

ECONOMIC DEMOGRAPHY
OF EASTERN
AND SOUTHERN EUROPE

By WILBERT E. MOORE

LEAGUE
49236

LEAGUE OF NATIONS, GENEVA

ECONOMIC, FINANCIAL AND TRANSIT
DEPARTMENT

Economic Demography
of Eastern
and Southern Europe

BY

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OF THE OFFICE OF POPULATION RESEARCH
PRINCETON UNIVERSITY

LEAGUE OF NATIONS, GENEVA, 1945

Series of League of Nations Publications

II. ECONOMIC AND FINANCIAL

1945.II.A.9

Printed in the United States of America
by Princeton University Press, Princeton, N.J.

12/45—3,500

TABLE OF CONTENTS

Chapter	Page
I Demographic Position and Prospects	17
Present and Future Population	19
Population and Production	25
II Volume of Agricultural Production	29
Index of Agricultural Production	29
Production per Person Dependent on Agriculture	34
Production per Male Engaged in Agri- culture	39
Production per Area	42
Adjustments for Costs and Additional Output	47
III Agricultural Population and Productive Organization	55
People on the Land	55
Characteristics of Agricultural Organi- zation	77
Further Implications of the Agrarian Situation	95
IV Outlook for Economic Development	99
Agrarian Changes and Their Limits	99
Demographic Solutions	118
Industrialization	122
V Economic Transition and Social Adjustment	135
Industrialization and Its Organizational Requirements	136
The Change to an Urban, Secular Way of Life	140
Retrospect and Prospect	143
Appendix I Methods and Data Used in Comput- ing Volume of Agricultural Pro- duction	145
Calculation of "Disappearances"	145

	Page
Construction of the "Crop Unit"	154
Reliability and Limitations of the "Crop Unit" Index	169
Agricultural Population and Production	180
Bibliography of Statistical Pub- lications Used for Computing Agricultural Production	194
Appendix II Statistical Data on Agricultural Land Utilization, Population Density, and Overpopulation	196
Appendix III Survey of Land Tenure and Agri- cultural Labor Systems in East- ern and Southern Europe	210
A Classificatory Scheme for Land Tenures and Division of Labor in Agriculture	210
Land Holdings and Labor in Eastern and Southern Europe	214
Estonia	214
Latvia	218
Lithuania	221
Poland	223
Czechoslovakia	227
Hungary	231
Roumania	236
Yugoslavia	243
Bulgaria	250
Albania	252
Greece	254
Italy	257
Portugal	263
Spain	265
Bibliography on Property, Ten- ure, and Labor Relations in Eastern and Southern Euro- pean Agriculture	268

Appendix IV Tables Showing Industrial Resources and Development	Page 274
General Bibliography	281
Index	293

LIST OF TABLES

Number	<i>TEXT</i>	Page
1.	Estimated Populations of Eastern and Southern European Countries, 1938	19
2.	Population Dependent on Agriculture, European Countries, around 1930	26
3.	Indexes of Agricultural Production per Person Dependent on Agriculture, per Male Engaged in Agriculture, and per Hectare of Agricultural Land, by Countries, 1931-1935 Average	35
4.	Comparison of Indexes of Agricultural Production and Agricultural Real Income per Male Engaged in Agriculture in Certain European Countries	42
5.	Net Production in Agriculture, Fishing, and Forestry	51
6.	"Standard" and "Surplus" Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming Existing Production and European Average Per Capita Level	63
7.	"Standard" and "Surplus" Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming French Productivity per Hectare of Arable-Equivalent Agricultural Land and European Per Capita Level	71

	Page
8. Proportion of Agricultural Undertakings in Several Size-Groups and Proportion of Agricultural Land Represented in These Groups, around 1930	82
9. Proportion of Arable Land Lying Fallow in Certain European Countries, around 1935	93
10. Possible Effects of Increased Agricultural Production in View of a Growing Population	116
11. Industrial Occupation and Per Capita Manufacturing in Certain European Countries	125

APPENDIX I

Number	Page
1. Seed Requirements per Hectare, for the Period 1931-1935	147
2. Acreage of Specified Crops, Average for 1931-1935	148
3. Amount of Grains and Potatoes Used for Seed, 1931-1935	149
4. "Net" Production of Certain Cereal Crops and Potatoes as a Percentage of Gross Production	151
5. "Net" Production of Miscellaneous Agricultural Products as a Percentage of Gross Production	153
6. Price of the Crop Basket in National Currencies and the Ratio of Other Agricultural Prices to the Crop-Basket Base	157
A. Crop-Basket Price in National Currencies and Ratio of Cereal and Potato Prices to Crop-Basket Price	157
B. Ratio of Prices of Livestock Products to Crop-Basket Price	158
C. Ratio of Leguminous and Root Crop Prices to Crop-Basket Price	159

	Page
7. Wholesale Prices of Cereals and Potatoes, 1931-1935 Average, as Related to Price of Rye in Each Country	163
8. Milk Prices in Ratio to Crop-Basket Base, and Ratio between Butter and Milk Prices, 1931-1935 Average	166
9. Ratios between Slaughtered Meat and Live-weight Wholesale Prices	167
10. Relative Income from Meat and By-Products in the American Packing Industry, and Application of This Relation to European Modal Value-Ratios	167
11. European Modal Value-Ratios per Quintal for Agricultural Products	168
12. National Wholesale and Farm Crop-Basket Price Ratios as Percentages of the Selected European Modal Value-Ratios for Principal Agricultural Products	171
13. Index Values of Certain Products in England and Wales and the Netherlands Using National and "Modal" European Price Ratios as Weights	173
14. Comparison of Index Values of Agricultural Output in Italy, Using National and "Modal" Price Ratios as Weights	176
15. Comparison of Regional Weight Schedule With European "Modal" Value-Ratios	177
16. Comparison of Price Ratios: I, European Modal Value-Ratios, and II, Dollar Prices of Colin Clark	179
17. Index Value of Agricultural Production by Countries, 1931-1935 Average	181
18. Agricultural Population and Net Production by Districts	182
19. Yields per Hectare of Seven Important Crops in European Countries, 1931-1935	193

APPENDIX II

Number		Page
1.	Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930	197
2.	“Standard” and “Surplus” Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming Existing Production and French Per Capita Level	205
3.	“Standard” and “Surplus” Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming French Productivity per Hectare of Arable-Equivalent Agricultural Land and French Per Capita Level	207
4.	Population Projections, Eastern and Southern Europe, 1940 to 1970, Total Population and Ages 15-64	209

APPENDIX III

Number		Page
1.	Number and Percentage Distribution of Farm Workers of Various Classes in Estonia, 1939	217
2.	Number and Percentage Distribution of Farm Workers of Various Classes in Holdings of One Hectare and Over in Latvia, 1929	220
3.	Number and Percentage Distribution of Farm Workers of Various Classes in Holdings of One Hectare and Over in Lithuania, 1930	222
4.	Number and Percentage Distribution of Farm Workers of Various Classes in Poland, 1931	226

	Page
5. Number and Percentage Distribution of Farm Workers of Various Classes in Czechoslovakia, 1930	231
6. Number and Percentage Distribution of Farm Workers of Various Classes in Hungary, 1930	234
7. Number and Percentage Distribution of Farm Workers of Various Classes in Yugoslavia, 1931	250
8. Number and Percentage Distribution of Farm Workers of Various Classes in Bulgaria, 1934	252
9. Number and Percentage Distribution of Farm Workers of Various Classes in Italy, 1936	261
10. Number and Percentage Distribution of Farm Workers of Various Classes in Portugal, 1930	264

APPENDIX IV

Number	Page
1. Ratio of Males Gainfully Occupied in Mining and Industry to Males Gainfully Occupied in Agriculture, European Countries, around 1930	275
2. Comparison of Rank Order of Certain European Countries in Two Indexes of Industrial Development	276
3. Index of Manufacturing Production in Certain European Countries, 1936-1938	277
4. Production of Coal and Lignite in Eastern and Southern Europe, Annual Average, 1931-1935	278
5. Estimated Coal and Lignite Reserves in Eastern and Southern Europe	279

	Page
6. Production of Petroleum in Eastern and Southern Europe, Annual Average, 1931-1935	279
7. Estimated Oil Reserves in Eastern and Southern Europe, around 1940	280
8. Production of Iron Ore in Eastern and Southern Europe, Annual Average, 1931-1935	280

FIGURES

Number	Page
1. Net Reproduction Rates by Country in Europe, about 1930-1935	21
2. Absolute and Per Cent Change from 1940 to 1970 in Projected Total Population of European Countries	23
3. Absolute and Per Cent Change in Male Population in the Productive Ages, 15-64, for Countries of Europe, as Projected 1940-1955 and 1955-1970	24
4. Per Cent of Population Dependent on Agriculture in European Countries, around 1930	27
5. Agricultural Production per Person Dependent on Agriculture	36
6. Agricultural Production per Person Dependent on Agriculture, by Administrative Districts	38
7. Agricultural Production per Male Engaged in Agriculture	41
8. Index of Yields of Important Crops	43
9. Agricultural Production per Hectare of "Arable-Equivalent" Agricultural Land	45
10. Agricultural Production, Fishing, and Forestry per Hectare of Total Area	46

	Page
11. Agricultural Production, Fishing, and Forestry per Person Dependent on Agriculture	49
12. Net Production in Agriculture, Fishing, and Forestry per Person Dependent on Agriculture	52
13. Distribution of Population around 1930	57
14. Density of Agricultural Population per Square Kilometer of "Arable-Equivalent" Agricultural Land	59
15. Surplus Agricultural Population in Eastern and Southern Europe, Assuming Existing Production and European Average Per Capita Level	67
16. Surplus Agricultural Population in Eastern and Southern Europe, Assuming "Standard" Production and European Average Per Capita Level	73
17. Distribution of the Number of Agricultural Holdings by Size in Eastern and Southern Europe	84
18. Distribution of the Area of Agricultural Holdings by Size in Eastern and Southern Europe	85
19. Proportion of Land Holders (Owners and Tenants) and Landless Workers in Eastern and Southern Europe	87
20. General Index of Communications, around 1935	126

PREFACE

This volume on the Economic Demography of Eastern and Southern Europe constitutes the second of a series prepared for the League of Nations by the Office of Population Research of Princeton University. The first was published last year under the title "The Future Population of Europe and the Soviet Union."

These studies have been prepared in execution of a programme of enquiry drawn up shortly before the outbreak of war by a committee appointed by the Council of the League to study demographic problems in their economic, financial and social setting. After the outbreak of war it proved impossible to convene the committee, and for a time there were grounds for fearing that the whole undertaking would have to be postponed indefinitely. Fortunately, however, thanks to the courtesy and helpfulness of President Harold W. Dodds of Princeton University, these fears have proved groundless; for he was good enough to arrange for the University's Office of Population Research, under the direction of Professor Frank W. Notestein, to undertake an extensive programme of research and analysis for the League.

Amongst the questions covered by the programme drawn up by the League's Demographic Committee were "the problems which present themselves in countries with rapidly increasing populations."

It was felt desirable when turning to these problems to select, in the first instance at any rate, a single more or less homogeneous area in which social customs and market conditions were not as widely dissimilar as they are between one continent and another. For this reason the enquiry has been confined to eastern and south-eastern Europe, which seemed to be the most appropriate area to select, as both the economic and the social statistics are relatively satisfactory and at the same time the countries composing it, while all belonging to the same type of civilization, presented enough variety to afford a rich source of testimony. But rich as the evidence afforded by this area is, it would be a mistake to assume that it is necessarily pertinent to other parts of the world. Some of the special problems which present themselves in other still more densely populated countries are discussed in a volume now in the press, entitled "Industrialization and Trade," which, though

mainly an economic rather than a demographic study, deals with many of the issues raised by Professor W. E. Moore in the course of these pages.

The thanks of the League are due to President Dodds for arranging for the University Office of Population Research to undertake this work, to Professor Frank Notestein, the Director of this Office, and to Professor W. E. Moore and his colleagues.

A. LOVEDAY
Director of the
Economic, Financial and
Transit Department

League of Nations
Princeton, New Jersey
July, 1945.

ACKNOWLEDGMENTS

Because of the peculiar importance of agriculture in the economic organization of those parts of Europe that still have fast growing populations, the investigation summarized in this report was begun with a study of agricultural production in Europe. That study was initiated and partly completed by Dr. Adolf Kozlik while he was a member of the staff of the Office of Population Research. Dr. Kozlik left the Office for other employment before the materials were put in final form. He developed the procedures followed in Chapter II and Appendix I and supervised the collecting and processing of the statistical materials of those sections. However, the final assembly of materials, the exposition of procedures, and the interpretation of the results are the work of Dr. Moore, who succeeded Dr. Kozlik on this project. The remainder of the study was completely carried through by Dr. Moore.

Dr. Moore and I are especially appreciative of the advice and assistance given us at the various stages of the project by a number of scholars. Dr. John Richter, Dr. Lazar Volin, and Dr. Clayton Whipple of the Bureau of Foreign Agricultural Relations of the United States Department of Agriculture and Professor William Taylor Thom, Jr., of Princeton University have given helpful criticism and suggestions. Dr. Alexander Loveday, Director of the League mission to Princeton, has been an able adviser and critic at all stages of the work. The manuscript also has been read critically in whole or in part by the following persons: Mr. P. Lamartine Yates of the British Ministry of Food; Dr. A. Rosenborg, Dr. Folke Hilgerdt, and Dr. John Lindberg of the Economic, Financial and Transit Department of the League of Nations; Professor Kingsley Davis, Mr. Dudley Kirk, and Dr. Louise K. Kiser of the Office of Population Research. Mr. T. H. Chapman aided greatly in checking the final proofs. Mrs. Daphne L. Notestein has drawn the maps and charts. The secretarial and statistical staff of the Office have rendered diligent service toward the success of the investigation. To all of these we wish to express our thanks while absolving them of responsibility for errors of fact or judgment. My own particular thanks go to Dr. Moore for the energy and skill with which he picked up the threads of the project already begun and fitted it into the broader study of his own here presented.

A part of Chapter III appeared in a somewhat different form in the *Milbank Memorial Fund Quarterly* and was subsequently reprinted in *Demographic Studies of Selected Areas of Rapid Growth*, published by the Milbank Memorial Fund. Thanks are due to the Fund for permission to use these materials in the present form.

We wish also to thank the Carnegie Corporation of New York for substantial grants made to Princeton University specifically in support of the cooperative project of the Office and the League, of which this study is a part, and to the Milbank Memorial Fund, whose regular grant also helped to support this project. However, neither foundation is to be regarded as author, owner, publisher, or proprietor of this report, or is to be understood as approving by virtue of its grants any statements made or views expressed in it.

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July, 1945

CHAPTER I

DEMOGRAPHIC POSITION AND PROSPECTS

IF ONE were to draw a circle on a map of Europe, with a center in the North Sea off the English Coast and with a radius of some 800 miles, the arc dividing the European continent would approximate the boundary between the relatively prosperous industrial economies of the North and West and the relatively undeveloped and predominantly agrarian economies of the South and East. Within the area of the circle lie most of the major commercial and industrial centers of Europe, and the regions with virtually stationary populations; beyond its borders lie countries of meager wealth and growing populations.

Whether the problems of the countries of Northern and Western Europe are as great as those of the nations of the Southwestern Peninsulas and the Eastern belt (exclusive of the Soviet Union¹), obviously depends on one's point of view. But from any point of view there is little gainsaying the fundamental differences between the problems of one section and those of the other. Two of these differences are of critical importance to the present study. *Demographically*, the former countries have low birth rates and are entering a period of population stability or decline. The populations of the latter countries are still expanding rapidly, and bid fair to challenge the numerical superiority of the West. *Economically*, the Western European countries have become primarily concerned with problems of distribution for their technologically developed production, whereas the Eastern and Southern nations have attempted with unequal success to develop an adequate volume of products. Other regional differences, such as unequal political stability and ethnic homogeneity, are relevant for present purposes only as they bear on the economic and demographic problems.

These differences provide the basis for selection of a group of countries for analysis in terms of their prewar difficulties and postwar prospects. For reasons both of geography and of eco-

¹ The demographic situation of the Soviet Union is dealt with in another study in this series. (See Frank Lorimer, *The Population of the Soviet Union: History and Prospects*.)

conomic situation, the countries with which this study is primarily concerned comprise two main groups: (1) Eastern and South-eastern Europe, exclusive of the USSR, and (2) the Southwestern Peninsulas, including Italy, Portugal, and Spain. Naturally, the differences in economic and social situation within each of these groups are substantial, yet not so impressive as the extensive similarities.

The first group of countries outside the hypothetical circle form a clear-cut belt from north to south, lying between the industrial West and the rapidly industrializing USSR. Almost all of them are either "succession states" established by the peace treaties following the First World War, or states whose territorial extension was profoundly modified by the postwar settlements. Roughly from north to south they include: Estonia, Latvia, Lithuania, Poland, Czechoslovakia, Hungary, Roumania, Yugoslavia, Bulgaria, Albania, and Greece. Although the two northern Baltic states (Estonia and Latvia) fall within the Scandinavian sphere in some respects, their inclusion in this survey is justified by their position as small succession states, faced in the interwar period with major problems of economic adjustment. Finland, the northernmost country of the north-south marginal belt, was not a succession state in the same sense. Considerations of the same order justify the inclusion of Czechoslovakia, which would be split by the imaginary circle referred to above, as indeed it is in economic fact. As will be noted later, its four major divisions from west to east illustrate perfectly the transition from western to eastern economies.

The Southwestern Peninsulas form an area intimately involved in the early period of Western European commercial expansion, but now lying at the "fringe" of Western European economy. In comparison with the countries to the north they have been slow to industrialize, predominantly conservative in tradition, and poor either in resources or in the use made of resources. That the imaginary dividing line is not wholly arbitrary is again attested by the separation of northern continental Italy from the peninsula proper, for this division corresponds to actual economic distinctions. The perfect regularity of the circle is, however, more arbitrary in its exclusion of the Catalonian industrial region of Spain.

Present and Future Population

The population of the countries of Eastern and Southern Europe within their interwar boundaries represents just less than half (47 per cent) of the total population of Europe exclusive of the Soviet Union. As shown by Table 1, in 1938 some 110 million people were living in the eleven countries of Eastern Europe, and over 76 million in the three countries of Southern

TABLE 1
Estimated Populations of Eastern and Southern European Countries, 1938¹

Country	Estimated Population in Thousands
Estonia	1,134
Latvia	1,995
Lithuania	2,575
Poland	35,090
Czechoslovakia	10,500
Hungary	9,078
Roumania	19,852
Bulgaria	6,273
Yugoslavia	15,490
Greece	7,108
Albania	1,057
<i>Total Eastern Europe</i>	110,152
Italy	43,430
Portugal	7,460
Spain	25,600
<i>Total Southern Europe</i>	76,490

¹ From *Statistical Year-Book of the League of Nations, 1939-40*, Table II, pp. 17-18.

Europe. The former figure is well over one-fourth of the total population of Europe outside the USSR, and the latter figure an additional one-fifth.² These proportions of the total European

² The population estimates as shown in Table 1 may be compared with the estimated total European population (exclusive of the USSR) of 400,100,000 in 1938. The 110,152,000 of Eastern Europe thus represents 27.53 per cent of the total, and the 76,490,000 of Southern Europe 19.12 per cent of the total.

population have certainly been rising at least since 1920, thus reversing an earlier trend of more rapid population growth in Northern and Western Europe.*

The economic problems already created by past growth and those that will be created by the prospective continuation of the growth in the future provide the basis for the present study. The general pattern of demographic change in Europe is clear. A period of very rapid growth that started approximately with the industrial revolution in Northwestern Europe, and is now nearing an end in that region, has appeared more recently in the areas to the south and east. With minor exceptions, the onset of rapid growth has been most recent in those areas most remote from the center of diffusion. The characteristic feature of the change in rates of population growth, and the one that accounts for its occasional designation as the "vital revolution," is a rapid decline of death rates followed after some considerable interval by a decline of birth rates. The intervening period gives rise to unprecedented growth in successive populations as they become affected by the commercial, agricultural, and industrial influence of the West.

Net Reproduction Rates. In so far as the vital revolution can be generalized, and it appears amenable to such generalization at least within Europe, the relative stage in the cycle of any given area at any given time may be judged by the growth rates then current. One refined measure of growth that takes into account differences in age and sex distribution in the population is the *net reproduction rate*. "This rate indicates how rapidly the population would ultimately grow if the risks of death and the fertility of each age group remained unchanged and there were no migration."⁴ A rate of 1.00 would ultimately yield a stationary population. Rates above or below 1.00 would yield expanding or declining populations. The amount of the departure from 1.00 indicates the percentage increase or decrease per generation under the assumptions noted. As shown in Figure 1, most of the countries of Northwestern Europe during the late interwar period did

* See Frank W. Notestein, Irene B. Taeuber, Dudley Kirk, Ansley J. Coale, and Louise K. Kiser, *The Future Population of Europe and the Soviet Union; Population Projections 1940-1970* (Geneva: League of Nations, 1944), pp. 44-71. This first volume in the series of which the present study is a part constitutes the principal source for the demographic background summarized in these pages.

