britain* London, B. T. Batsford Ltd., 1971

Dixon, R. J. and Thirlwall, A. P.: *Regional Growth and Unemployment in the United Kingdom* London, Macmillan Press Ltd., 1975

Downie, N. M. and Heath, R. W.: *Basic Statistical Methods* New York, Harper and Row, 1970

Evely, R. and Little, I. M. D.: Concentration in British Industry: an Empirical Study of the Structure of Industrial Population 1935 - 1951
Cambridge, The University Press, 1960

Friedmann, J. and Alonso, W: Regional Development and Planning: a Reader
Cambridge, Mass., the M.I.T. Press, 1965

Lee, C. H.: Regional Economic Growth in the United Kingdom since the 1880's
Maidenhead, McGraw Hill Co., 1971

Manners, G., Keeble, D., Rodgers, B. and Warren, K: Regional Development in Britain
London, John Wiley and Sons, 1972

McCrone, G.: Regional Policy in Britain
London, George Allen and Unwin, Ltd., 1970

Richardson, H. W.: Elements of Regional Economics
Middlesex, Penguin Books Ltd., 1969

Smith, D. M.: Industrial Location - an Economic Geographical Analysis
New York, John Wiley and Sons, 1971

Stamp, Sir D. and Beaver, S. H.: The British Isles
London, Longman Group Ltd., 1971

Thomas, M. W.: A Survey of English Economic History
London, Blackie and Son Ltd., 1967

Thompson, W. R.: A Preface to Urban Economics
Baltimore, John Hopkins Press, 1965 in
Paraskevopoulos, C. C.: "Population Size and the Extent of Industrial Diversification - an Alternative View"
Urban Studies, 1975, Vol. 12, pp. 105 - 107
"Internal and External Factors in the Development of Urban Economics" in -
Perloff, H. S. and Wingo, L: Issues in Urban Economics
Baltimore, J. Hopkins Press, 1968, p. 52

Tranter, N.: Population Since the Industrial Revolution: The Case of England and Wales
London, Croom Helm Ltd., 1973

ARTICLES

Bird, P. A. and Thirlwall, A. P.: "The Incentive to Invest in the New Development Areas"
District Bank Review, June, 1967, pp. 24 - 45

Bosanquet, N. and Standing, G: "Government and Unemployment 1966 - 1970: A Study of Policy and Evidence."
British Journal of Industrial Relations, July 1972, Vol. X, No. 2, pp. 180 - 192

Brown, A. J.: "Surveys of Applied Economics: Regional Economics with Special Reference to the United Kingdom"
Economic Journal, December 1969, LXXIX, pp.759-796

Chalmers, J. A.: "Measuring Changes in Regional Industrial Structure - a comment on Stilwell and Ashby"
Urban Studies, 1971, Vol. VIII, No. 3, pp. 289-291

Clemente, F. and Sturgis, R. B.: "Population Size and Industrial Diversification"
Urban Studies, 1971, Vol. VIII, No. 3, pp. 65 - 68

Crowley, R. W.: "Reflections and Further Evidences on Population Sizes and Industrial Diversification"
Urban Studies, 1973, Vol. X, pp. 91 - 94

Ferguson, A. G. and Forer, P. C.: "Aspects of measuring Employment Specialisation in Great Britain"
Area, 1973, No. 5, pp. 121 - 128

Gujarati, D.: "The Behaviour of Unemployment and Unfilled Vacancies - Great Britain 1958 - 1971"
Economic Journal, March 1973, 82, pp. 195 - 202

Habbakkuk, H. J.: "The Economic History of Modern Britain"
Journal of Economic History, 1958, Vol. XVIII, pp. 486 - 501

Harris, C. P. and Thirlwall, A. P.: "Interregional Variations in Cyclical Sensitivity to Unemployment in the United Kingdom 1949-1964" in Richardson, H. W.: Regional Economics - a Reader London, Macmillan & Co. Ltd., 1970 pp. 150-165

Hauser, D. P. and Keeble, D. E.: "Spatial Analysis of manufacturing growth in outer South-east England 1960 - 1967" Regional Studies, 1971, 5, pp. 229 - 262

Holmans,A. E.: "Restriction of Industrial Expansion in South-east England:a Reappraisal" Oxford Economic Papers, July, 1964, pp. 235 - 264

Horowitz, I: "Employment Concentration in the Common Market: an Entropy Approach" Journal of the Royal Statistical Society, 1970, 130, pp. 463 - 479

Lipsey, R.: "Structural and Deficient - Demand Unemployment Reconsidered" in Ross, A. M.(ed): Employment Policy and the Labour Market University of California Press, 1965, pp. 210-255

MacKay, R. R.: "Evaluating the Effects of British Regional Economic Policy" Economic Journal, June 1974, Vol. 84

Moore, B. and Rhodes, J.: "Evaluating the Effects of British Regional Economic Policy" Economic Journal, March 1973

Moxon, J. W. J.: "The Industrial Development Certificate and Employment Creation" Urban Studies, 1972, Vol. 9, pp. 229 - 233