⁴ *Ibid.*, p. 17.

not have sufficient births to continue the replacement of their populations under existing mortality conditions. While most of the populations were actually growing, aside from migration, their net reproduction rates indicate that they were doing so only by reason of an unusually heavy concentration of numbers in the reproductive years, and that continued growth can not be assumed after the concentration is removed through aging and death.

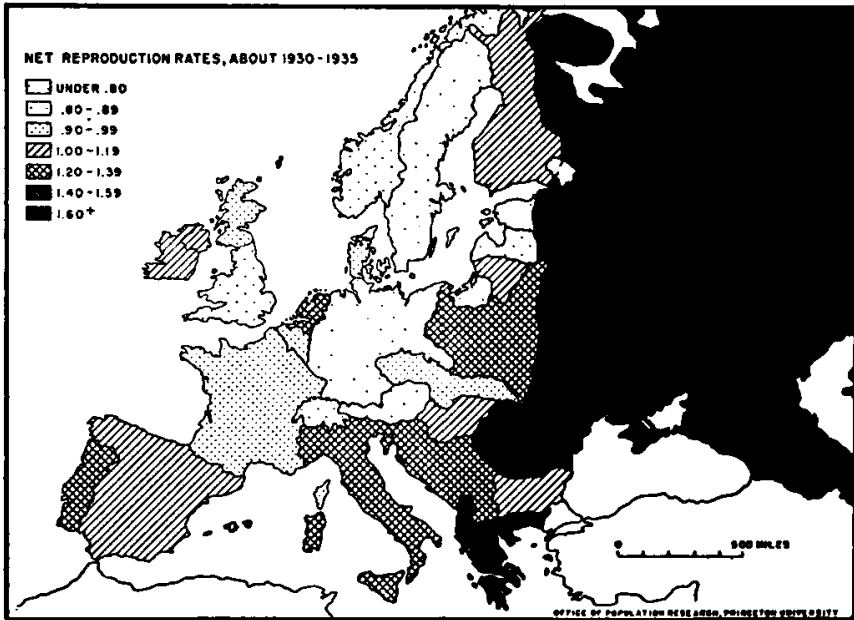


Figure 1. Net Reproduction Rates by Country in Europe, about 1930-1935 (Reproduced by permission from Frank W. Notestein and Others, *The Future Population of Europe and the Soviet Union* [Geneva: League of Nations, 1944], Fig. 1, p. 18).

On the other hand, with few exceptions the countries of Eastern and Southern Europe show evidence of continued potential growth implicit in the birth and death rates of the late interwar period.

Prospects for Growth. Although net reproduction rates allow significant comparisons between the growth patterns of different areas at a given time, and have a precisely defined predictive value under the assumption of continuance of existing fertility and mortality characteristics, they neglect precisely the changing pattern of birth and death rates implicit in the vital revolution. Under the dual assumption that the future course of vital rates

in Europe "will represent orderly developments of those in the interwar period," and that no migration will take place over the 1937 national boundaries, a previous study⁵ presents population projections for the countries of interwar Europe to the year 1970. The procedure involves projecting age-specific birth and death rates on the basis of past European experience, and applying these rates to the population of each country at the time of the base-year census and at successive five-year intervals after 1940. Thus the size and composition of the population at the census year provides the initial base to which the generalized rates are applied; the projected population at the end of each five-year interval then becomes in turn the base to which projected vital rates for the succeeding period are applied. In this way it is possible, under the assumptions noted, to project not only the total size of the population in each area but also its age and sex structure.

The significance of these projections for the present study is the regional differences in future population growth. These differences in potential growth are great enough to compensate for the assumption that reproductive rates will decline most rapidly where they are highest. As indicated in Figure 2, the countries of Northwestern and Central Europe show changes in the thirty-year period 1940-1970 ranging from substantial losses to small gains (with the exception of the considerable projected gain in the Netherlands).⁶ On the other hand, most of the countries here classified as Eastern and Southern show indications of large increases by 1970 relative to their 1940 populations. These projected populations will certainly not be the exact populations at any given future date; yet the gross relationships implicit in the projections will almost certainly hold.

The regional differences are even more marked in the projected size of the potential male labor force. As shown in Figure 3, all

⁵ *Ibid.* See especially pp. 20-43 and Appendix I for exposition of the method employed. War losses and future international migration are left out of account in the population projections. Their significance is discussed with reference to the present study in Chapters III and IV.

⁶ Note that four countries—Estonia, Latvia, Czechoslovakia, and Hungary—included with Eastern Europe in the present study are grouped with the countries of Northwestern and Central Europe in Figure 2. Of these, only Hungary has a projected population increase after 1970. The reason for their discussion in this study is the similarity of some of their economic problems to those of neighboring countries showing greater potential population growth.

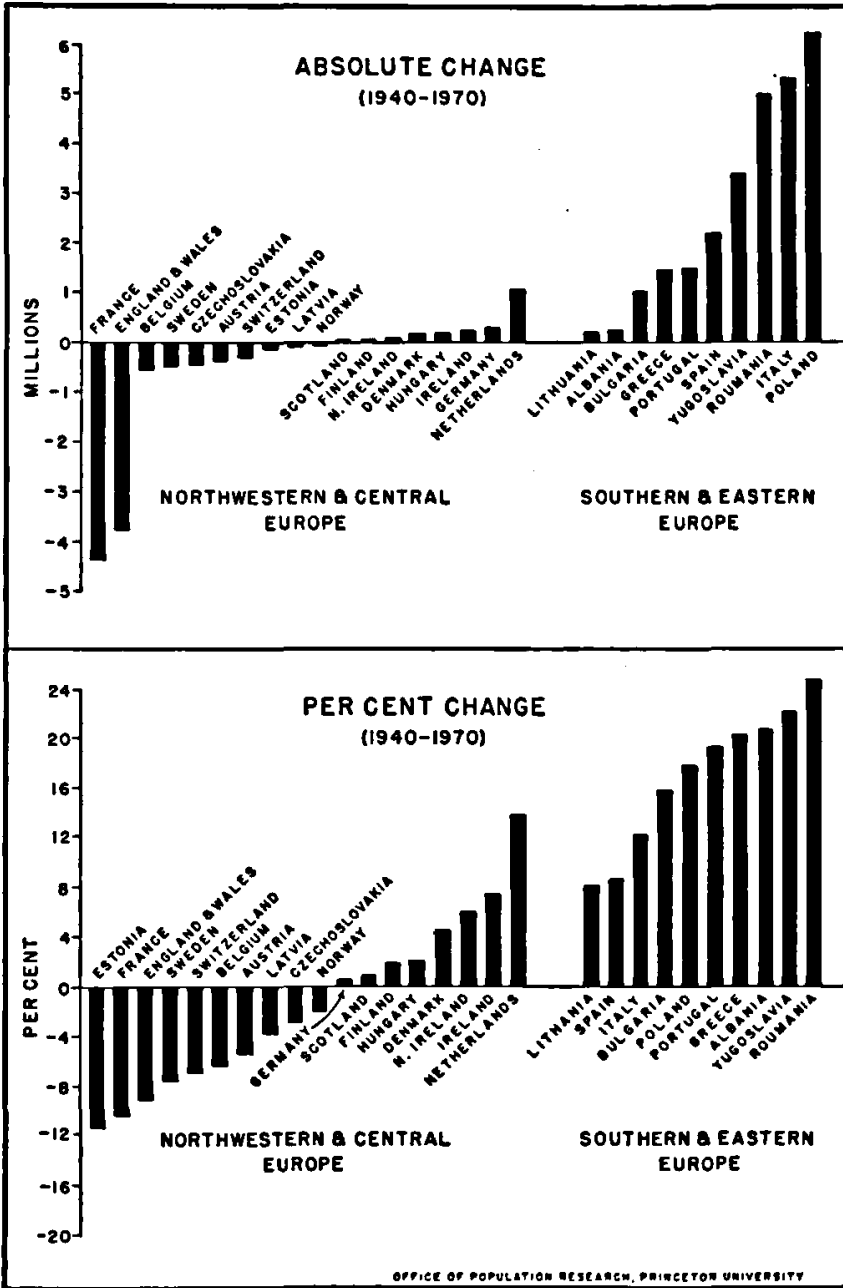


Figure 2. Absolute and Per Cent Change from 1940 to 1970 in Projected Total Population of European Countries (Reproduced by permission from Frank W. Notestein and Others, *The Future Population of Europe and the Soviet Union* [Geneva: League of Nations, 1944], Fig. 19, p. 59).

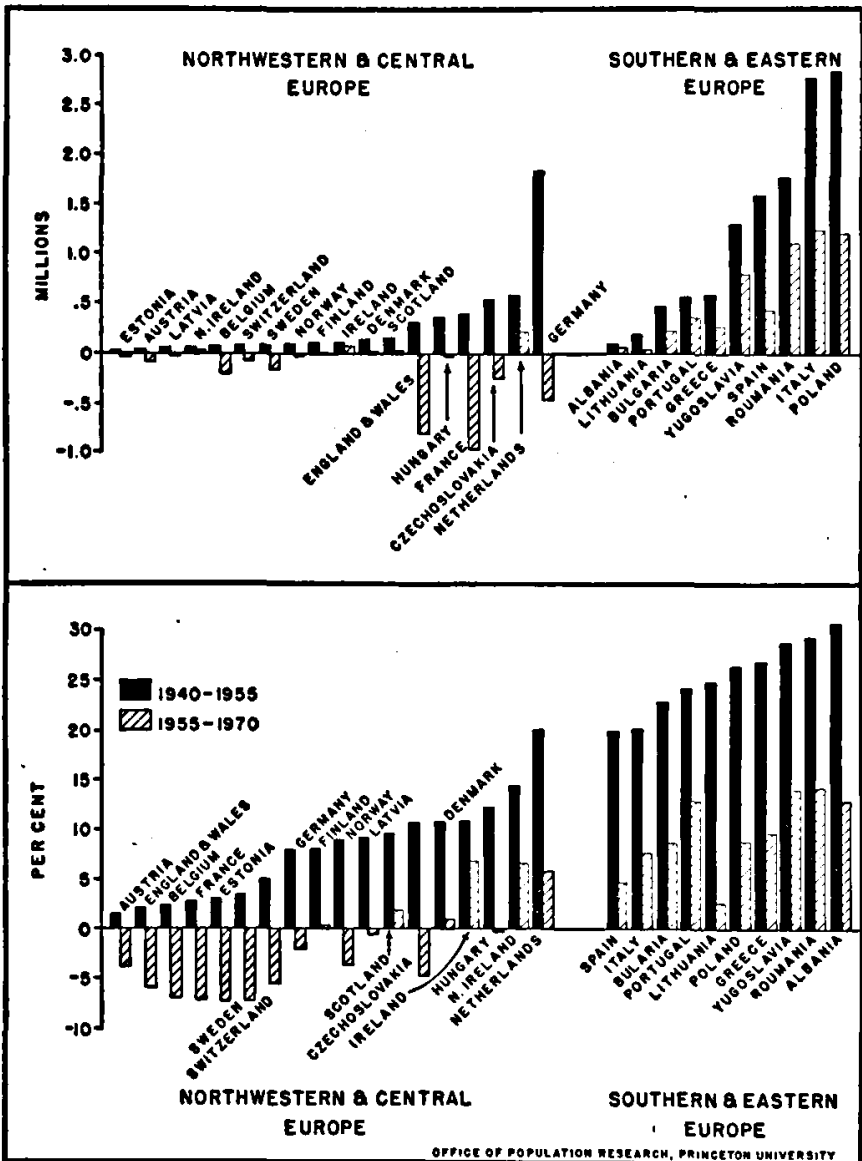


Figure 8. Absolute and Per Cent Change in Male Population in the Productive Ages, 15-64, for Countries of Europe, as Projected 1940-1955 and 1955-1970 (Reproduced by permission from Frank W. Notestein and Others, *The Future Population of Europe and the Soviet Union* [Geneva: League of Nations, 1944], Fig. 84, p. 122).

of the European countries will have growing labor forces, neglecting war losses, in the first postwar period (to 1955), with relative growth greater in the East and South than in the West. In the second period (1955-1970) the projections indicate declining labor potentials in most of the Northwestern and Central European countries, while in most of the countries of Eastern and Southern Europe it will still be necessary to find increasing avenues of economic opportunity if the projected trends develop. Those trends seem to require economic expansion precisely in those areas where such expansion has been least evident in the recent past.

Population Dependent on Agriculture. The foregoing observation is given added point by the fact that the regions of potentially rapid growth in Europe exclusive of the Soviet Union are in general much more heavily agricultural in economic structure than are the regions approaching population stability and decline. The proportions of the total population dependent on agriculture (see Table 2 and Figure 4) indicate that in all of the Eastern and Southern European countries, excepting only Czechoslovakia, more than 40 per cent of the population is dependent on agriculture. On the other hand, of those European countries falling outside the range of this study only the Soviet Union, Finland, and Ireland are so heavily agricultural. Eastern and Southern Europe as a whole may be characterized therefore as predominantly agrarian, although the individual countries are unequally dependent on agricultural production.

Population and Production

At the end of the Second World War national and international government agencies are now faced with reconstruction tasks that will make all previous postwar rehabilitation problems seem simple by comparison. Moreover, no country could desire to return to the disastrous economic conditions of the second interwar decade. The peoples of well-to-do areas want not only further opportunities for economic development but also the world security necessary to protect their gains. Those who live in undeveloped areas want an even greater economic development sufficient to overcome their poverty in comparison with other regions. This is markedly true

† See previous note for differences in regional classification in the present study.

TABLE 2

Population Dependent on Agriculture, European Countries,
around 1930¹

(000's omitted)

Country ² and Date	Popula- tion	Popula- tion De- pendent on Agricul- ture	Per Cent
Albania, 1930	1,003	800	80
Yugoslavia, 1931	13,934	10,629	76
Bulgaria, 1926	5,479	4,088	75
Roumania, 1930	18,057	13,069	72
Lithuania (including Memel) c. 1930	2,367	1,657	70
Poland, 1931	32,107	19,347	60
Finland, 1930	3,562	2,015	57
Estonia, 1934	1,126	626	56
Latvia, 1930	1,900	1,036	55
Ireland, 1926	2,972	1,561	53
Hungary, 1930	8,688	4,472	51
Spain, 1930	23,564	11,864	50
Portugal, 1930	6,360	2,954	46
Greece, 1928	6,205	2,829	46
Italy, 1931	41,177	17,953	44
Czechoslovakia, 1930	14,730	4,812	33
Sweden, 1930	6,142	1,906	31
Denmark, 1930	3,551	1,061	30
Northern Ireland, 1926	1,257	372	30
France, 1931	41,228	11,890	29
Luxembourg, c. 1930	300	85	28
Norway, 1930	2,814	762	27
Austria, 1934	6,760	1,772	26
Switzerland, 1930	4,066	901	22
Germany, 1933	66,029	13,297	20
Netherlands, 1930	7,936	1,436	18
Belgium, 1930	8,092	1,190	15
Scotland, 1931	4,843	387	8
England and Wales, 1931	39,952	2,117	5

¹ The figures given represent in the main the official data for the several countries at the years indicated. In some instances the official data give only those gainfully occupied in agriculture. In these cases the percentages of those dependent on agriculture have been estimated from the general relation between the ratios, based upon evidence from the countries where both are known. These percentages were then applied to the total population to yield the population dependent on agriculture expressed as absolute numbers (column 2).

² Arranged in order of magnitude of last column.

in Europe, where economic development is likely to be regarded as an end in itself, but may also be a necessary condition for the perpetuation of peace.

Despite Europe's historical role as the center of modern indus-

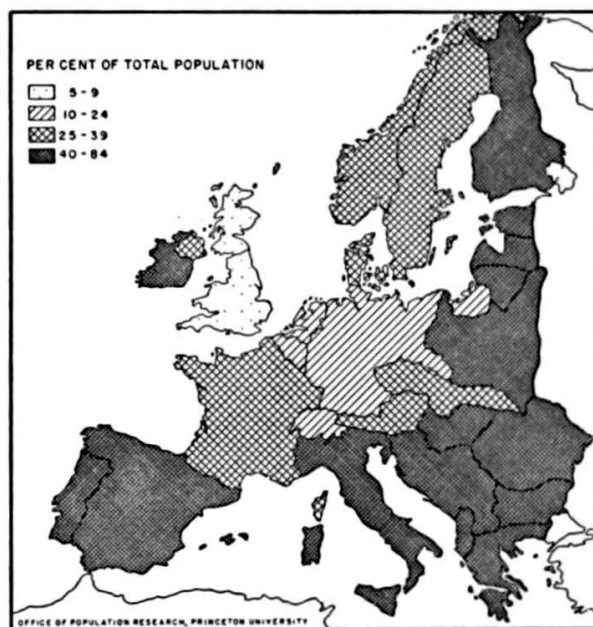


Figure 4. Per Cent of Population Dependent on Agriculture in European Countries, around 1930

trialism, the continent retains remarkably divergent economic systems. The industrial expansion and complex market organization characteristic of Northwestern Europe have made slight inroads in the belt of agrarian states in Eastern and Southern Europe. It is the inevitable postwar problem of effecting not only reconstruction but renewed and accelerated economic development in the agrarian regions of the European continent that prompts consideration of their economic and demographic position.

The essential question posed by this study is the ability of the countries of Eastern and Southern Europe to support growing populations at a "Western" level of living. This necessarily assumes reasonably common standards or aspirations throughout Europe. Thus the critic may inquire by what right the absence of manufactured products is a problem of the Roumanian peasant if

that peasant has no knowledge of or interest in any increase in material standards other than the size of his farm or the yield of his crops. Historically, and even contemporaneously, the question has considerable merit. Unquestionably the hopes of Eastern Europe differ not only in degree but also to a certain extent in kind from those prevailing in the urban and industrial West. Yet the eastward spread of Western ideals has been steady, and was given added impetus by the upheavals of the First World War and has doubtless been further accelerated by the Second World War.

It is therefore no longer an academic exercise in "welfare economics" to point to the relative poverty prevailing in Eastern and Southern Europe. The problem is a concrete one because it is regarded as such by a growing proportion of the populations of those regions. It seems safe to assert that whatever political leadership emerges in these areas after the Second World War, that leadership must perforce face and attempt to solve the problems of growing populations with rising aspirations and with existing means of support that appear somewhat less than adequate to meet present and future demands.

The present chapter has summarized briefly the demographic background of this problem. Chapter II presents materials showing the low per capita productivity of agriculture precisely in the regions where the burden of dependency on agriculture is greatest. The relation of agricultural population to agrarian economy is examined in greater detail in Chapter III, especially with reference to "surplus" rural population, the institutional and technological features of agricultural production, and some of the broader implications of inefficient agricultural organization. The chapter thus attempts to indicate why the productivity of agriculture is low in the countries of Eastern and Southern Europe. Chapter IV examines the chief possibilities for changes in the demographic and economic situation as outlined in the first three chapters. Since none of the economies considered is purely agricultural, attention is given in that chapter to commercial and industrial developments and prospects. Finally, Chapter V turns to a brief examination of the political and institutional preconditions for various possible changes in the economic order, and, in turn, the significance of these possible changes for the demographic situation.

CHAPTER II

VOLUME OF AGRICULTURAL PRODUCTION

THE magnitude of agricultural production always has a bearing on the demographic position of a country or region. The relationship arises in part from the fact that a substantial proportion of the population is directly or indirectly dependent on such production for a livelihood, and in part from the fact that agricultural production implies ways of life that themselves influence the forces of population change. Within Europe the relationship is strongest in the South and East, where, as was shown in Chapter I, a large proportion of the population is dependent on agriculture. Analysis of the economic demography of these regions requires, as a first step, an appraisal of the relative volume of agricultural production by means that permit international comparison in common units. The appraisal is presented in this Chapter, supplemented by Appendix I.

Index of Agricultural Production

The basic data available for the computation of agricultural output are quantities of products and national prices. In order to eliminate random variations due to conditions in a particular year, both production and price data are computed as annual averages for the five-year period 1931-1935, the last such period for which anything like complete information is available.

Construction of the Index. To determine that part of the annual agricultural production available for food and industrial consumption, various "disappearances" (including seed and livestock feed) are computed and subtracted from the gross volume.¹ This yields the *net* quantity of agricultural products and thus excludes that part of the total which is used for further production in agriculture. It includes both crops and livestock products but avoids the "double counting" of grains and other products used as feed.

The net quantity of agricultural products remaining after subtraction of re-used products represents output in units of weight.

¹ The methods and data used in computing the volume of agricultural production are more fully discussed in Appendix I, where also are noted the limitations inherent in both.

To obtain a sum representing "agricultural production" from this array of quantities (by weight) of separate commodities, some common denominator is needed by which quintals of wheat, maize, milk, honey, and so on can be converted into comparable units. Unfortunately, from the point of view of statistical manipulation, it is not economically meaningful to add quintals of potatoes to quintals of wine on a one to one basis. In principle, this summing of quantities of commodities was done by attaching a value per quintal to each commodity. In effect, therefore, the total of "agricultural production" is the sum of so many quintals of wine at so much per quintal, and so many quintals of beef at so much per quintal, and so on, through the entire list of agricultural products. It is to be noted that a single value per quintal of each commodity was used throughout the study for all regions. Agricultural production is, therefore, defined for present purposes as the sum of weighted physical amounts of commodities produced, the weights being uniform throughout and obtained in the manner described below.

Given complete information as to prices and a situation of free and orderly currency exchanges, the summing of commodities would offer no substantial problem. Local prices could have been used and the resulting values converted to gold equivalents. In fact neither complete information nor free exchanges existed in the period under consideration. It was impossible, therefore, to arrive at the direct monetary value of production on terms that permit meaningful international comparison. Instead the quantities of commodities produced were weighted by a uniform set of value ratios. To obtain these value ratios the following steps were taken:

1. A crop basket comprising a quintal of the most important European crops (five cereals and potatoes) was priced in the currency of each country.
2. A quintal of each domestically produced commodity was priced in each country for which price quotations could be secured.
3. The value of a quintal of each commodity in each country was then expressed in terms of the value of the crop basket in the same country. Thus a quintal of peas was worth 2.31 crop baskets in Germany, 1.88 in Roumania, and so on for all countries.
4. From the array of values in terms of crop baskets of each

commodity such as peas a typical or modal value was selected. This value was called the typical value in Crop Units. Thus a quintal of peas in every country was assigned the value of 2.00 Crop Units wherever peas entered into the computation.

The index value of each commodity was then applied as a weight to the physical volume of production of that commodity in a given area to give the total value of the amount produced. The sum of the index values of all the products of a specified region was taken as the measure of that region's total production.

In brief, therefore, the index of agricultural production is one of physical output in which the total quantity of each commodity is given a standard weight that reflects the typical or modal exchange ratio between that commodity and the crop basket.

Limitations of the Method. In order to avoid misinterpretation of the data summarized in this chapter and presented more fully in Appendix I, certain observations are pertinent:

1. The volume of agricultural production cannot be construed as equivalent to the income of the agricultural population for several reasons:

(a) Although price relationships among agricultural products are used in constructing a schedule of weights, the very uniformity of the weights yields results that are somewhat arbitrary relative to the price structure in any given area.

(b) Even were the index values of agricultural production exactly representative of exchange ratios among agricultural products in every country or province, the "real income" of the agriculturalist would still depend on exchange ratios between agricultural products sold and goods and services bought.

(c) The net quantity of agricultural production as defined above with reference to crop and livestock production does not constitute "net production" in an economic sense, since most costs of production are not deducted from the basic index values as computed for small areas. The procedure here adopted excludes shrinkage losses and seed uses of crops, and avoids "double counting" by excluding feed domestically produced. Imported feed is only deducted to the extent that it is matched by domestic production, since all deductions have been applied to the domestic crop up to the limit of domestic production. Additional feed imports,

which are substantial in such countries as Denmark, are not deducted although the value of livestock products is included. These imports, together with other production costs such as commercial fertilizer, farm machinery, and so on, represent charges against the product that should be deducted to give an accurate picture of net production in the economic sense. It is impossible to determine these costs by small districts, where differences owing to type of agriculture and the like may be rather large. However, it is possible to estimate national differences in costs of production, as explained below, and these differences are introduced as an adjustment of the basic index values. Failing to take costs into account in the CU-value of production serves to increase the differences in productivity, since the costs are greater in countries with a highly rationalized agricultural system.

(d) Agricultural production does not necessarily represent the entire income of the agricultural population. Although an attempt has been made to exclude from the population data those people whose principal occupation is fishing or forestry, and especially those who are principally engaged in industry or trade but secondarily in part-time agriculture, the separation is necessarily incomplete. It has proved impossible to make any adjustment for income from homework or from a secondary occupation in industry. However, it has been possible to include the income from fishing and forestry on a national basis, as noted below. Neither type of production can be reliably allocated by districts within countries. In the case of fishing, a proportional distribution of the total product by districts, relative to the value of other products or the size of the agricultural population, would obviously undervalue the importance of fishing in coastal districts, and conversely. In the case of forestry, an allocation by area of forests, for example, would neglect significant differences in quality, availability of transportation and markets, and so on. The value of these products is therefore excluded from the data by districts, but subsequently added to the national figures as a further adjustment. The same population figures are used in both cases.

2. For most of the countries of Europe the data available unfortunately do not allow reliable adjustments for quality differences. Since standard index values per quintal of the various

products have been selected, it is obvious that a standard quality is implied. In the absence of standardized quality distinctions, and in the virtual absence of any data on the relative amounts of various qualities of a given crop produced, only partial adjustments have been possible. This difficulty is most marked in the case of livestock products. It should be observed that the countries with poorly developed agriculture not only produce smaller quantities relatively to labor or area used, but also produce agricultural goods of lower quality. Were quality differences fully represented, therefore, the distinction between well-to-do and poor regions would be further accentuated.

3. A few minor crops are not fully represented in production statistics, and the bases for arriving at reasonable estimates do not exist. This is notably true of garden produce for home consumption. Although we have attempted to include such crops, and those actually grown for the market are probably not unduly under-represented, it is certain that some kitchen garden produce has not been included. In general, were it possible to include these crops the effect would be to increase rather than decrease the differences between rich and poor agricultural areas. Flower and bulb production has not been included except in the case of the Netherlands—the only country where the importance of this type of production is considerable.

In summary, of the limitations noted, some clearly tend to an understatement of actual differences in agricultural output; this is the case with reference to the partial neglect of small garden produce and the partial neglect of quality differences. Other limitations tend equally clearly to overstate the differences; this is especially noteworthy in the neglect of various costs of production in the data for small districts. Still other limitations would have mixed and somewhat uncertain effects on the results were it possible to make the necessary adjustments; this is especially the case with various additional sources of income of the agricultural population, for which only partial adjustment can be made on a national basis.

The total agricultural output by districts or countries obviously does not admit of ready and meaningful comparison unless related to population engaged in agriculture, agricultural area, or

some similar base. Since the immediate and primary concern of the present discussion is with the well-being of the agricultural population, two bases of comparison are of especial interest: the volume of agricultural production per capita dependent on agriculture as an approximate indication of the income of the agricultural population, and the volume of production per male engaged in agriculture as an expression of labor productivity. However, a comparison is also made of productivity per area of agricultural land as an indication of levels of land utilization.

Production per Person Dependent on Agriculture

Although the value of agricultural production per person dependent on agriculture is not a complete indication of real income (for reasons previously noted) it is in general a rough representation of that income. By dividing the index of production (expressed in CU) by the population dependent on agriculture, comparable per capita values are derived.³ In this as in all the other comparisons on a per capita basis the observed data are expressed as percentages of the European average (excluding Turkey and the USSR),⁴ or, in other words, as index numbers, European average = 100.

The results of this calculation are presented on a national basis in the first two columns of Table 3, and mapped in Figure 5. Ref-

³ The population data are derived from census returns, supplemented where necessary by estimates made by the Office of Population Research. Some countries give population dependent on agriculture, others those gainfully occupied. Since for present purposes a complete series of both types was desired, missing figures have been estimated on the basis of relationships between the two where both are available.

⁴ The exclusion of Turkey and the USSR from the European average is based on several considerations. Both nations are only partly European powers by conventional geographical definition, and a satisfactory separation of data as applying to European and Asiatic areas is impossible. The agricultural production and other data are very scanty for both countries. In the case of Russia adequate data are only available for 1924-1926, the period before extensive collectivization. This material is to be interpreted as being only very roughly representative of the relative position of the Soviet Union at the period covered for the rest of Europe, but as showing the problems and to a certain extent the areas which were of concern in subsequent Russian policy. Finally, the inclusion of the great bulk of Russian production on a low per capita level would have unduly depressed the European average and thus unduly accentuated the favorable position of Northwestern Europe. We have therefore included the data for the USSR (and for Turkey where available) and computed their relative rank in ratio to the average of the rest of Europe. Since the Turkish data are missing from many of the tables, Turkey is excluded from all of the maps, although the USSR is included on some of the illustrations on the general grounds that its relative position underwent no *extreme* change by 1931-1935.

TABLE 3

Indexes of Agricultural Production per Person Dependent on Agriculture, per Male Engaged in Agriculture, and per Hectare of Agricultural Land, by Countries, 1931-1935 Average¹

Countries	Per Person Dependent on Agriculture		Per Male Engaged in Agriculture		Per Hectare of Agricultural Land ²	
	CU	Europe = 100	CU	Europe = 100	CU	Europe = 100
<i>Northern Europe</i>						
Denmark	152	354	411	323	57	236
Finland	28	65	89	70	22	92
Norway	50	116	141	111	42	173
Sweden	62	146	171	134	28	118
<i>Eastern Europe</i>						
Estonia	43	99	131	103	17	69
Latvia	48	111	131	103	19	80
Lithuania	31	73	45	74	17	69
Poland	21	49	72	56	18	75
<i>Central Europe</i>						
Austria	58	134	163	128	37	153
Belgium	95	220	230	181	63	283
Czechoslovakia	45	105	146	115	31	129
France	75	174	204	160	26	109
Germany	84	195	244	191	44	181
Luxembourg	54	126	131	103	35	147
Netherlands	114	259	302	237	91	377
Switzerland	84	194	213	167	89	371
<i>Balkans</i>						
Albania	10	22	32	25	17	70
Bulgaria	20	47	70	55	19	80
Greece	21	50	61	48	18	77
Hungary	33	78	96	75	21	87
Roumania	21	48	67	53	17	69
Turkey	15	35	50	39	.	.
Yugoslavia	17	38	55	43	17	69
<i>Southern Europe</i>						
Italy	31	73	87	68	17	69
Portugal	23	53	67	53	11	47
Spain	38	88	120	94	13	53
<i>British Isles</i>						
Ireland	40	93	114	89	41	171
United Kingdom England & Wales	137	319	306	240	46	193
Scotland	135	314	325	255	33	137
N. Ireland	48	112	134	105	28	118
USSR	17	39	53	41	.	.
Europe excl. USSR and Turkey	43	100	127	100	24	100

¹ The CU and index number values have been rounded for presentation, although computations were made on the basis of one decimal place for the national data, and the following European CU averages: per person dependent on agriculture, 42.9318; per male engaged in agriculture, 127.4237; per hectare of agricultural land, 24.12.

² Areas under various forms of land utilization converted to "arable-equivalents," as explained in the following chapter.

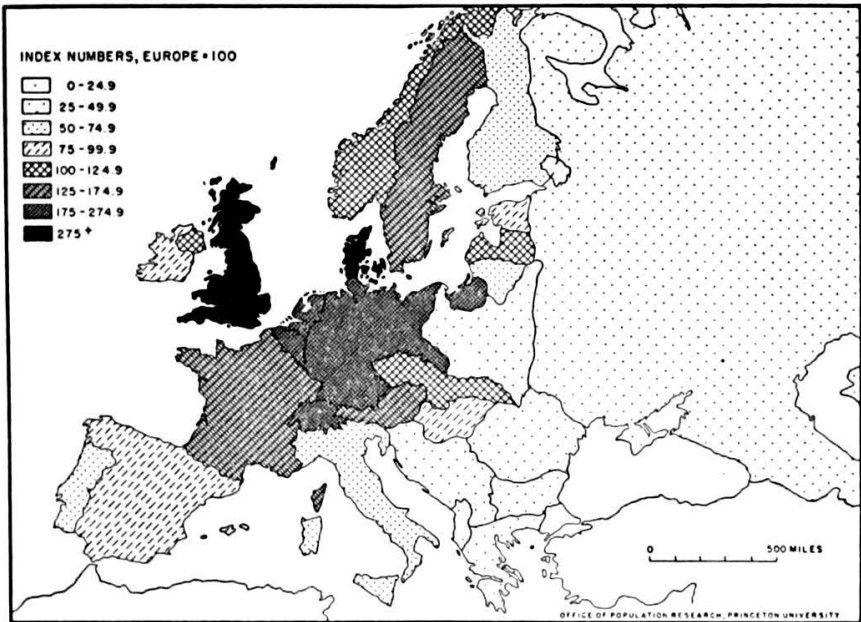


Figure 5. Agricultural Production per Person Dependent on Agriculture

erence to the table indicates the following grouping of countries in terms of ranges of index numbers.⁴

Over 275: Denmark, England and Wales, and Scotland.

175-274.9: Netherlands, Belgium, Germany, and Switzerland.

125-174.9: France, Sweden, Austria, and Luxembourg.

100-124.9: Norway, Northern Ireland, Latvia, and Czechoslovakia.

75- 99.9: Estonia, Ireland, Spain, and Hungary.

50- 74.9: Italy, Lithuania, Finland, and Portugal.

25- 49.9: Greece, Poland, Roumania, Bulgaria, USSR, and Yugoslavia.

0- 24.9: Albania.

The foregoing list and its illustration in Figure 5 point clearly to a general pattern of widening rings (or concentric arcs) cen-

⁴ The discussion of the countries in terms of rather broad groups serves to minimize minor numerical differences that fall well within reasonable limits of error. For the same reason the results presented in the tables have been rounded to whole numbers. The class intervals chosen for the graphical presentation in the maps have been selected with a view to creating as few essentially artificial distinctions as possible.

tering around the North Sea, with decreasing productivity in successive rings away from that center.⁵ This pattern emerges even more clearly if comparison is made with the detailed map by districts (Figure 6).⁶ Thus, it may be noted that parts of Belgium and Netherlands and a few small districts in France and Germany are in the highest group; the second ring includes the southern tip of Sweden, most of north-central and western Germany, north-eastern France, and parts of the low countries; most of central France, south-central Germany, northern Austria, Bohemian Czechoslovakia, and the southeastern coast of Sweden are in the third ring. A similar and fairly orderly progression is evident to the South and East. The pattern transcends national boundaries, and shows, rather, a gradation of agricultural regions.

Although exact numerical validity cannot be claimed for the

⁵ This general structure was pointed out with reference to agriculture in a recent publication of the League of Nations. See *Agricultural Production in Continental Europe during the 1914-1918 War and the Reconstruction Period* (Geneva: 1943). See also P. Lamartine Yates and D. Warriner, *Food and Farming in Post-War Europe* (London: Oxford University Press, 1943), especially maps on p. 89; *Economic Development in S. E. Europe* (London: PEP [Political and Economic Planning], 1945), Chap. II and Appendix tables on pp. 137-141. The ring structure is confirmed by many other bases of international comparison, as will be evident in a forthcoming volume by Dudley Kirk on the population of interwar Europe.

Certain reservations for the national data should be indicated, especially in the case of Spain. Present data indicate a much higher per capita production in Spain than in Portugal, and even higher than in Italy. Various other data available for these three countries would indicate a rank for Spain below Italy, and not much higher than Portugal. This seeming overvaluation of Spanish production appears consistently in the national comparisons. It may be partly due to an underestimation of feed disappearances of crops, and partly to exaggerated production statistics. Other possibly questionable results, such as the low position of Finland in comparison with the Baltic States, are minor, and may be more accurate (in view of climatic and other relevant conditions) than would appear at first glance. Reference should be made to Appendix I for a discussion of possible errors in the national data deriving from the index procedure here used.

The consistently high positions of England and Wales, as well as of Belgium and Netherlands, are no doubt in some measure due to the selection of land deriving from the small proportions of agriculturalists in the population. A sample comparison of results for England and Wales and the Netherlands (see Appendix I, Table 13), using national price ratios, does not indicate any over-valuation of the CU-index.

⁶ The data by districts, including population figures, the value of production in CU, and index numbers for production relative to agricultural population and males gainfully occupied, are given in Appendix I, Table 18.

The grouping of countries into general regions, followed uniformly in the general comparative tables, requires no comment except for the group called "Central Europe." The Low Countries and France are included in this group, although these countries are not generally considered as Central European, and can only be considered so geographically if their position relative to the British Isles is taken into account. They are here included on the basis of their similarity in general economic structure. The grouping itself is therefore somewhat less arbitrary than the designation "Central."

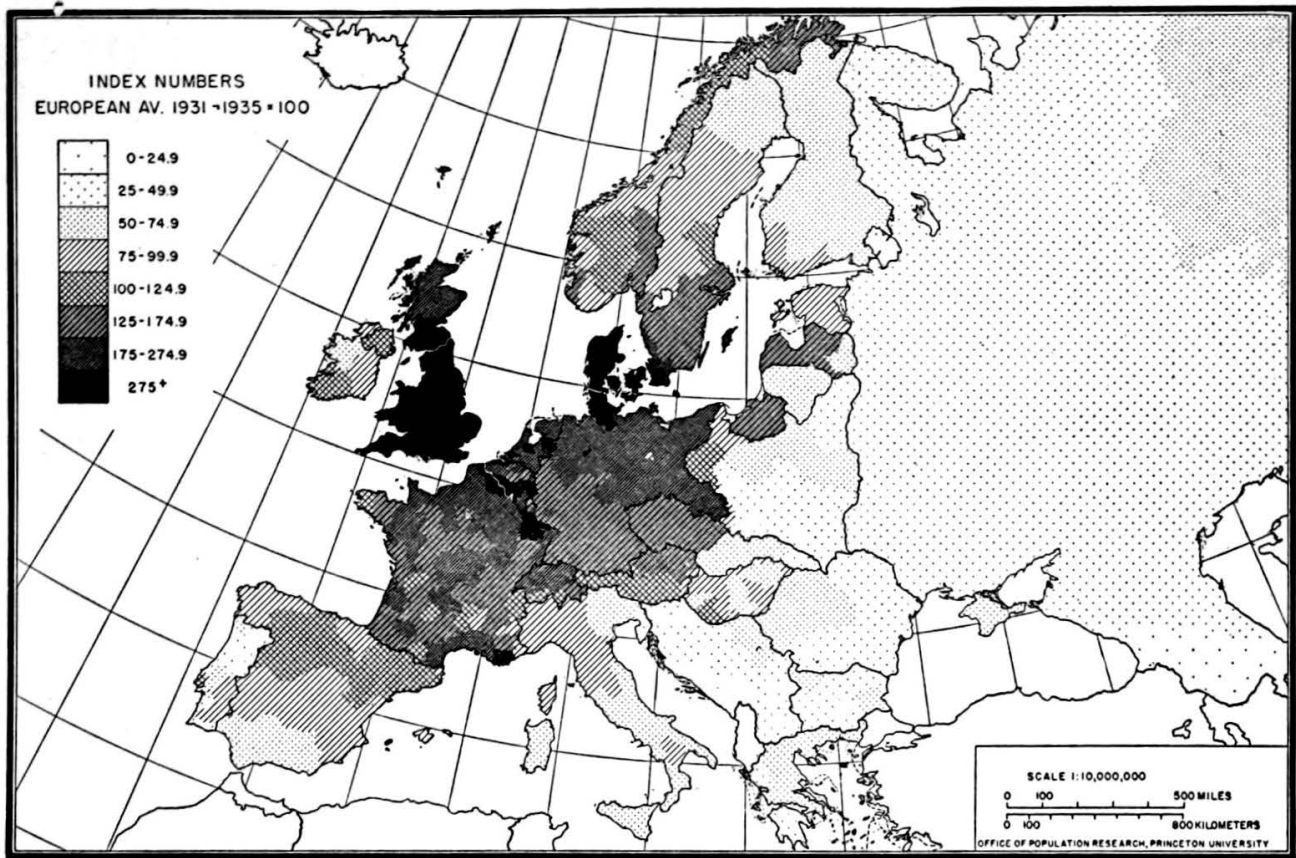


Figure 6. Agricultural Production per Person Dependent on Agriculture, by Administrative Districts

national comparisons—and the same reservation applies *a fortiori* to the data by districts’—the general pattern is certainly correct.

Production Per Male Engaged in Agriculture

The output per capita of those persons directly engaged (that is, gainfully occupied) in agriculture is the simplest measure of labor productivity. This productivity of course largely depends upon such conditions as climate, nature and fertility of the land, use of fertilizers and mechanical equipment, and the efficiency of production methods used.