Needleman, N. and Scott, B: "Regional Problems and Location of Industry Policy in Britain" Urban Studies, November 1974, Vol. 11

Paraskevopoulos,C.C. "Population Size and the Extent of Industrial Diversification - an Alternative View" Urban Studies, 1975, Vol. 12, pp. 105 - 107

Parr, J. B.: "The Nature and Function of Growth Poles in Economic Development"
Mimeographed Paper presented at a meeting of the Association of American Geographers, Columbus, Ohio, April 1965

Perloff, H. S.: "How a Region Grows"
Supplementary Paper No. 17. Committee for Economic Development, New York, 1963 in

Stilwell, F. B.: "Regional Growth and Structural Adaptations"
Urban Studies, 1969, Vol. 6, No. 2, pp. 162-178

Perroux, F.: "Note sur la Notion des Poles de Croissance"
Economie Appliquee, 1955, 1, 2, pp. 307 - 320

Stilwell, F. B.: "Regional Growth and Structural Adaptation"
Urban Studies, 1969, Vol. 6, No. 2, pp. 162-178

Taylor, J.: "The Behaviour of Unemployment and Unfilled Vacancies - Great Britain 1958 - 1971: an alternative view"
Economic Journal, December 1972,83, pp. 1352 - 1364

Thirlwall, A. P.: "Forecasting Regional Unemployment in Great Britain"
Regional Science and Urban Economics, August 1975, pp. 357 - 374

_____ "Government Manpower Policies in Great Britain - their Rationale and Benefits"
British Journal of Industrial Relations, July, 1972, Vol. X, No. 2, pp. 165 - 179

_____ "Migration and Regional Unemployment - Some Lessons for Regional Planning"
Westminster Bank Review, November 1966, pp. 31-44

_____ "Regional Unemployment as a Cyclical Phenomena"
Scottish Journal of Political Economy, June 1966, Vol. XIII, No. 2, pp. 205 - 219

_____ "Types of Unemployment in the Regions of Great Britain"
Manchester School, December, 1974, No.4, pp. 325-339

Thirlwall, A. P.: "Types of Unemployment with Special Reference to 'Non-Demand Deficient' Unemployment in Great Britain"
Scottish Journal of Political Economy, February 1969, Vol. XVI, No.1, pp. 20 - 49

Tress, R. C.: "Unemployment and the Diversification of Industry"
Manchester School, 1938, Vol. 9, pp. 140-152

OTHERS

Budget and Local Employment Act of 1963
London, HMSO

Central Scotland: A Programme for Development and Growth
London, HMSO, 1963,Cmnd. 2188

Control of Office and Industrial Development of Act of 1965
London, HMSO

Department of Employment Gazette:
London, Department of Employment, January 1973, pp. 5 - 7

Distribution of Industry Act of 1945
London HMSO

Economic Progress Report:
London, Information Division of the Treasury, issues of November 1973, June 1974, October 1975, March and April 1976

Finance Act of 1972 London, HMSO

Finance and Local Employment Act of 1963
London, HMSO

Harris, A. I. and Clausen, R.: Labour Mobility in Great Britain 1953 - 1963
London, Government Social Survey, HMSO 1966

Industrial Development Act of 1966
London, HMSO

Industrial Training Act of 1964
London, HMSO

Industry Act of 1972
London, HMSO

Kershaw, D.: "Diversification of Industry in Britain" Undergraduate project for the B.Sc. requirements of the Department of Geography, University of Bristol 1971

Local Employment Act of 1960
London, HMSO

Local Employment Act of 1970
London, HMSO

Ministry of Labour Gazette:
London, Ministry of Labour, February 1959, p.55

The North-East: A Programme for Development and Growth
London, HMSO, 1963, Cmnd. 2206

Publication on Expenses of the Industrial Training Board met by the Exchequer
London, Department of Industry, 1974

Publications "Incentives for Industry in the Areas for Expansion"
London, Department of Trade and Industry, August 1974

Report of a Committee under the chairmanship of Sir Joseph Hunt: The Intermediate Areas"
London, HMSO, 1969, Cmnd. 3998

Report of the Industrial Transference Board
London, HMSO, 1928, Cmnd. 3156

Reports of the Investigators into Industrial Conditions in Certain Depressed Areas
London, Ministry of Labour, HMSO, 1934, Cmnd. 4728

Second Report of the Select Committee on Estimates: Session 1955-56
The Development Areas
London, HMSO

Selective Employment Payments Act of 1966
London, HMSO

Royal Commission on the Distribution of Industrial Population:
The Barlow Report
London, HMSO, 1940, Cmnd. 6153

Special Areas Act of 1934
London, HMSO

Special Areas Amendment Act of 1937
London, HMSO

Statistics of Trade Act of 1947
London, HMSO, July 1947

Town and Country Planning Act of 1947
London, HMSO, 1947, Cmnd. 7006

White Paper on the Distribution of Industry 1948
London, HMSO, 1948, Cmnd. 7540

White Paper on Employment Policy 1944
London, HMSO, 1944, Cmnd. 6527

White Paper on National Superannuation and Social Insurance
London, HMSO, 1969, Cmnd. 3883