The preferable method of comparing labor productivity is on the basis of the total number of persons actively engaged in agricultural work, but the problem of comparability of data with respect to the labor of women makes such a comparison impossible. The apparent proportion of women recorded in the agricultural labor force varies greatly from country to country for two reasons:

- (1) Customs and traditions in some countries place barriers

† It should be noted that the attempt to get comparable data for small districts within countries is a much more hazardous undertaking than in the case of national comparisons, where at least part of the errors in reporting, necessary estimating, and so on, may be expected to cancel one another. In the data by small areas two possible sources of error are common throughout the calculations: (a) National index values for various livestock products have been distributed within the country on the basis of livestock populations of the appropriate categories; (b) feed, seed, and other subtractions have been applied uniformly throughout each country, although in fact there must be considerable variations in these “disappearances.” In addition, in certain cases it has been necessary to allocate national production of some crops on the basis of area planted owing to lack of data on production by districts, although differences in yields certainly exist. Considerable errors may arise from lack of data on particular products, insignificant in national totals but so concentrated in one or a few districts as to be of considerable importance there. In diversified economies the significance of differences within districts may be as great as between districts. Other errors may arise from part-time farming or the seasonal employment of foreign workers. Thus the production per capita in north-eastern Germany would certainly be lower were it possible to take into account the Lithuanian and Polish agricultural workers employed on German estates. Even less than with the national data is it possible therefore to claim precise validity for the rank order of small districts, to say nothing of the exact index values computed. In general, any single district illustrated in Figure 6 might well be in the next higher or lower category, and in some cases the error may be even greater owing to special circumstances.

The calculations of production per capita by groups of counties in England and Wales indicate a higher position for Wales and southwest England than for the east and southeast. Careful checking of published statistics and experiments with national price ratios revealed no explanation for this somewhat surprising result. In view of expert opinion, however, the validity of the result is subject to such doubt as to prompt consideration of England and Wales as a unit without regional distinction. It is so represented in Figure 6.

The fact that the relative position of a number of districts can be called into question, however, seems insufficient basis for dispensing with an otherwise valid and useful comparison. Moreover, it is always well to bear in mind the phenomena that are under comparison. Thus, the fact that a particular district is well known to have rich soils does not necessarily mean that its production *per capita* must be high.

on the participation of women in agricultural work proper (as distinguished from housework and routine farm tasks), whereas in other countries no such restrictions exist. While housework and routine tasks contribute indirectly to agricultural income, there are marked national differences in the direct contribution by women to the physical output of agricultural goods.

(2) On the other hand, women on farms are not classified according to uniform principles in the occupational returns of the national censuses. Even when chiefly engaged in housework they are recorded in some countries as persons active or gainfully occupied in agriculture; in other countries they are not so recorded, and indeed women actually engaged in field work may be listed as "dependents." The occupational statistics therefore are not always comparable, even between countries with similar customs and traditions in respect to the direct participation of women in agricultural production, and do not accurately reflect national differences due to differing institutions.

In view of these facts less error is likely to result from omitting than from including female workers in international comparison of output per person gainfully occupied in agricultural production. Accordingly the male labor force alone has been taken into account in computing the per capita and index number values shown by countries in columns 3 and 4 of Table 3 (and by districts in Appendix I, Table 18). The national index numbers are illustrated on a European map in Figure 7.

As peasant families are larger on an average in the eastern and southern parts than in the western and northern parts of Europe, the range of variation between the different countries displayed by the figures for output per person dependent on agriculture is somewhat narrowed in the case of output per male gainfully occupied. Thus a small part of the advantage of the more favored countries on the former basis is due to a "favorable" ratio between active and dependent population. However, the position of the individual countries in the range of countries covered remains almost unchanged, as will be seen from a comparison of Figures 5 and 7.

The relative position of European countries with respect to agricultural production per male gainfully occupied may be compared with the results obtained by quite different procedures by

Colin Clark. Clark's data are based partly on budget statistics, to which the production of livestock products and certain other food crops is added; part of the foreign trade balance is taken into account; and fertilizer, fodder, and some other costs are subtracted.⁸

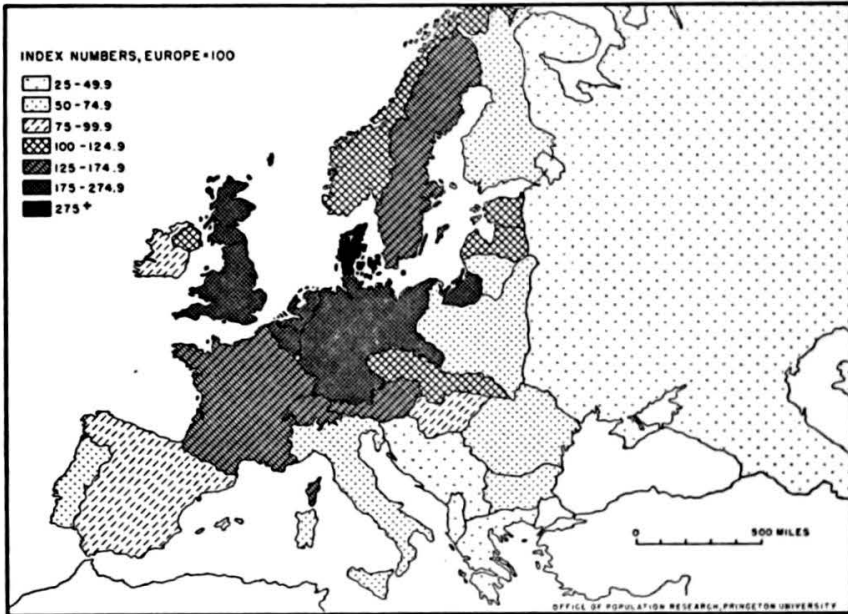


Figure 7. Agricultural Production per Male Engaged in Agriculture

Despite fundamental differences in method, Clark's results for the twelve European countries for which he presents data correspond rather closely with the relative positions of the countries shown in the present study. This may be seen in Table 4, where for convenience the indexes of production per male engaged in agriculture as developed in the present study and those of Colin Clark

⁸ See Colin Clark, *The Conditions of Economic Progress* (London: Macmillan and Co., 1940), pp. 240-250. Clark computes the consumption of wheat, rye, barley, and potatoes from budget statistics, and uses production statistics for livestock products, sugar beets, grapes, olives, citrus fruits, tobacco, soya beans, peanuts, linseed, flax, and hemp. Trade statistics are computed for wheat and wheat flour, rye, barley, oats, maize, and potatoes. Quantities are weighted by 1925-1934 average farm prices in the United States. This introduces some errors as applied to European data; for example, Clark's price for a quintal of potatoes is slightly higher than his price for wheat, whereas in Europe potatoes on the average are worth only about one-fourth the price of wheat per quintal. Indeed, the price ratios used by Clark differ rather widely from the Typical European Value-Ratios used in the present study. The comparative price ratios are given in Appendix I, Table 16.

TABLE 4

Comparison of Indexes of Agricultural Production and Agricultural Real Income per Male Engaged in Agriculture in Certain European Countries
(Germany = 100)

Countries	Agricultural Production, 1931-1935 Average ¹	Agricultural Real Income, 1925-1934 Average ²
Denmark	168	131
Sweden	70	72
Estonia	54	66
Poland	29	40
Belgium	94	80
Czechoslovakia	60	59
France	84	85
Germany	100	100
Netherlands	124	118
Switzerland	87	88
England and Wales	125	97
USSR	22	18

¹ Index figures, as given in Table 8, converted to German base.

² Colin Clark, *The Conditions of Economic Progress* (London: Macmillan and Co., 1940), table following p. 244. Dollar values converted to index numbers relative to German base.

are related to the German index. Clark's lower ratio of Belgium, Netherlands, and Denmark to the German base is probably accounted for by his deduction for production costs. The same may possibly be true in the case of England and Wales, although the consistently high position of England and Wales in the results presented in this study (even when costs are taken into account, as noted below) suggests the possibility that Clark has substantially undervalued the production in this case.

Production per Area

Although the primary concern in this study is with agricultural production as an indication of the well-being of the agricultural population, the data allow some further comparisons of produc-

tivity per area that serve to provide part of the explanation of the observed differences in output per capita. The effectiveness of land utilization necessarily reflects not only differences in levels of productive technique, but also differences in the climate, topography, and natural fertility of the soil. The most readily comparable data are yields of cultivated crops per standard area (conveniently, the hectare in Europe) planted to these crops. A combined index of yields per hectare of the seven most important

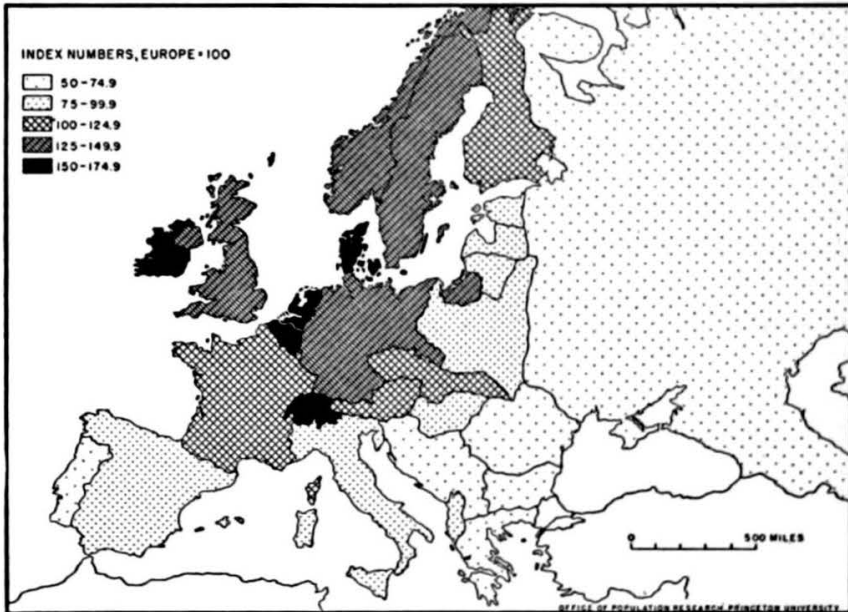


Figure 8. Index of Yields of Important Crops

crops in Europe (wheat, rye, barley, oats, maize, potatoes, and sugar beets), representing the 1931-1935 average, has been constructed. The yield per hectare for each crop is expressed as a percentage of the average European yield, and both an unweighted and a weighted average—the latter in terms of areas sown—have been computed. The two averages do not differ greatly, as shown in Appendix I, Table 19. The unweighted average is mapped in Figure 8.

The highest yields are obtained in Northwestern Europe (the British Isles, Belgium, Netherlands, Germany, Denmark, Norway, Sweden) and in Switzerland. The natural fertility of the

soil is not in all of these countries superior to that in the remainder of Europe. Rather the higher yields are the result of higher capitalization in equipment, fertilizers, etc., more effective production methods, and in general more intensive cultivation.

Theoretically it might be possible to extend a comparison of yields to all cultivated crops in ratio to the total arable land. Aside from problems of adequacy of data for special crops and problems of treatment of fallows,⁹ any such comparison obviously represents very inadequately the utilization of land for total agricultural production, since livestock products on the one hand and meadow and pasture lands on the other are neglected.

A somewhat different approach is to relate total agricultural production (including livestock products) to total agricultural land, the latter expressed in "arable equivalents." This procedure obviates some of the difficulties of non-comparability among various uses of land (for example, market gardens and rough pastures). Clearly, even arable land is of very unequal quality. The addition of other agricultural land areas at arbitrary weights relative to arable land further reduces the true comparability of the areas. However, the adequacy of the procedure must be viewed in terms of possible alternatives, and so viewed it appears the preferable basis of comparison. In general, the measurement of production in terms of "arable equivalents" allows the presumption that observed differences in productivity are more the result of differences in the economic and technological organization of agriculture than of variations in natural fertility of land.¹⁰

The data for production per area on this basis are given by country in Table 3, columns 5 and 6. The European regional pattern is again partially repeated, as will be evident from Figure 9. The national totals given in Table 3 show the highest productivity in the Netherlands, Switzerland, and Belgium, where intensive agriculture and the production of specialized livestock products

⁹ Fallow land is not uniformly classified by national statistics and indeed should not be in view of its varying significance. Countries with poorly developed agricultural techniques allow a large proportion (32 per cent in Spain, 41 per cent in the USSR) to lie in bare fallow. Countries with intensive agriculture leave little bare fallow, either practicing a rotation of productive crops (including legumes) or planting a temporary meadow for hay or pasture. The utilization of fallow land is thus in itself a fairly reliable index of general land utilization. The significance of bare fallows is further discussed in the following chapter.

¹⁰ The method of conversion to "arable equivalents" is explained in the following chapter. Table 1 of Appendix II shows the "arable-equivalent" agricultural areas for European countries and districts.

contribute to effective land utilization. Denmark, England and Wales, and Germany form a second group of countries with high land utilization, followed closely by Norway, Ireland, Austria, Luxembourg, Scotland, and Czechoslovakia. Sweden and Northern

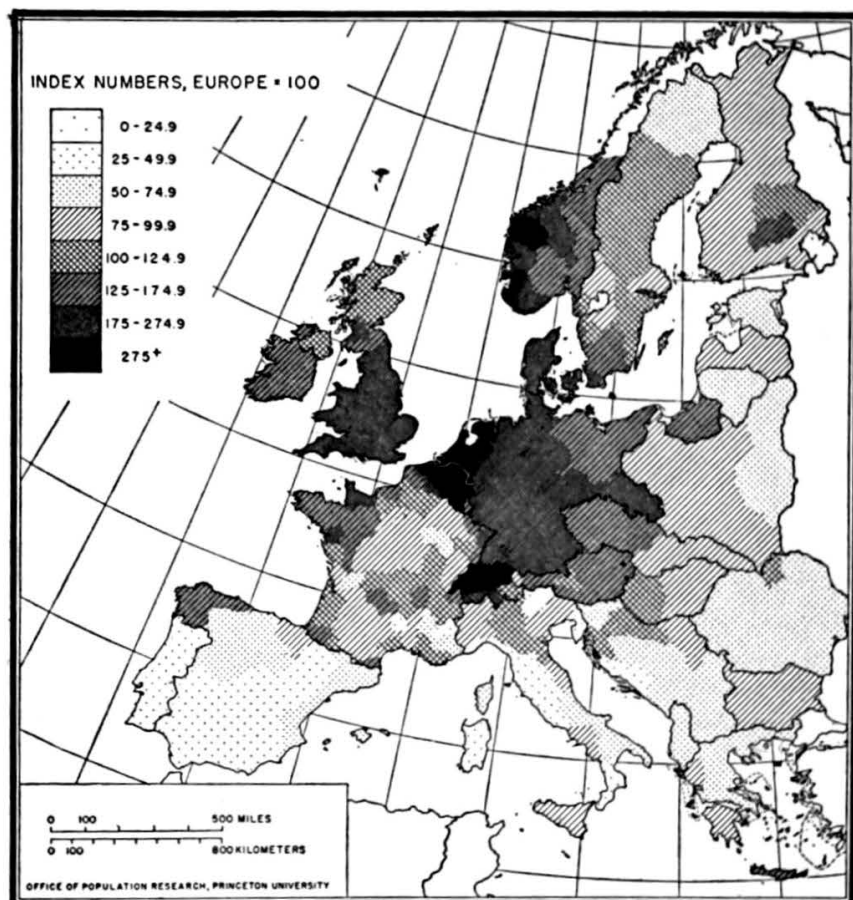


Figure 9. Agricultural Production per Hectare of "Arable-Equivalent" Agricultural Land

Ireland are well above the European average, and France is only slightly above the average. Finland, Hungary, Latvia, Bulgaria, Greece, and Poland represent a range from 75 to 92 per cent of the European average production per hectare. Italy, Albania, Roumania, Yugoslavia, Lithuania, and Estonia, range between 67 and 70 per cent of the European average, while Spain (53 per

cent) and Portugal (47 per cent) have the lowest level of land utilization. The data and map by districts indicate that the pattern of decreasing productivity to the South and East is modified only in a few cases, where the departure from the general pattern may represent either genuinely exceptional land utilization or may represent inadequacies in data or procedures.¹¹

Still another, and considerably less satisfactory, approach to

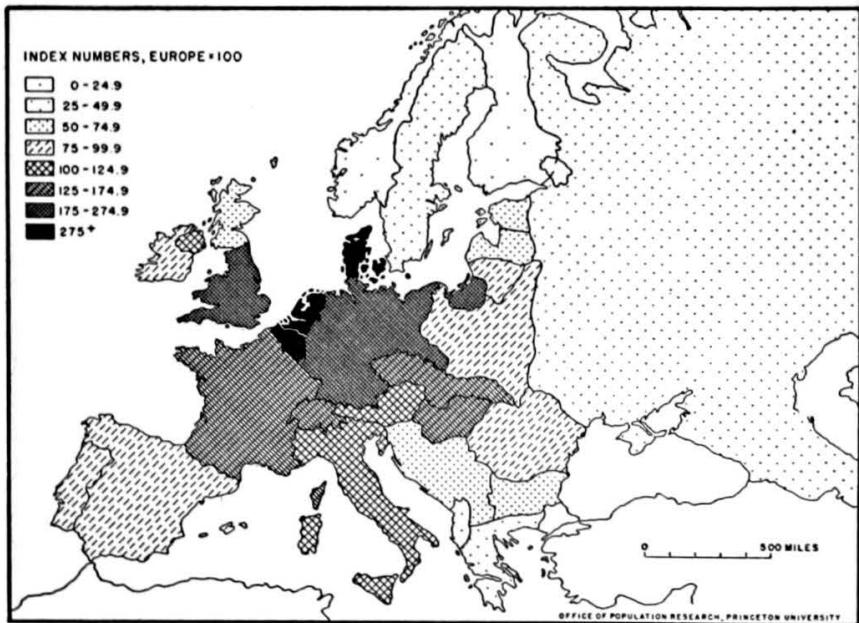


Figure 10. Agricultural Production, Fishing, and Forestry per Hectare of Total Area

effectiveness of land utilization is to relate total agricultural production (plus forestry products and the catch of fish) to the total land area. This relationship is illustrated in Figure 10, an exam-

¹¹ The results by districts shown in Figure 9 are subject to the same reservations indicated in Note 7, above, relative to production per capita, as well as to additional reservations owing to the arbitrary character of the converted land areas used. Thus in northern countries an adequate division between pastures and forests is impossible. For this reason the northernmost part of Norway has been left blank on the map, and the results for Estonia and Latvia as well as for the remainder of Norway are subject to considerable error. Other questionable results include Venezia Tridentina, Veneto, and Venezia Giulia e Zara in Italy (probably too low); the central departments in France (probably too high); and Epirus in Greece (probably too high). England and Wales has again been treated as a unit for reasons explained in Note 7.

ination of which indicates at once the favorable position of Denmark and the Low Countries, followed by England and Wales and Germany. France, Czechoslovakia, and Hungary (the last two having no sea fishing) also have a high position relative to the average. Aside from the improved position of Hungary and Italy, the most obvious result of this comparison is the greatly lowered position of Norway, Sweden, Finland, Scotland, and the northern Baltic States, where the inclusion of the important revenue from fishing and forestry is insufficient to compensate for the inclusion of the high proportions of completely unproductive areas.

All of the foregoing comparisons of agricultural production by country and by small district confirm the general pattern of European economic development, and those comparisons which relate production to the agricultural population (total or active) indicate the real and substantial differences in the economic well-being of European agriculturalists. Indeed, the series indicates not only the existence but also—at least in a rough way—something of the magnitude of the differences. Subject to the reservations earlier noted, consideration of which would substantially alter the magnitude of the differences in some cases, these comparisons indicate the relative incomes of the agricultural population in the various countries and regions of Europe. In order to take into account some of the more important reservations that apply to the foregoing results, certain adjustments are introduced below.

Adjustments for Costs and Additional Output

Of the several previously noted limitations on indexes of agricultural production as measures of income differentials, two allow of partial rectification: costs of production on the one hand and additional sources of income on the other. Although available data do not allow adjustments in these respects by administrative districts, it is possible to remove part of the limitations on a national basis.

Production in Fishing and Forestry. Since national statistical sources ordinarily do not adequately distinguish persons primarily engaged in crop and livestock production from those primarily engaged in fishing and forestry, production in the latter enterprises may be appropriately attributed to the agricultural population.

The value of the catch of sea fishing is available for most countries, although in a few cases estimates have been made by analogy from the data for similar countries. Fish caught in inland lakes and streams are neglected in view of a virtual absence of information. Because of a tremendous variation in quality of fish (and therefore of price per weight), a Modal Value-Ratio has not been used, but rather the values in national currencies have been converted to CU on the basis of the price of one crop basket in national currency.¹²

Forest production is given annually by the International Institute of Agriculture,¹³ and some national data are available for both quantity and value. Thus the value of forestry products in national currencies has been computed directly or estimated from available production data and price ratios prevailing in neighboring countries. The value of the products in national currencies is converted to CU in the same way as in the case of the catch of fish.

Forestry products contribute substantially to the income of the agricultural population in Finland, Sweden, Norway, and Austria, and to a much smaller extent elsewhere. Fishing is also of considerable importance in Norway and Sweden, as well as in France and Italy. The combined index value of crop and livestock production, fishing, and forestry per capita dependent on agriculture is mapped in terms of index numbers (European average = 100) in Figure 11.¹⁴ A comparison of this map with Table 3 and Figure 5 indicates that the principal alteration of relative position of countries is the improved position of Norway, owing to high values of both forestry and fishing, and Finland, Poland, and Roumania, owing mainly to the inclusion of forestry products.

Crop and Livestock Net Production. In order to compute net production in the economic sense, production costs must obviously be subtracted from the gross value of output. With the exception of a few items for which rather complete national statistics are available, notably chemical fertilizers and in some cases feed imports, the major items of cost cannot be computed from general

¹² See the second section of Appendix I for the construction of the Crop Unit as a basis of international comparison.

¹³ *International Yearbook of Forestry Statistics.*

¹⁴ The figures for the value of fishing and forestry expressed in CU, less deduction for costs of production, are shown in Table 5 below. It should be noted that Figure 11 does not take production costs into account.

statistics and subtracted from the value of agricultural production. Rather, reliance must be placed on the relatively small samples available in farm accountancy statistics.¹⁵ The statistics are of uneven reliability in the various countries, depending on the size and representative character of the sample. They are, however, sufficiently complete to allow estimates based either on the national sample or on the data for similar areas.

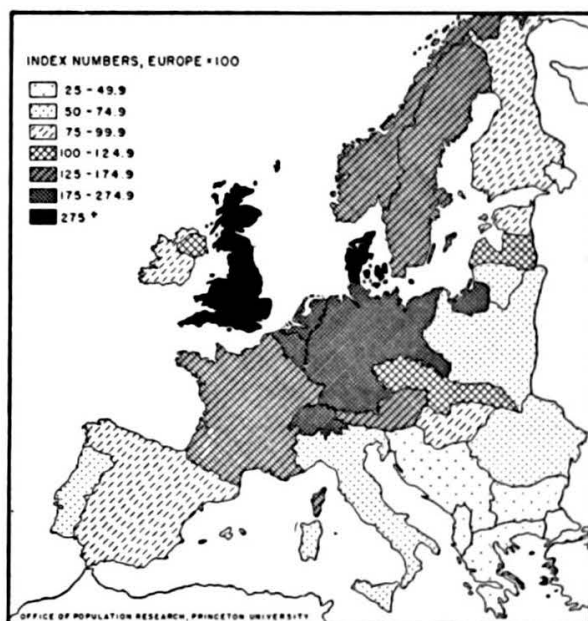


Figure 11. Agricultural Production, Fishing, and Forestry per Person Dependent on Agriculture

The farm accountancy statistics do not take into account products used on the farm; costs and returns are confined to items bought and sold. This means that domestically produced feed and seed—items already deducted in the basic data by districts—do not enter the accounts at all if used on the producing farm. If sold within the country the income is counterbalanced by the cost to other producers. Thus the subtraction of costs for feed and seed eliminates their value added into the revenue of other farms, and additional costs comprise a genuine charge against national production since they represent imported crops. Similarly, im-

¹⁵ International Institute of Agriculture, *Farm Accountancy*. Issued yearly.

ported chemical fertilizers represent genuine costs to domestic production, whereas manure either does not enter the accounts at all, or is balanced between income to sellers and costs to purchasers. Labor represents a cost to the individual producer, but is not a legitimate charge against national production, since labor costs are also part of the income of the agricultural population. Labor costs, therefore, do not enter into the accountancy statistics used.

From the farm accountancy statistics for 1931-1935 the percentages which net production in the economic sense represents of the total output of agriculture have been computed. These percentages are shown in column 2 of Table 5. The index value of agricultural production, shown by countries in column 1 of Table 5, when multiplied by the appropriate percentage is converted to the net physical return from crop and livestock production. This net return is shown in column 3, converted to a per capita basis in column 4, and the latter is then expressed in ratio to the European average in column 5. The results of this computation may be summarized in terms of the relative position of the countries (index numbers, European average = 100).

Over 275: Denmark.

175-274.9: England and Wales, Scotland, and Netherlands.

125-174.9: Belgium, Germany, Switzerland, France, Austria, and Sweden.

100-124.9: Ireland, Northern Ireland, Spain, Luxembourg, Latvia, and Estonia.

75- 99.9: Norway, Italy, Czechoslovakia, Hungary, Lithuania, and Portugal.

50- 74.9: Greece, Bulgaria, Finland, Roumania, USSR, Yugoslavia, and Turkey.

25- 49.9: Poland and Albania.

Since high yields, whether of crops or of livestock products, are primarily the result of intensive agriculture, it follows that costs of production are proportionally higher in advanced than in undeveloped countries. The effect of subtracting production costs therefore is to narrow the spread between the countries of high and low per capita production (compare Table 3) *but does not materially alter the relative positions of the countries.*

TABLE 5 Net Production in Agriculture, Fishing, and Forestry¹

Countries	Agricultural Production in 1000 CU	Net Production							
		From Agriculture (Crop and Livestock Production)				From Fishing and Forestry in 1000 CU	From Agriculture, Fishing, and Forestry		
		Per Cent of Net Production	in 1000 CU	Per Person Dependent on Agriculture			in 1000 CU	Per Person Dependent on Agriculture	
				in CU	Europe = 100	in CU		Europe = 100	
<i>Northern Europe</i>									
Denmark	161,063	51	82,142	77	282	6,012	88,154	83	275
Finland	56,495	65	36,722	18	66	20,185	56,907	28	93
Norway	37,296	59	19,394	26	95	9,884	29,278	39	130
Sweden	119,094	57	67,884	36	130	23,686	91,570	48	159
<i>Eastern Europe</i>									
Estonia	26,755	65	17,391	28	101	859	18,250	29	96
Latvia	49,285	62	30,557	30	107	1,970	32,527	31	104
Lithuania	51,713	67	34,648	21	76	954	35,602	21	71
Poland	404,344	64	258,780	13	49	32,318	291,098	15	50
<i>Central Europe</i>									
Austria	101,907	62	63,182	36	130	11,700	74,882	42	140
Belgium	112,606	50*	56,303	47	172	3,256	59,559	50	165
Czechoslovakia	216,123	55*	118,868	25	90	20,700	139,568	29	96
France	898,537	55*	494,195	43	158	43,222	537,417	47	156
Germany	1,112,810	56	623,174	47	171	68,589	691,763	52	172
Luxembourg	4,581	55*	2,520	30	108	225	2,745	32	107
Netherlands	159,905	46	73,556	51	187	3,668	77,224	54	178
Switzerland	75,159	56	42,089	47	170	3,240	45,329	50	166
<i>Balkans</i>									
Albania	7,646	95*	7,264	9	33	1,872	9,136	11	38
Bulgaria	82,394	95*	78,274	19	70	3,367	81,641	20	66
Greece	60,268	95	57,255	20	74	1,328	58,583	21	68
Hungary	148,896	66	98,271	22	80	4,590	102,861	23	76
Roumania	272,318	78	212,408	16	59	21,780	234,188	18	59
Turkey	169,773	95*	161,284	14	52	-	161,284	14	47
Yugoslavia	175,752	90*	158,177	15	54	22,028	180,205	17	56
<i>Southern Europe</i>									
Italy	561,716	80*	449,373	25	91	29,700	479,073	27	88
Portugal	67,268	90*	60,541	20	75	13,603	74,144	25	83
Spain	448,199	80*	358,559	30	110	10,323	368,882	31	103
<i>British Isles</i>									
Ireland	62,640	80*	50,112	32	117	346	50,458	32	107
England & Wales	290,544	53*	153,988	73	265	19,362	173,350	82	270
Scotland	52,619	53	27,888	72	262	3,402	31,290	81	267
N. Ireland	17,916	65*	11,645	31	114	1,240	12,905	35	115
USSR	1,907,773	95*	1,812,384	16	58	117,000	1,929,384	17	56
Total (Excl. Turkey and USSR)	5,835,449	64	3,745,140	27	100	393,429	4,128,599	30	100

* Estimated

¹ The per capita CU and index number values have been rounded for presentation, although computations were made on the basis of two decimal places for per capita CU values.

Net Production in Agriculture, Fishing, and Forestry. However, net crop and livestock production provides only an incomplete measure of relative income in view of the previously noted fact that in some countries the agricultural population derives a substantial additional income from fishing and forestry. It is now possible to combine the adjustments for the closest possible approximation to the income of the agricultural population.¹⁶

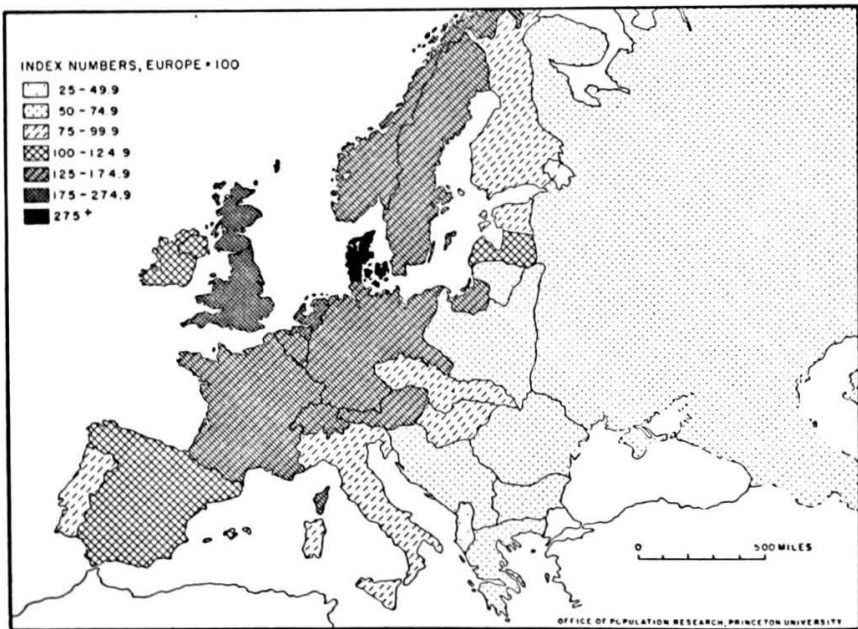


Figure 12. Net Production in Agriculture, Fishing, and Forestry per Person Dependent on Agriculture

To the net crop and livestock production may be added the net index value of fishing and forestry. For the computation of the latter, costs are not readily available. Ignoring national differences, which can only be of minor importance in view of the small fraction of total income derived from these sources in most countries, it has been assumed somewhat arbitrarily that the produc-

¹⁶ The calculation of net production still assumes a uniform schedule of agricultural prices and neglects price ratios between agricultural products and industrial products, part of the quality differences, and some additional sources of income. Some of these would, probably, improve the position of high-ranking countries, while the effect of others is uncertain. Taxes, rents, and interest have also been neglected, not only on the grounds that there are insufficient data, but also on the grounds that these may or may not be net charges on agriculture.

tion costs to be subtracted account for roughly 10 per cent of the index value of the raw products considered. Thus 90 per cent of the computed CU-values of forestry and fishing (as noted above) has been included as net income from these products. The results are shown in column 6 of Table 5. The net total (agriculture, fishing, and forestry) is shown in column 7, which is expressed on a per capita basis in column 8. The per capita values are again converted to index numbers relative to the European average in column 9.

The index numbers are illustrated in Figure 12. Reference to Table 5 and Figure 12 indicates the following groups of countries in descending rank order:

- Over 275: Denmark.
- 175-274.9: England and Wales, Scotland, and Netherlands.
- 125-174.9: Germany, Switzerland, Belgium, Sweden, France, Austria, and Norway.
- 100-124.9: Northern Ireland, Ireland, Luxembourg, Latvia, and Spain.
- 75- 99.9: Estonia, Czechoslovakia, Finland, Italy, Portugal, and Hungary.
- 50- 74.9: Lithuania, Greece, Bulgaria, Roumania, Yugoslavia, USSR, and Poland.
- 25- 49.9: Albania.

A comparison of Figure 12 with Figure 5 indicates that the relative position of the countries undergoes two notable changes as a result of the inclusion of fishing and forestry and the calculation of costs of production. (1) In general, countries in Northern and Western Europe remain about the same or are reduced to a lower position, while the countries of Eastern and Southern Europe are generally raised in terms of the European average. (2) The two notable exceptions to this rule are Norway and Finland, the positions of which are improved owing to the importance of income from fishing and forestry and despite relatively high production costs in agriculture.¹⁷ Again, however, the general order is affected in only minor respects. What is more important is that the numerical order of the differences is substantially narrowed, since costs,

¹⁷ This summary overlooks many changes in index numbers, and minor changes in class intervals. (Compare Table 3, column 2, and Figure 5 with Table 5, column 9, and Figure 12.)

as already noted, bear most heavily on those countries with high production.

The European regional pattern of differences in agricultural productivity is again vividly illustrated by these comparisons. With the exception of two small areas, Luxembourg and Albania, the net income of the agricultural population falls off gradually but consistently the greater the distance from the lower North Sea. This pattern, it may be reasonably assumed, would have been even more evident had it been possible to construct an index for small districts. After the double adjustment of adding income from fishing and forestry and subtracting costs of production, the results conform in general with those derived from computing the total value of crop and livestock production alone. This conformity indicates that the latter alone is probably a fairly reliable indicator of relative well-being of the agricultural population, *but not of the magnitude of the differences*. Thus, the data by small districts have some merit not only as indicating local differences in agricultural output, but also as representing at least in a rough way the relative per capita income differences in European agriculture.

The marked differences in per capita productivity in agriculture between the various regions of the European continent, together with the previously noted differences in demographic situations and prospects, provide the background for further scrutiny of the economic position of the peoples of Eastern and Southern Europe. The following chapter begins that scrutiny with reference to the agricultural population and the conditions of agricultural production.

CHAPTER III

AGRICULTURAL POPULATION AND PRODUCTIVE ORGANIZATION

THE demographic and economic significance of the regional differences outlined in the two preceding chapters may be approached by turning to the specific problems of support of a growing population on the land in Eastern and Southern Europe. The present chapter outlines first the relation between agricultural population and production, with particular reference to agricultural "overpopulation." Attention is then turned to the technological and organizational features of agricultural production, in an attempt both to determine the reasons for low productivity and to provide a key to possible means for improving the agricultural situation.

People on the Land

Because the agrarian regions of Eastern and Southern Europe combine high proportions of the total population dependent on agriculture and a low volume of agricultural production, these regions are frequently said to suffer from "overpopulation." It is worth while to examine briefly precisely what this may mean, and what significance it may have for future economic prospects in these areas.

The traditional Malthusian theory of population predicated an unstable balance between population size and food supply; the world was thought to be doomed to chronic maximum population at subsistence level, with population growth only restrained by various "natural checks," including starvation. Underpopulation could exist only briefly in a new country, since the population would quickly expand to the full extent made possible by existing resources. Present purposes do not require a review of the doctrinal controversies in this field beyond the observation that a primary dynamic factor in the relation of population to resources is the level of technological development. A change in this development can, and constantly does, change the significant ratio of population to resources. For example, extremely rapid population growth in Western Europe in the last century was accompanied by rising levels of living, made possible by revolutionary changes

in agricultural technique and in the whole structure of modern economy. There are also other "middle terms" in the relation of population to resources, including productive organization, division of labor, the distributive system, and the standard of living considered appropriate. The view of population size itself as a biological variable is inadequate, since a variety of institutional controls enter into the determination of fertility and mortality. Thus a "Malthusian situation," strictly speaking, has never existed.

Clearly untenable, therefore, is the conception of overpopulation as a greater number of people than the economy can support in some absolute sense. In the same absolute sense, those who are alive are obviously not part of the surplus. To discuss surplus population at all some standards of judgment must be introduced: health and longevity, full employment, or a "minimum" level of living. In all of these cases the surplus may be viewed in relation to existing technology and social organization or in relation to some hypothetical or ideal modification of the social system. The question at issue then becomes, how many people can be supported or employed at some particular level in view of various relevant circumstances?¹

Surplus population therefore is a relative notion, and one that can be assessed from various standards. Any program of rectification must determine not only what surplus exists from some point of view, but also what circumstances are amenable to change.

Measures of Overpopulation. Among the various standards that might afford a basis for measuring surplus population, three are of especial significance: population density, level of employment, and level of production or consumption. Each of these standards represents an attempt to relate population to "resources," with or without explicit assumptions about other relevant conditions.

Reliance on population density as a measure of surplus population requires the assumption of some "reasonable" number of persons per unit of area, any higher density representing the amount

¹ For a critique of the Malthusian position and restatement of population theory, see E. F. Penrose, *Population Theories and Their Application* (Stanford University, Calif.: Food Research Institute, 1934), Chap. I, "The Malthusian Theory"; Chap. II, "The Income Optimum Population"; Chap. III, "The Welfare Optimum Population."

of the surplus.² Although this procedure is statistically simple it is also arbitrary. It not only neglects completely the economic and technological organization and other "middle terms" that largely determine the carrying power of the land, but also poses the problem of relating population to comparable areas. For example, any metropolitan community would represent an extreme overpopulation. The regions of Europe that have prospects for stable or declining populations and that have achieved high productivity per capita in agriculture, are by no means thinly settled. In fact, Northwestern Europe is not only the most densely populated part of the continent, as may be seen in Figure 13, but is one of the most thickly settled areas in the world.



Figure 13. Distribution of Population around 1930

(Adapted from *Sydow-Wagners Methodischer Schulatlas*, Courtesy of American Geographical Society.)

² For example, see Royal Institute of International Affairs, *Agrarian Problems from the Baltic to the Aegean* (London: 1944), pp. 52-53; Royal Institute of International Affairs, Information Department, *South-Eastern Europe: A Brief Survey*, Paper No. 26 (London: Oxford University Press, 1940), pp. 74-76; Doreen Warriner, *Economics of Peasant Farming* (London: Oxford University Press, 1939), Chap. III, "Over-Population."

The difficulties in the interpretation of population densities remain even if the measure is confined to agricultural population and agricultural land. Thus, an agricultural area made up almost entirely of rough pastures can support a much smaller population than an area devoted to horticulture.

The problem of comparable areas may be partially, but not completely, overcome by converting various types of land utilization to a common basis. Such a procedure was used to translate agricultural land into "arable equivalents," following the method suggested by J. Poniatowski.³ The results for European countries, and for provinces or regions within the larger countries, are presented in Appendix II. When related to the population dependent on agriculture, these converted land areas yield density figures of considerably greater comparability than would otherwise be possible. These data are presented in Appendix II, Table 1, and mapped in Figure 14. Aside from the not insignificant technical problems of determining the appropriate value ratios among the various types of land use, the procedure assumes that either the productive value of arable land is equivalent in all regions or that the differences can be offset by technological developments. It is clear, for example, that even climatic disadvantages and low soil fertility can be offset by improved technology, although there can be no doubt that greater capital and managerial ability are required.⁴

The densities of agricultural population, as portrayed in Figure 14, are chiefly significant for what they do *not* reveal about levels of living or economic opportunity. Thus, although the regions of Eastern Europe are shown to have high densities, so do the Low Countries and considerable portions of Switzerland and the Scandinavian Peninsula. If these densities are compared with either the value of production per hectare of agricultural area or, more

³ Cited in International Institute of Agriculture, *Population and Agriculture, with Special Reference to Agricultural Overpopulation*, League of Nations, European Conference on Rural Life, 1939, No. 8 (Geneva: 1939), p. 21.

⁴ This point has been made, with perhaps undue emphasis, by Ellsworth Huntington in his "Agricultural Productivity and Pressure of Population," *Annals of the American Academy of Political and Social Science*, 198: 73-92, July, 1938.

In general, the assumption that land used for similar purposes is of similar quality (with the exception of pastures) overestimates the quality of the land, and particularly of arable land, where the "pressure" of agricultural population leads to the bringing of land of low fertility under cultivation. In other words, the margin for productive land varies with the demand for that land.

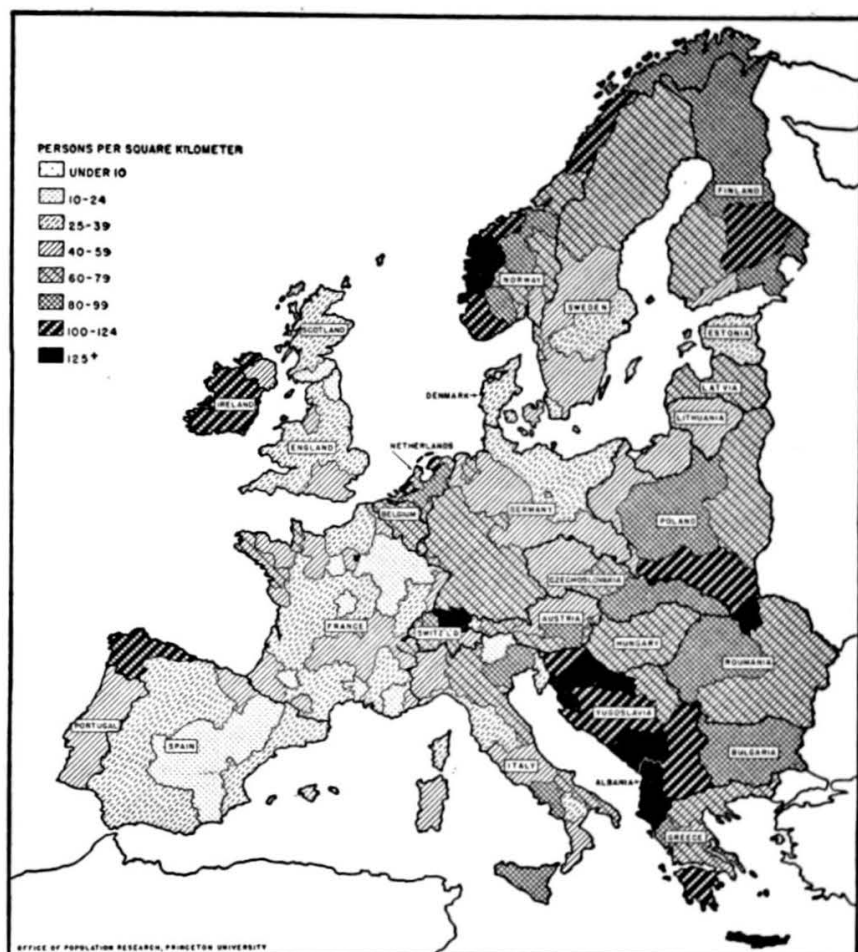


Figure 14. Density of Agricultural Population per Square Kilometer of "Arable-Equivalent" Agricultural Land

especially, the value per capita of farm population (see Figures 6 and 9 in Chapter II), it is evident that density does not provide a sound basis for estimating population surpluses. At the most, it allows comparison between regions of similar economic structure by holding one factor, land utilization, fairly constant.⁵

⁵ The significance of population density, and therefore of available labor, is clearly relative to the situation with respect to other productive factors. To the point of the maximum utilization of these factors, additional labor may increase output. Thus given levels of technology and economic specialization set *minimum* as well as maximum limits to manpower requirements. This has been pointed out in the case of Czechoslovak agriculture by H. Böker and F. W. von Bülow, *The*

The *level of employment* as a measure of overpopulation is no more adequate than a mechanistic view of the "overcrowding" represented by high densities of population. The evidence of variation in employment levels corresponding with business cycles immediately indicates that the volume of employment cannot be accepted as a pragmatic test of the employment *capacity* of an economy. The cause of unemployment may be a shortage of one or more of the other factors of production: capital, resources, or managerial ability. However, unemployment is frequently due to an ineffective distributive organization for marketing potential production or to occupational rigidities producing both labor shortages and labor surpluses. The measure has, if anything, even less merit with regard to the agricultural population.* The seasonal nature of labor demand, coupled with the fact that wage employment may be almost non-existent, places insurmountable barriers in the way of using agricultural unemployment statistics as indicative of "too many people."

As in the measurement of overpopulation on the basis of employment levels or labor requirements, the question of how many people could be supported at some "reasonable" *level of living* requires analysis of the whole organization of production and distribution. Thus, the factors of production may be genuinely lacking,⁸ or

Rural Exodus in Czechoslovakia, International Labour Office, Studies and Reports, Series K, No. 18 (Geneva: 1935). Dolinski found agricultural population growth in Bulgaria accompanied by an increased, although lesser, intensification. (N. W. Dolinski, "Über den Zusammenhang der Bevölkerungsvermehrung und der Intensität der Landwirtschaft in Bulgarien," *Archiv für Sozialwissenschaft und Sozialpolitik*, 63:608-624, June, 1930.) On the other hand, Klonov found in Czechoslovakia that *decreases* in population increased yields. (Vladimír Klonov, "Recherche statistique sur la relation entre la productivité agricole et la densité et la structure de la population," *Statistický Obzor*, 18:31-46, March, 1937.)

* See Colin Clark, *The Conditions of Economic Progress* (London: Macmillan and Co., 1940), pp. 227-230; Warriner, *op. cit.*; P. Lamartine Yates and D. Warriner, *Food and Farming in Post-War Europe* (London, etc.: Oxford University Press, 1943), Chap. IV, "Over-Population"; *Economic Development in S. E. Europe* (London: PEP [Political and Economic Planning], 1945), pp. 88-89.

⁷ The measurement of agricultural unemployment is especially difficult because actual employees are likely to constitute very small proportions of the labor force, and "hidden unemployment" may be widespread among owners and tenants. Estimates of surplus labor on the basis of man-days required for the existing output must be at best extremely rough, and would be beset with many difficulties. Capital, land fertility, product structure, market organization, managerial ability, and division of labor would have to be held constant or included in the calculations.

⁸ The crucial factor in the productive system may be lack of capital, as will be noted in some detail in a later section of this chapter. The significance of capital shortage for agricultural overpopulation has been pointed out by Dolinski, *loc. cit.* See also Theodor Oberländer, "Übervölkerung in Ostmitteleuropa," *Baltische Monatshefte*, 1933:375-382, July/August, 1933.

simply inefficiently used. In the latter case, changes in the economic or technological organization might increase the level of production and therefore, presumably, of per capita consumption. However, a low level of living, for example among peasants or farm employees, may also partly reflect a highly unequal distribution, so that a seeming population surplus may be due less to the low total volume of output than to the proportion of that output available to cultivators. The measurement of overpopulation relative to a given volume of output thus requires assumptions both as to the productive and distributive systems and as to the per capita level of production or consumption selected as a standard.*

Agricultural Production Per Capita as a Measure of Surplus Population. The data on agricultural output by administrative districts in Europe, 1931-1935, presented in Chapter II supplemented by Appendix I, allows calculation of the number of people that would be required to produce a given total production at a selected per capita level of productivity. If this calculated number is less than the actual agricultural population, a "surplus" population remains. Since this is a measure analogous to the "reasonable" level of living discussed above, the assumptions should be noted: (1) if the existing level of production is taken as the basis for calculation, the procedure does not indicate whether that production could be increased, and if so, by what means; (2) the "reasonableness" of the selected per capita level of productivity must be assumed. The significance of these assumptions is further discussed and partially tested in the following paragraphs.

Because of the impressive differences between prosperous and poor agricultural regions of Europe, the selection of a "reasonable" standard is difficult. For example, the Danish per capita level, which is the highest in Europe, reflects a highly specialized and intensive agrarian regime, dependent upon German and especially English urban markets. In no meaningful sense would such a level be reasonable for Sub-Carpathian Russia or Bessarabia. It

* It is to be emphasized that this standard is also a variable and critical factor. This is true not only for the investigator who attempts to determine the existence and amount of surplus population, but also for the peoples of areas claimed to be suffering from "population pressure." In the latter case it is evident that the crucial question cannot be posed in terms of absolutes, but depends on the relation between existing levels and the standards or ideals there current. See Warren S. Thompson and P. K. Whelpton, "Levels of Living and Population Pressure," *Annals of the American Academy of Political and Social Science*, 196:93-100, July, 1938.

does appear, however, that the general European average is not an excessively high standard. With the exception only of Finland and Ireland, all of the Northern and Western European countries are above the average. Of the Eastern and Southern countries, only Latvia and Czechoslovakia are slightly above the European average. When it is noted that Ireland, Estonia, and Czechoslovakia have per capita levels within 10 per cent of the European average, the standard seems fair.¹⁰

If the average European per capita product is taken as standard, it may be divided into the index value of total production in each country to obtain an estimated number of people required to produce that product at that standard of productivity. This in turn provides the material with which to judge the size of the surplus agricultural population. Table 6 shows the estimated surpluses calculated on this basis, together with the proportions of the total agricultural population that the surpluses (or, in a few cases, deficits) represent.¹¹ For countries as a whole, the percentages range from an 11 per cent deficit in Latvia, which is confirmed by an agricultural labor shortage, to an overpopulation amounting to 78 per cent in Albania, which has the lowest level of production in Europe.

Under the assumption that a European average standard is reasonable, the countries of Eastern and Southeastern Europe have a surplus agricultural population of 45 per cent. By the same standard, the Southwestern Peninsulas have a redundant farm population of 23 per cent. This means that with no increase in production a substantial proportion of the rural population would have to find other employment in order for the remainder to achieve a European average level, or, approximately, that of Estonia.

The percentages of agricultural overpopulation for each Eastern and Southern European country, and for administrative districts in most countries, are mapped in Figure 15. By reference to Table 6 and Figure 15, the more important features of agricultural overpopulation, as here defined, may be noted for each country. It should be noted that "existing" production actually refers to the prewar period.

¹⁰ See Appendix I, Table 18.

¹¹ Because, by the standard selected, nearly all of the Northern and Western countries would be underpopulated, the tables and maps showing overpopulation are confined to those countries primarily considered in the present study.

TABLE 6

“Standard” and “Surplus” Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming Existing Production and European Average Per Capita Level

Country and Region	Population Dependent on Agriculture ^a 000's omitted	Agriculture Net Production in Crop Units ^b 000's omitted	Standard Population Assuming European Per Capita Level ^c 000's omitted	“Surplus” Population	
				Number ^d 000's omitted	Per Cent ^e
	(1)	(2)	(3)	(4)	(5)
ALBANIA	800	7,646	178	622	77.7
BULGARIA	4,088	82,394	1,921	2,167	53.0
CZECHOSLOVAKIA	4,812	216,125	5,038	—226	—4.7
Bohemia	1,627	107,969	2,517	—890	—54.7
Moravia-Silesia	968	53,734	1,253	—285	—29.4
Slovakia	1,797	46,923	1,094	703	39.1
Sub-Carpathian Russia	419	7,499	175	244	58.3
ESTONIA	626	26,755	624	2	.4
GREECE	2,829	60,265	1,405	1,424	50.3
Central Greece & Eub.	409	9,398	219	190	46.4
Peloponnesos	611	12,991	303	308	50.4
Cyclades	51	698	16	35	68.1
Ionian Islands	116	1,555	36	80	68.8
Thessaly	275	6,076	142	133	48.5
Macedonia	708	15,320	357	351	49.6
Epirus	174	2,828	66	108	62.1
Crete	224	4,803	112	112	50.0
Aegean Islands	105	2,597	61	44	42.3
Western Thrace	183	3,999	93	90	49.1
HUNGARY	4,472	148,898	3,471	1,001	22.4
Transdanubia	1,641	65,183	1,519	122	7.4
Great Plain	2,185	64,937	1,514	671	30.7
North	646	18,778	438	208	32.2
ITALY	17,953	561,726	13,094	4,859	27.1
Piemonte	1,410	57,833	1,348	62	4.4
Liguria	296	10,298	240	56	19.0
Lombardia	1,647	66,351	1,547	100	6.1
Veneria Tridentina	323	9,117	213	110	34.2
Veneto	1,996	56,437	1,316	680	34.1
Venezia Giulia e Zara	323	6,864	160	163	50.5
Emilia	1,738	71,967	1,678	60	3.5
Toscana	1,180	40,814	951	229	19.4
Marche	710	22,452	523	187	26.3
Umbria	410	13,202	308	102	24.9
Lazio	851	22,132	516	335	39.4
Abruzzi e Molise	992	21,691	506	486	49.0
Campania	1,290	34,409	802	488	37.8
Puglie	1,293	28,314	660	633	49.0
Lucania	326	13,658	318	8	2.3
Calabria	951	21,269	496	455	47.9
Sicilia	1,800	50,296	1,172	718	39.8
Sardegna	556	14,612	341	215	38.7
LATVIA	1,036	49,285	1,149	—113	—10.9
LITHUANIA	1,457	51,713	1,205	452	27.3

TABLE 6 (Continued)

Country and Region	Population Dependent on Agriculture ¹ 000's omitted	Agriculture Net Production In Crop Units ² 000's omitted	Standard Population Assuming European Per Capita Level ³ 000's omitted	"Surplus" Population	
				Number ⁴ 000's omitted	Per Cent ⁵
	(1)	(2)	(3)	(4)	(5)
POLAND	19,347	404,339	9,425	9,922	51.3
Central	7,388	157,937	3,682	3,706	50.2
East	4,361	80,233	1,870	2,491	57.1
South	5,892	95,729	2,231	3,661	62.1
West	1,705	70,440	1,642	63	3.7
PORTUGAL⁶	2,954	67,269	1,568	1,386	46.9
Entre Minho e Douro	584	12,688	296	288	49.4
Tras-os-Montes	283	5,520	129	154	54.5
Beira	934	16,244	379	555	59.5
Estremadura	649	19,248	449	200	30.9
Alentejo and Algarve	504	13,569	316	188	37.2
ROUMANIA	13,069	272,318	6,348	6,721	51.4
Old Kingdom	6,363	132,547	3,090	3,273	51.4
Bessarabia	2,466	47,964	1,118	1,348	54.7
Bukovina	595	11,573	270	325	54.7
Transylvania	3,645	80,234	1,870	1,775	48.7
SPAIN	11,864	448,199	10,448	1,417	11.9
Galicio-Asturica	1,697	57,573	11,342	355	20.9
Vascongadas y Navarra	461	19,435	453	7	1.6
Castilla la Vieja	806	34,629	807	-1	-.1
Aragón	576	28,180	657	-81	-14.0
Cataluña	903	42,732	996	-93	-10.3
Valencia	941	37,976	885	55	5.9
Murcia	497	19,813	462	36	7.1
Andalucía	2,734	77,631	1,810	924	33.8
Extremadura	718	24,256	565	153	21.3
Castilla la Nueva	1,233	48,852	1,139	94	7.7
León	948	41,560	969	-20	-2.1
Balearas	158	6,545	153	6	3.7
Canarias	192	9,017	210	-18	-9.5
YUGOSLAVIA	10,629	175,752	4,097	6,532	61.5
Dravska	686	11,031	234	452	65.9
Drinska	1,258	18,934	441	817	64.9
Dunavska	1,779	53,027	1,236	543	30.5
Moravska	1,230	17,508	408	822	66.8
Primorska	747	6,937	162	585	78.4
Savska	2,026	33,947	789	1,237	61.1
Vardarska	1,226	14,878	347	879	71.7
Vrbaška	910	12,244	285	625	68.6
Zetska	756	7,876	184	572	75.7
Beograd	10	470	11	-1	-9.6

^a Percentages are computed from unrounded figures.

¹ Source: Appendix I, Table 18.

² *Ibid.*

³ Column 8 represents column 2 divided by 42.9, the European average per capita value of agricultural production, expressed in Crop Units.

⁴ Column 8 subtracted from column 1. Computation made before rounding.

⁵ Portuguese data refer uniformly to the "Continente," thus excluding "Ilhas."

A. EASTERN AND SOUTHEASTERN EUROPE

ESTONIA. Having almost exactly the European per capita level of agricultural production, Estonia appears to have almost no surplus agricultural population, even with existing production.

LATVIA. Latvia has developed both specialized agriculture and extensive trade, and appears here as underpopulated in the sense that per capita productivity is above the European average and that a larger agricultural population with existing product would still allow a "reasonable" per capita productive level.

LITHUANIA. Of the Baltic States, only Lithuania is clearly associated with the Eastern European pattern. With an agricultural surplus population, amounting by present computations to over 27 per cent, it has in the past supplied migratory farm laborers for East Prussian and Latvian farms.

POLAND. In Poland agricultural overpopulation reaches major proportions. Although Figure 15 shows all of Poland except the western provinces as falling in the highest category, Table 6 indicates that Central Poland barely exceeds 50 per cent surplus, whereas South Poland, which has one of the densest agricultural populations in all Europe, has a surplus amounting to 62 per cent.

CZECHOSLOVAKIA. The four principal regions of Czechoslovakia provide the classic example of transition from Western to Eastern European economic development. Bohemia, with a level of agricultural production considerably above the European average, is shown on the map as underpopulated; indeed the "rural exodus" had become a problem in the interwar period. Moravia-Silesia is nearer the average. The eastern provinces of Slovakia and Sub-Carpathian Russia show an orderly progression to a large surplus population. For the country as a whole, however, the deficit in the west slightly more than offsets the surplus in the east.

ROUMANIA. Of the four major regions of Roumania, only Transylvania in the west falls slightly below 50 per cent overpopulation in agriculture. All of the regions are very similar with respect to level of production, the northern regions (Bukovina and Bessarabia) having slightly larger surplus populations than the rest of the country.

HUNGARY. The Hungarian Great Plain and the North are shown to have a redundant population of considerable proportions

in view of existing per capita production, whereas Transdanubia has only a slight excess.

YUGOSLAVIA. Every province except that of the Danube (Dunavska) and the small area around Belgrade has over a 50 per cent surplus of agricultural population. The two most overpopulated provinces are those of Primorska and Zetska.

BULGARIA. Although not broken down by provinces, the country as a whole has a surplus agricultural population of 53 per cent.

ALBANIA. Albania, with the lowest level of production of any country in Europe, would require less than one-fourth of its present population to produce at the European per capita level.

GREECE. The country as a whole has an excess population on the land amounting to just over 50 per cent. The per capita levels of agricultural production, and therefore the calculated population surpluses, are fairly uniform throughout the country, the highest surpluses (over 60 per cent) being in Epirus, the Cyclades, and the Ionian Islands, the lowest (under 45 per cent) in the Aegean Islands.

B. SOUTHWESTERN PENINSULAS

ITALY. Figure 15 duplicates, with minor exceptions, the familiar progression from the more prosperous regions of the North to the poorer areas of the South. Every province has, however, some excess agricultural population, however slight. The provinces at the head of the Adriatic, especially Venezia Giulia e Zara which adjoins Yugoslavia, appear to follow the Eastern European pattern. The small surplus shown for Lucania in the South (2.3 per cent) is somewhat surprising.

PORTUGAL. The extent of the surplus in the several districts of Portugal seems to fall within a fairly narrow range, with some apparent tendency for the excess to be larger in the north, an area predominantly characterized by small holdings. However, the northern coastal region around Porto, which is the chief wine center, shows a slightly smaller surplus population than the other two northern districts.

SPAIN. The regions of Spain show greater diversity in per capita agricultural productivity than those of any other country considered here. This is reflected in the estimates of surplus population illustrated in Figure 15. Aragon and Cataluna have farm popula-

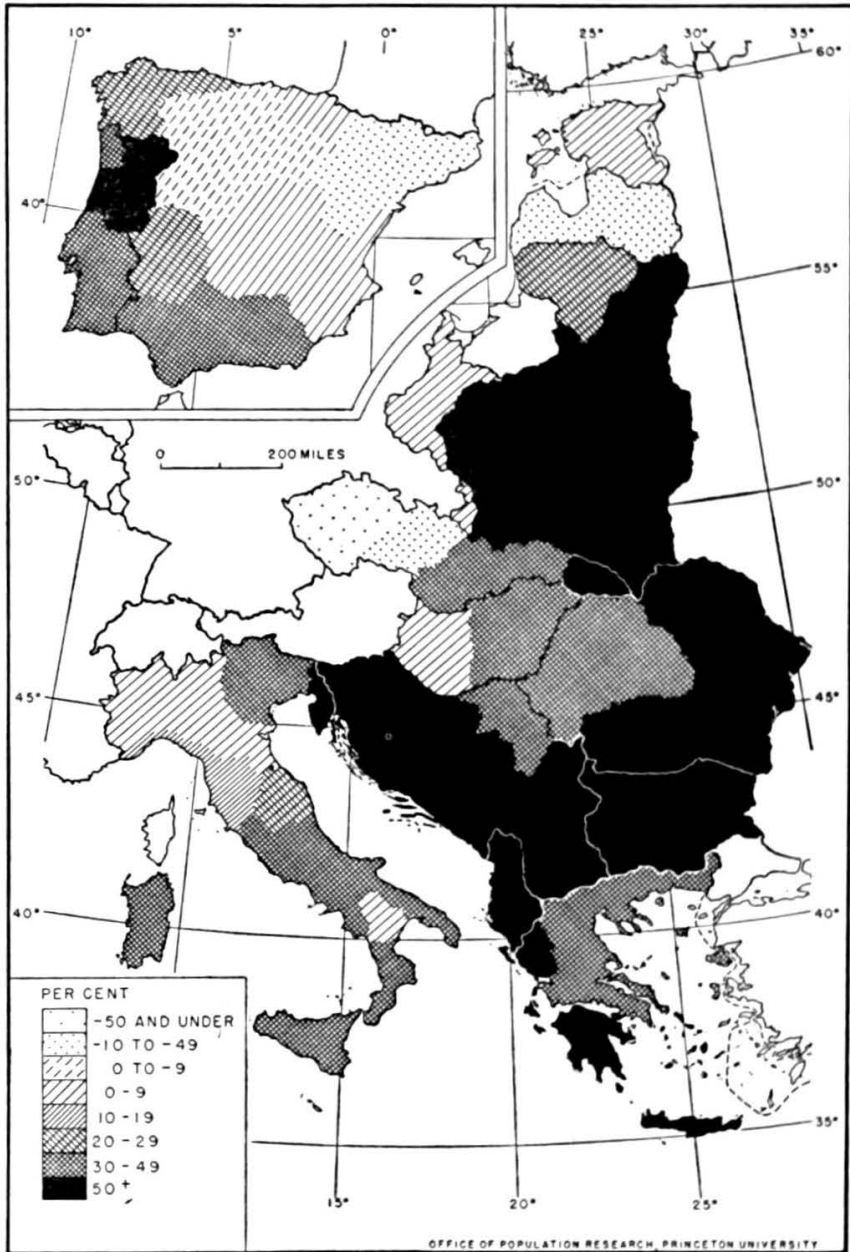


Figure 15. Surplus Agricultural Population in Eastern and Southern Europe, Assuming Existing Production and European Average Per Capita Level

tion deficits, by the standard adopted here, running over 10 per cent. The north central regions (Castilla la Vieja and Leon) also appear as underpopulated, although in smaller proportion. The Basque provinces and Navarra (Vascongadas y Navarra), the eastern coastal regions (Valencia and Murcia), the Balearic Islands, and New Castille have excess farm populations of less than 10 per cent. Galicia and the Asturias on the northwest coast, and Extremadura in the southwest show greater surpluses, which are not surprising in view of the known characteristics of the regions. The high surplus shown for Andalucia (33.8 per cent) should be noted, however, since it indicates that a region generally favored by climatic conditions and soils still would require only two-thirds of its actual farm population with existing production and a "reasonable" per capita level. As pointed out in Chapter II, there is some reason to believe that the Spanish production figures are too high, in which case the calculated population surpluses should be larger.

If one were to assume the higher French per capita level of agricultural production (which is still below that of Switzerland, Germany, Belgium, Netherlands, Scotland, England and Wales, and Denmark), the amount and percentages of overpopulation in the agrarian economies would be proportionally increased. The data comparable to those in Table 6, but with a French per capita level, are given in Appendix II, Table 2. Every district of Eastern and Southern Europe is below the French per capita level, and thus has an agricultural overpopulation by that standard. It is not proposed that the French per capita level, which partly reflects a static or declining population, would be a "reasonable" standard for Eastern and Southern Europe in the predictable future. Moreover, the poor quality of pastures in many of the agrarian countries militates against some types of livestock production, which is ordinarily of higher value per unit of labor than is, for example, cereal production. It is, however, suggested that the numerical extent of overpopulation under the assumption of a French per capita level of productivity confirms the conservatism of the previous estimates.¹²

¹² These estimates are, of course, still higher than the frequent and undocumented assertion that the surplus amounts to one-third of the agricultural population.

Further confirmation of the conservative character of the estimates appears from the fact that the population and production figures express the situation in the early part of the 1930's. These are areas of rapid population growth, and there is no evidence that agricultural production is expanding at an equal rate, or that the pace of urbanization was sufficiently rapid to draw off enough of the rural population to reduce or even to maintain the ratio of people to product.

The estimates of agricultural overpopulation have up to this point rested simply on a calculation of the number of people required to produce present agricultural output, at a standard per capita level. It may, however, be objected that it is precisely the inefficient state of agricultural technology that is the crux of the problem in the Eastern and Southern agrarian regions. From this it would follow that an improvement in agricultural production would provide the necessary means for supporting the farm population at some "reasonable" level. This general point is examined in some detail in the following chapter. However, at this juncture it may be instructive to estimate how large a farm population could be supported at some selected per capita level of production were the efficiency of land utilization raised to that prevalent in some more prosperous area.

As in the case of the selection of a "reasonable" per capita level, the choice of some standard of land utilization is hazardous, and of course arbitrary. The calculation of roughly comparable areas only partly removes the hazard, for it leaves untouched the complex factors in agricultural production: climate, soil fertility for comparable land uses, technology, transportation, capital, and markets. The problem remains one of selecting a standard of land utilization with some chance of being achieved if appropriate measures are taken.¹³

The standard here selected is that of the French agricultural productivity per hectare. Without arguing the case in detail, the following considerations seem to support the selection: (1) France

¹³ In general, it seems likely that climatic factors operate somewhat to the disadvantage of Southern and Eastern Europe, and that a redundant farm population has brought marginal lands into cultivation. Thus, the "standard" productivity of an arable-equivalent unit may overrate somewhat the productivity of lands in the agrarian economies unless exceptional measures are taken in the way of capital and technique. This qualification would serve to make the estimated population surpluses on the basis of standardized production unduly conservative.

represents an extensive agricultural area, with fairly wide ranges in climate, soil composition, and the like. (2) French farms, in comparison with those of other Western European countries, are not heavily capitalized. (3) French agriculture is not dependent on an unusually favorable external market situation, as are, for example, the Low Countries and Denmark. (4) Finally, the French productivity per hectare is lower than that of any of the Northern and Western European countries except Finland, and also lower than that of Czechoslovakia and Latvia. In fact, the French productivity per unit of area is only slightly above the European average.¹⁴

The procedure used for estimating surplus farm populations under changed conditions of agricultural production is to apply the French value of agricultural land to comparable land areas in Eastern and Southern Europe. This calculation yields a "standardized" production figure that is greater than the actual production in all areas falling short of the French standards of land utilization. The standardized production may then be used for computing the population required to produce that amount, assuming some "reasonable" per capita level, as in the previous case. Table 7 shows the standardized production, the agricultural population that could be supported at the European per capita level with the standardized production, the computed surplus, and the percentage the surplus represents of the total agricultural population. The percentages are mapped in Figure 16, which may be compared with Figure 15.

It is clear from an examination of Table 7 and Figure 16 that if these strictly defined "optimum" conditions of production are assumed, there would still remain a substantial surplus agricultural population in Eastern and Southern Europe. A comparison of the two estimates of overpopulation reveals a number of areas, however, where more efficient land utilization would allow the existing agricultural population to produce at European per capita levels. This is notably true in major portions of Italy,

¹⁴ As shown in Table 7, the French figure is 26.3 Crop Units per hectare of arable-equivalent land. The European average is 24.1. These figures, as well as the ranking of the countries noted above, are derived from the index value of agricultural production (see Appendix I, Table 18) related to the arable-equivalent agricultural area, as shown in Appendix II, Table 1.

TABLE 7

"Standard" and "Surplus" Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming French Productivity per Hectare of Arable-Equivalent Agricultural Land and European Per Capita Level

Country and Region	Total Agricultural Area: Hectares of Arable-Equivalents ^a 000's omitted	Standard Agricultural Production Assuming French Yield per Hectare in Crop Units ^b 000's omitted	Standard Population with Standard Production Assuming European per Capita Level ^b 000's omitted	"Surplus" Population	
				Number ^a 000's omitted	Per Cent ^a
	(1)	(2)	(3)	(4)	(5)
Albania	454	11,940	278	522	65.8
Bulgaria	4,287	112,748	2,628	1,460	85.7
Czechoslovakia	6,929	182,238	4,248	564	11.7
Bohemia	2,865	73,350	1,756	-129	-7.9
Moravia-Silesia	1,579	41,528	968	0	0
Slovakia	2,125	55,888	1,803	494	27.5
Sub-Carpathian Russia	859	9,442	220	199	47.5
Estonia	1,618	42,553	992	-366	-58.5
Greece	3,264	85,843	2,001	628	29.3
Greece Centr. & Eub.	547	14,386	835	74	18.1
Peloponnesos	560	14,728	843	268	48.9
Cyclades	54	1,420	83	18	85.8
Ionian Islands	54	1,420	83	63	71.6
Thessaly	470	12,361	298	-13	-4.7
Macedonia	933	24,538	572	186	19.2
Epirus	156	4,108	96	78	44.8
Crete	159	4,182	97	127	56.7
Aegean Islands	86	2,262	53	52	49.5
Western Thrace	244	6,417	150	83	18.0
Hungary	7,083	186,283	4,342	130	2.9
Transdanubia	2,661	69,984	1,631	10	.6
Great Plain	3,491	91,813	2,140	45	2.1
North	931	24,485	571	75	11.6
Italy	83,618	884,022	20,607	-2,654	-14.8
Piemonte	2,947	77,506	1,807	-397	-28.2
Liguria	951	25,011	583	-287	-97.0
Lombardia	2,368	62,278	1,452	195	11.8
Venetia Trident.	2,010	52,863	1,232	-909	-281.4
Veneto	2,479	65,198	1,520	476	28.8
Venetia Giulia e Z.	1,074	28,246	658	-835	-103.7
Emilia	2,469	64,935	1,514	224	12.9
Toscana	3,594	94,259	2,197	-1,017	-86.2
Marche	1,006	26,510	618	92	13.0
Umbria	1,131	29,745	698	-283	-69.0
Lazio	2,097	55,151	1,286	-435	-51.1
Abruzzi e Molise	1,694	44,552	1,039	-47	-4.7
Campania	1,611	42,369	988	802	23.4
Puglie	1,694	44,552	1,039	254	19.6
Lucania	928	24,406	569	-243	-74.5
Calabrie	1,935	50,891	1,186	-235	-24.7
Sicilia	2,804	60,596	1,412	478	25.8
Sardegna	1,829	34,958	815	-259	-46.5

TABLE 7 (Continued)

Country and Region	Total Agricultural Area: Hectares of Arable-Equivalents ¹ 000's omitted	Standard Agricultural Production Assuming French Yield per Hectare in Crop Units ² 000's omitted	Standard Population with Standard Production Assuming European per Capita Level ³ 000's omitted	"Surplus" Population	
				Number ⁴ 000's omitted	Per Cent ⁵
				(1)	(2)
Latvia	1,639	43,106	1,005	81	8.0
Lithuania	3,115	81,925	1,910	-253	-15.3
Poland	22,270	585,701	13,653	5,694	29.4
Central	8,610	226,443	5,278	2,110	28.6
East	5,804	152,645	3,558	808	18.4
South	4,799	126,214	2,942	2,950	50.1
West	3,058	80,425	1,875	-170	-10.0
Portugal ⁶	5,967	156,932	3,658	-704	-23.8
Roumania	16,401	431,346	10,055	3,014	23.1
Old Kingdom	7,968	209,558	4,885	1,478	23.2
Bessarabia	3,589	93,076	2,170	296	12.0
Bukovina	408	10,730	250	345	58.0
Transylvania	4,486	117,982	2,750	895	24.6
Spain	84,921	981,422	21,408	-9,544	-80.4
Galalco-Asturica	1,663	43,737	1,020	677	39.9
Vascongadas y Navarra	868	23,354	544	-83	-18.0
Castilla la Vieja	2,486	65,382	1,524	-718	-89.1
Aragón	2,477	65,145	1,519	-943	-163.7
Cataluña	2,746	72,220	1,683	-780	-86.4
Valencia	2,524	66,381	1,547	-606	-64.4
Murcia	2,245	59,044	1,376	-879	-176.9
Andalucía	7,463	196,277	4,575	-1,841	-67.3
Extremadura	2,825	74,298	1,732	-1,014	-141.2
Castilla la Nueva	5,793	152,356	3,551	-2,318	-188.0
León	3,108	81,740	1,905	-957	-100.9
Balearas	476	12,519	292	-134	-84.8
Canarias	228	5,996	140	82	27.1
Yugoslavia	10,614	279,148	6,507	4,122	38.8
Dravska	619	16,280	379	307	44.8
Drinska	1,207	31,744	740	518	41.2
Dunavska	2,609	68,617	1,599	180	10.1
Moravska	1,083	28,483	664	566	46.0
Primorska	629	16,543	386	361	43.3
Savska	1,180	31,034	723	1,303	64.3
Vardarska	1,166	30,666	715	511	41.7
Vrbaska	897	23,591	550	360	39.6
Zetska	604	15,885	370	386	51.1
Beograd	20	526	12	-2	-20.0

* Percentages are computed from unrounded figures.

¹ Source: Appendix II, Table 1.

² The French productivity per arable-equivalent hectare is 26.3 Crop Units. (See Appendix I, Table 13, and Appendix II, Table 1.) Column 2 represents column 1 multiplied by 26.3.

³ The European average level of production per capita is 42.9 Crop Units. Column 3 represents column 2 divided by 42.9.

⁴ Actual agricultural populations (given in Table 6 and in Appendix I, Table 18), less standard populations as given in column 3.

⁵ Data on land utilisation are not available for provinces in Portugal.

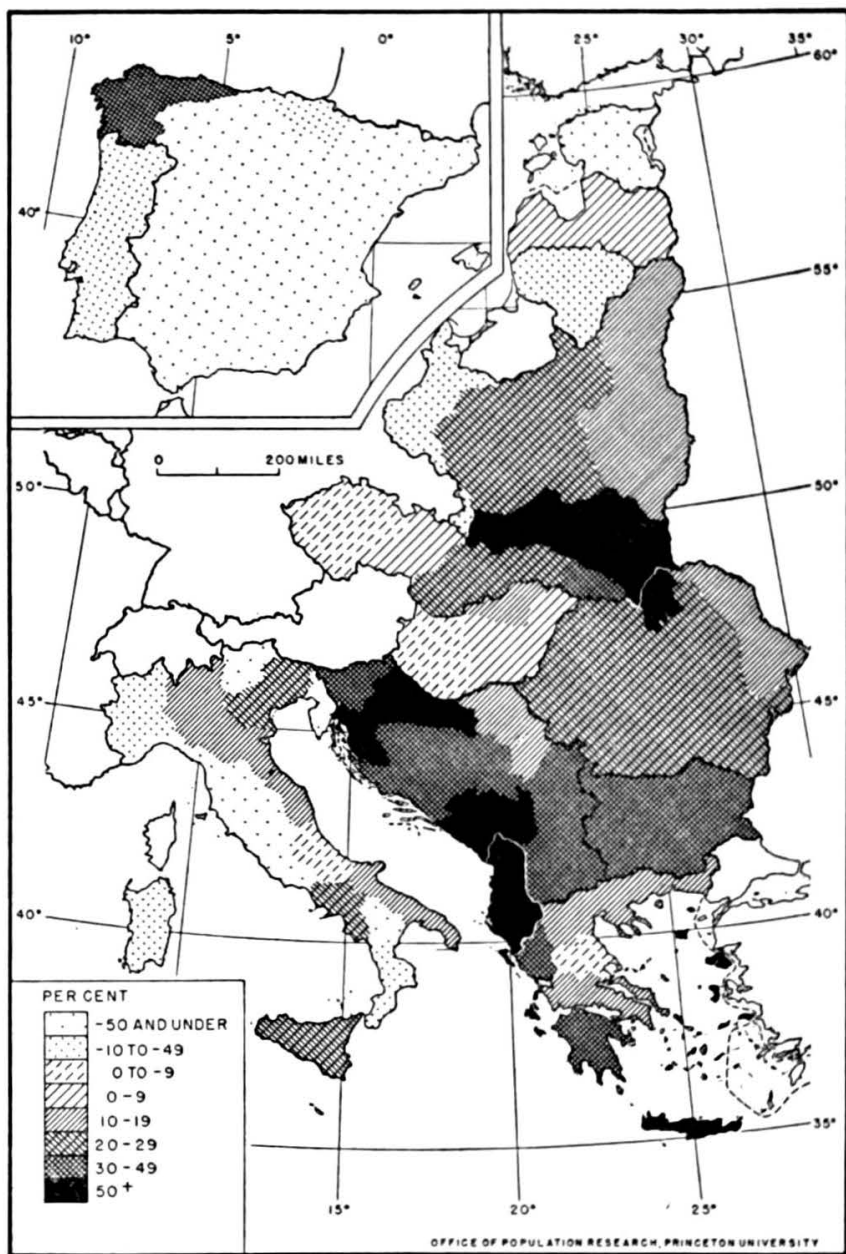


Figure 16. Surplus Agricultural Population in Eastern and Southern Europe, Assuming "Standard" Production and European Average Per Capita Level

Spain, and Portugal.¹⁸ In Spain, for example, land utilization at the moderate French level would allow a per capita value of production appreciably higher than the European average in all sections except Galaico-Asturica in the northwest. Italy and Portugal would have a national per capita production higher than the European average, although in the former case at least there would remain a number of provinces with surplus population. For the Southwestern Peninsulas as a whole, the deficit in agricultural population under these assumptions would amount to 35 per cent.

Even in the heavily populated areas of Eastern and Southeastern Europe, increased productivity per hectare would substantially reduce the calculated surplus population. For the area as a whole, the assumption of increased production reduces the surplus from the previously computed 45 per cent to 35 per cent.

Actually the application of a single standard of land utilization, a standard that is itself a statistical artifact, oversimplifies the situation with respect to areas where substantial improvement in population-product ratios might be made. The assumption is really two-fold: (a) that the "arable equivalents" are actually equal in intrinsic productivity, and (b) that the areas are therefore equally amenable to improvement. To the extent that either assumption cannot be fully supported, the possibility arises that some of the areas with greater surpluses can be improved more than those with smaller redundant population. However, Figure 16 shows more clearly than Figure 15 the areas of high concentration of agricultural population in relation to both land resources and production. Without repeating a summary, country by country, the areas that call for special comment may be noted. The areas of greatest surplus are shown to be South Poland; Bukovina in Roumania; the provinces of Savska and Zetska in Yugoslavia; Ionian Islands and Crete in Greece; and Albania. A few areas, such as Latvia and the regions of Bohemia and Moravia-Silesia in Czechoslovakia, have existing levels of land utilization higher than that of the French, and would have smaller population deficits or actual surpluses if reduced to the French standard.

¹⁸ It is unfortunate that regional differences cannot be shown in the case of Portugal owing to the absence of any data on land utilization for the various provinces. In view of the differences in per capita level indicated in Appendix I, Table 18 and in Figure 6, however, it is reasonable to suppose that considerable internal variation would be found.

For purposes of comparison, the same procedure was followed under the assumption of a French per capita level of production rather than the European average. These results are presented in Appendix II, Table 3, and may be compared with Appendix II, Table 2. Since the assumption of a French level of land utilization reduces the surplus population from that computed on the basis of existing production, but the assumption of the French per capita level of distribution increases the surplus over that computed at the European average, it is not surprising that the percentages of surplus population presented in Appendix II, Table 3, are very close to those presented in Table 6 above.¹⁶

Surplus Agricultural Populations and Demographic Prospects. The problem of supporting a large population on the land is not one that will disappear in the immediate future through demographic changes. As noted in Chapter I, Eastern, and to a lesser extent Southern, Europe are in a period of population growth comparable to that in Western Europe during the last century. Assuming the continuance of past trends in birth and mortality rates based upon European experience as a whole, the eleven countries here included as Eastern Europe would show a total increase in population by 1970 of almost 17 million. This amounts to an increase of almost 15 per cent over the population of 1940.¹⁷ Under the same assumptions, the three countries of Southern Europe

¹⁶ It may be noted that the use of the doubly standardized population figures amounts to a standard density of agricultural population per square kilometer of agricultural land. Assuming a European average per capita level, this standard density amounts to 59.4; with a French per capita level, it is 28.8, which is the actual French density (see Appendix II, Table 1). In view of the well-known demographic situation in France, the former would appear to be the more reasonable figure. It is somewhat lower than the standard densities assumed by the writers of the Royal Institute of International Affairs, Committee on Reconstruction, Economic and Statistical Seminar, No. 9, where comparable land areas are computed by a method similar to the one used in the present study. However, it is not evident from the cited study what method was used for arriving at a standard density, or why, in view of the presumed comparability of agricultural areas, it should be necessary to vary the standard density for different countries from a low of 60 per square kilometer to a high of 80.

¹⁷ The projected populations, and subsequent references to projected population composition, are derived from a previous monograph in the present series: Frank W. Notestein, Irene B. Tauber, Dudley Kirk, Ansley J. Coale, and Louise K. Kiser, *The Future Population of Europe and the Soviet Union* (Geneva: League of Nations, 1944). See especially Chap. V, "Manpower," and Chap. VIII, "The Next Decades." The basic data are given by country in *ibid.*, Appendix IV, "Population Projections for Europe and the U.S.S.R. at Five-Year Intervals, 1940-1970." The totals for Eastern and Southern Europe, total population and those of working ages (15-64), are reproduced in Appendix II, Table 4 of the present study.

would show an increase of almost 9 million by 1970, or nearly 12 per cent over the 1940 population.

In certain respects the problems of a growing population will be made even more acute in view of the probable changes in the *composition* of the population attendant on increasing size. Declining fertility will slow the rate of growth as compared with past decades, but growth will continue to 1970 and beyond. Declining fertility will not affect the size of the labor force at least until around 1960. The labor force of 1955 is already born. On the other hand, declining fertility coupled with an earlier decline in mortality will *increase* the proportion of the total population in working ages. Thus, although the projected population of Eastern Europe in 1970 shows an approximate increase of 17 million, those in the working ages (15-64) will increase by some 20 million, exclusive of war losses, or an increase of almost 28 per cent over the number in that age group in 1940. Similarly, the projected increase of about 9 million in total population in Southern Europe may be compared with an increase of almost 12 million in those ages from which the labor force is drawn. The latter represents an increase of 24 per cent over the 1940 population of those ages.

From the foregoing it is clear that the probable future trends in population size and composition in Eastern and Southern Europe signify (a) a "favorable" ratio between active and dependent population, but (b) an increasing strain on the economic organization not only to support an increasing population, but to provide a disproportionate increase in economic opportunity in the form of employment for the labor force.¹⁰

Although the foregoing projections could not distinguish the growth patterns of agricultural and non-agricultural populations, their significance for agrarian economies is clear. Even were future increases only proportional to present ratios between what may be called rural and urban populations, the inelasticity of agricultural resources and of effective demand for agricultural products would impose the larger burden on land utilization. Two further considerations serve to augment that burden. One, which has already been noted in some detail, is that by any one of several standards most agrarian economies are already faced with an agricultural

¹⁰ See *ibid.*, especially Chap. V. See also Frank W. Notestein, "Some Implications of Population Change for Post-War Europe," *Proceedings of the American Philosophical Society*, 87:165-174, August, 1943.

overpopulation of substantial proportions. The second is that the projected declines in birth rates for countries as a whole will undoubtedly take place mostly in urban and industrial centers, and only gradually extend to rural areas. In other words, if patterns almost universally observable elsewhere are followed, a disproportional share of the projected increases in population will be contributed by the agricultural populations. Only by substantial migration to the cities can that burden be reduced.

War losses in the Eastern European countries and Italy, and the losses attendant upon civil war and slow reconstruction in Spain, will reduce the total number of people below that projected without taking such losses into account. There is no *a priori* reason, however, for supposing that these losses will substantially improve the ratio of product to population. The destruction of agricultural capital—including buildings, tools and machinery, orchards, vineyards, and livestock—may for a time in certain areas at any rate offset any reduction in the number of cultivators.¹⁰

Although any temptation to deal in absolutes must be avoided, it seems safe to assert that for the present and foreseeable future the relation of population to land in Eastern and Southern Europe places great significance on the organization of agricultural production. It is accordingly to the characteristics of agricultural organization that attention must next be turned.

Characteristics of Agricultural Organization

The productivity of the agricultural worker or the economic well-being of the agricultural family is a function of many variables, including climate, soil, agrarian technique, and so on. But the relation of cultivators to the land is also a function of how the land and its product are distributed. An understanding of the property system is accordingly a fundamental prerequisite for an appreciation of the characteristics of agricultural production.

Property, Tenure, and Labor Relations. Property and division of labor clearly are of cardinal importance in determining the actual organization of agricultural production and distribution. For example, the share of produce remaining to the cultivator is a result of proprietary claims to capital and services. If land is

¹⁰ Notestein and Others, *op. cit.*, Chap. III, "The Demographic Effects of War and Their Relation to Population Projections," and pp. 167-168.

held privately and cultivated by a family group, the share of the product available for the cultivator is reduced only by taxation and charges for credit, for which commensurate services may be received. A tenant, on the other hand, must give up a fixed amount or proportional part of the product to the landlord. Landless agricultural workers ordinarily have no direct claim upon the product that is partly the result of their labors, but only a claim upon compensation for services.

The technological and economic organization of agriculture is likewise intimately related to the distribution of rights to the soil. Thus, the size of the productive unit under unified control partly determines the amount of capital that can be productively used for technological improvements. In some cases, even if owners of small plots could afford to purchase equipment its use would be scarcely feasible. It is virtually impossible for small farms acting independently to undertake irrigation, control of pests, or extensive drainage. Lack of capital and bargaining power may also place the cultivator of a small plot at a disadvantage in marketing his product. He must ordinarily sell at the time of the harvest, rather than hold his produce for higher prices. Even the motivation to increase efficiency depends partly on the distribution of resulting benefits. A temporary tenant may see little value in preserving land fertility, or adding to the immovable capital of the farm. A share tenant who must pay his rent in readily marketable crops may be actively dissuaded by the landlord from diversification and increased self-sufficiency. A large supply of landless workers may inhibit the adoption of labor-saving methods of cultivation, not simply by active intervention, but also by the simple fact that their labor may be hired at less cost than the price of machinery.

Two further aspects of land tenures are of special significance for the organization of agricultural production. The first is the unification or division of rights in the same land, or, in other words, the *type of ownership*. Despite numerous combinations and gradations, several types stand out: private, feudal, and communal ownership. The second aspect of land tenure is closely related to the first; it is the *labor system* that stems from the nature of property rights. Private ownership, if sufficiently equalitarian and if in sufficiently small units, may entail an essentially familial organi-

zation of production. This is peasant proprietorship in the strict sense. Private ownership with considerable concentration of land holdings in units larger than a single family can cultivate requires tenancy or wage labor. Feudal ownership tends to make labor assignments flow directly from the proprietary position, and indeed to be a part of that position. The labor system associated with communal ownership must depend on the organization of the kinship unit, village, or governmental unit exercising the effective control of production.

The prevailing modes of land tenure and the agricultural labor systems in Eastern Europe owe much to the agrarian reforms undertaken in the interwar period. Some areas in Eastern Europe have experienced earlier agrarian reforms as well, while Hungary and the Southern European countries have had no redistribution of land of comparable extent. Although in a very few cases the agrarian reforms were sufficiently sweeping to wipe the slate virtually clean, in each of the countries the actual property and labor systems incorporate features retained from earlier periods.²⁰

A classification of land property systems is given in Appendix III, where also the agricultural property and labor arrangements in each of the countries of Eastern and Southern Europe are surveyed. An examination of the actual variations in these important institutional arrangements indicates the hazard of making sweeping generalizations. Nevertheless, the more salient features of the productive organization of agriculture in these areas may be noted here, while observing the caution that each national system is in many respects unique and that future developments must certainly take into account previous patterns. Without a recognition of the actual problems on a national or regional basis, a general statement must also be an unrealistic one.

It should be noted that the present summary refers to the interwar period. The new governments in Eastern Europe have already introduced additional changes in land tenures since the close of

²⁰ The agrarian reforms have, for the most part, simply added another set of tenure principles to those previously existing. Although quantitatively and qualitatively of great importance, the lands affected by the reforms did not comprise the total territory of any state. It is necessary to bear these facts in mind in view of the persistence of the oversimplified view that complete uniformity of land tenures exists since the reforms were undertaken. See, for example, "Land Tenure; Eastern Europe and Near East," *Encyclopedia of the Social Sciences*, 9: 99-106.

the Second World War. The general direction of these changes seems to be similar to that of earlier reforms.

The agrarian reforms that were introduced during and after the First World War in nearly all of the countries of Eastern Europe did not create a uniform property system but did tend in a common direction: the spread of individual peasant proprietorship at the expense of large estates. Feudal tenures, with only minor modifications, had persisted in most of the countries until the time of the postwar reforms, and were virtually abolished or at least transformed to more nearly contractual tenancies by the various reform programs. Only in Poland, Hungary, and Albania of the Eastern tier of states do modified forms of feudalism persist. However, the permanent workers paid partly by allocation of land (deputatists) on some estates in the Baltic countries and Czechoslovakia, as well as in Poland and Hungary, may also be regarded as having quasi-feudal tenures. Even tenancy is not widely prevalent in most countries of Eastern Europe, the exceptions being nearly the same as those already noted in the case of feudal tenures. However, some share tenancies are to be found in all of these countries, and cash tenancies also have developed to a limited extent. Share tenancy is most marked in the countries of Southern Europe, where very frequently the landlord is an absentee. The distribution of property is most unequal in Italy, Portugal, and Spain in the South, and in Poland, Czechoslovakia, and Hungary in the East.

The development of tenancy in the Southern European countries means that hired laborers are not extensively employed, although some estates in all of these countries are operated as units. The large estates of western Poland, western Czechoslovakia, and Hungary are operated as units with hired workers. The rights of these workers are protected by various legislative measures, which are also designed to stabilize employment relations in the interest of a continued labor supply for estate owners. Naturally, the importance of hired labor, and of special provisions for farm workers, in other countries varies in direct ratio to the persistence of large estates operated as units.

The bases for the utilization of land in larger units still persist in most of the peasant economies. This is most evident in the case of the communal ownership of woodlots, meadows, and pastures. The old Slavic pattern of kinship ownership (by the *xadruqa*) of

cultivated lands has not entirely disappeared in the South Slav states, and occasionally other forms of joint ownership occur. Collective ownership or tenancy by a substantial group of cultivators is fairly common in Italy, but has received little acceptance elsewhere. Purely private and competitive organization of agriculture has been modified to some extent throughout the areas considered by the organization of various types of cooperatives.

The most common form of succession throughout Eastern and Southern Europe is the Roman Law system of equal division in kind among all heirs. Exceptions to this arrangement are to be found only in scattered areas that still follow old Slavic or Germanic practices, or in the provisions for particular types of property rights, such as the entailed estates in Hungary and the frequent temporary or permanent limitations on subdivision of land distributed through the agrarian reforms. Subdivision through successive generations, coupled with a scattering of cultivated strips originating in the feudal agrarian organization, has resulted in "parcellation" into tiny scattered plots. Few of the agrarian reforms effected any appreciable consolidation of plots,²¹ and indeed the reforms frequently parcelled out unified estates into scattered allotments. The principle of equality of benefits, common to the feudal agrarian organization and to most of the subsequent institutional modifications, has thus often been served at the sacrifice of rational productive organization.

Were the quantitative data available, it would be helpful to know the comparative situation in various Eastern and Southern European countries with respect to (1) the distribution of *properties*, that is whether a substantial proportion of agricultural land is owned by a small number of individuals, or whether private ownership by cultivators is widespread; (2) the distribution of *holdings*, that is, whether the land is predominantly farmed in small units, or whether the area under the direct supervision of the cultivator is frequently very large; (3) the distribution of *plots*, that is, whether the holding of a cultivator is a single unified farm or a more or less dispersed group of plots. A system of private property in land owned by the cultivators and farmed as a unit represents only one combination of these variables, and the com-

²¹ Some consolidation was accomplished later in Poland, but the proportion of the scattered holdings affected was very small.

TABLE 8

Proportion of Agricultural Undertakings in Several Size-Groups and Proportion of Agricultural Land Represented in These Groups, around 1930*

Country	Percentage of Undertakings				Percentage of Area			
	1-5 Ha. ^b	5-10 Ha.	10-50 Ha.	Over 50 Ha.	1-5 Ha. ^b	5-10 Ha.	10-50 Ha.	Over 50 Ha.
Bulgaria ¹	57.4	30.8	12.2	0.1	29.1	37.3	32.0	1.6
Czechoslovakia ²	59.7	21.9	17.4	1.0	20.0	19.5	39.4	21.1
Estonia ³	17.6	16.2	61.0	5.2	2.5	6.1	73.3	18.1
Greece ⁴	79.8	14.3	5.9	0.5	16.9	11.7	21.6	49.8
Hungary ⁵	67.7	17.8	13.8	1.7	14.6	12.0	22.1	51.3
Italy ⁶	66.7	18.2	13.4	1.7	17.5	13.6	26.3	42.6
Latvia ⁷	15.7	19.5	57.7	7.1	2.3	7.8	64.6	25.3
Lithuania ⁸	18.6	27.2	51.4	2.8	8.7	13.9	67.3	15.1
Poland ⁹	64.2	24.3	10.5	0.5	14.8	17.0	20.9	47.3
Portugal ¹⁰	—	—	—	—	28.0	27.5	17.0	17.5
Roumania ¹¹	75.0	17.1	7.2	0.7	28.1	20.0	19.7	32.2
Spain ¹²	78.5	8.6	10.6	2.3	18.8	7.1	15.0	59.1
Yugoslavia ¹³	67.8	20.5	11.3	0.8	28.0	27.0	35.3	9.7

* Albania is omitted in view of the absence of data allowing even a rough estimate.

^b Holdings under one hectare are excluded for lack of comparability. In some national statistics they are excluded entirely, in some they are given only if they include agricultural land, and in some building plots are indiscriminately grouped with garden plots and other small genuinely agricultural holdings. Although the exclusion means an understatement of the percentage of very small holdings, particularly where such holdings are numerous, the procedure followed seems to be the only safe one.

¹ Bulgaria, Direction Générale de la Statistique, *Annuaire Statistique du Royaume de Bulgarie*, 1939 (Sofia: 1939), p. 210.

² International Institute of Agriculture, *The First World Agricultural Census (1930)* (Rome: 1939), Vol. II, p. 166.

³ International Institute of Agriculture, *The Land Tenure Systems in Europe*, Technical Documentation for League of Nations, European Conference on Rural Life, Publication No. 4 (Geneva: 1939), p. 49. (Hereafter cited as ECRL, No. 4.)

⁴ Greece, Statistique Générale de la Grèce, *Annuaire Statistique de la Grèce*, 1935 (Athens: [1936?]), p. 118. The proportional area has been estimated from the number of holdings in each size group.

⁵ Based on data in Michael Kerék, "Agricultural Land Reform in Hungary," *Hungarian Quarterly*, 6:471-480, Autumn, 1940. The data in cadastral yokes have been converted to hectares under the assumption of equal distribution throughout each of the original class intervals. Since the number of proprietors tends to be concentrated toward the lower limit of each size-group, this conversion underestimates to some extent the proportion of small land holders.

⁶ *First World Agricultural Census*, pp. 214-215. Italy has a large number of very small holdings (under 1 hectare), amounting to 35.5 per cent of the total number of holdings reported, but accounting for only 2.5 per cent of the total agricultural area.

⁷ ECRL, No. 4, p. 49.

⁸ *Ibid.*

⁹ Distribution by number from Poland, Ministry of Information, *Concise Statistical Year-Book*, 1938. (Warsaw: 1939), p. 63; distribution by area represents 1921 data, from International Institute of Agriculture, *Agricultural Problems in Their International Aspect*, Documentation for League of Nations, International Economic Conference, May, 1927 (Geneva: 1926), p. 369. Since the latter figure repre-

bination is somewhat rare in the areas under consideration. Where tenancy is common, holdings are much more dispersed than are properties.²² Thus comparative data on the distribution of holdings may be misleading concerning the relative economic independence of cultivators. Unfortunately, statistical data for the first and third of the comparisons noted above are very scanty, and international comparisons are impossible. It is possible, however, to compare the distribution of *holdings* in various countries, and to interpret those data in view of the descriptive materials, given in Appendix III, on property and tenure systems.

In Table 8 holdings are classified according to size and each group shown as a percentage of the total area and of the total number of undertakings. The data are represented graphically in Figures 17 and 18. The large proportion of the total undertakings that are very small (under 5 hectares) is marked in all of the countries considered except the Baltic States. In these small states unusual attention was given in the postwar agrarian reforms to the establishment of medium-size farms. Large estates were virtually abolished, but they were broken up into consolidated units of fair size. Neither tenancy (which would serve to increase the number of small holdings) nor parcellation (which would serve to offset the economic advantages of the medium holding) is widespread. The data by area indicate that in these countries the small proportion of the total land held in small units is not accompanied

(Notes to Table 8, continued)

sents the situation before the agrarian reform, the concentration of large holdings is now certainly smaller. Both figures apparently include holdings under 1 hectare, not distinguished in the statistics. In the case of the area distribution the inclusion of these small holdings probably offsets part of the overrepresentation of large holdings.

¹⁰ No exact data on the number or area of holdings by size are available. It has not been possible to give even an estimate by number, except that the Portuguese situation is certainly close to that in Italy and in Spain. The estimate of the area of holdings by size-groups is derived from some very imprecise estimates in: Portugal, Ministère des Affaires Etrangères, *Le Portugal et son activité économique* (Lisbon:1932), p. 81.

¹¹ ECRL, No. 4, p. 60.

¹² Computed from data in E. Martínez de Bujanda, "Agrarian Reform in Spain," *International Review of Agriculture*, 24:118E-130E, April, 1933. Spain has a very large number of holdings under 1 hectare, accounting for 76.8 per cent of the total holdings reported and 13.2 per cent of the area reported. Most of these are truly agricultural plots.

¹³ ECRL, No. 4, p. 60.

²² This is the normal accompaniment of tenancy, and is only offset to the degree that large "entrepreneurial" tenancies are established that perhaps combine several properties into a single holding.

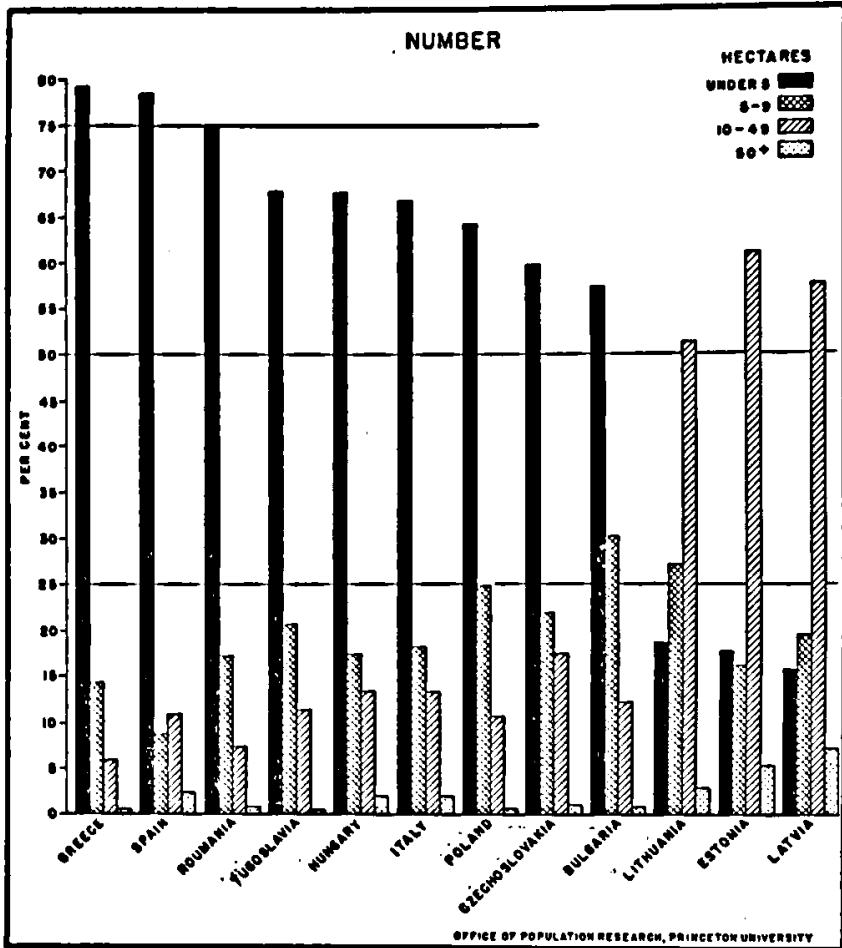


Figure 17. Distribution of the Number of Agricultural Holdings by Size in Eastern and Southern Europe

by a concentration of large holdings but rather by the predominance of medium holdings.²³

Roumania, Spain, and Greece represent the opposite extreme with three-fourths and more of the holdings under 5 hectares in extent. Were genuinely agricultural holdings under 1 hectare included, the proportion of small holdings would be even higher

²³ The data on the distribution of agricultural holdings in the Baltic countries, as in all the others, supposedly excludes area in forests, which is given separately in the national statistics. However, it is quite possible that part of the area listed as "pastures" is actually pastured woodland and therefore of fairly low quality for strictly agricultural use.

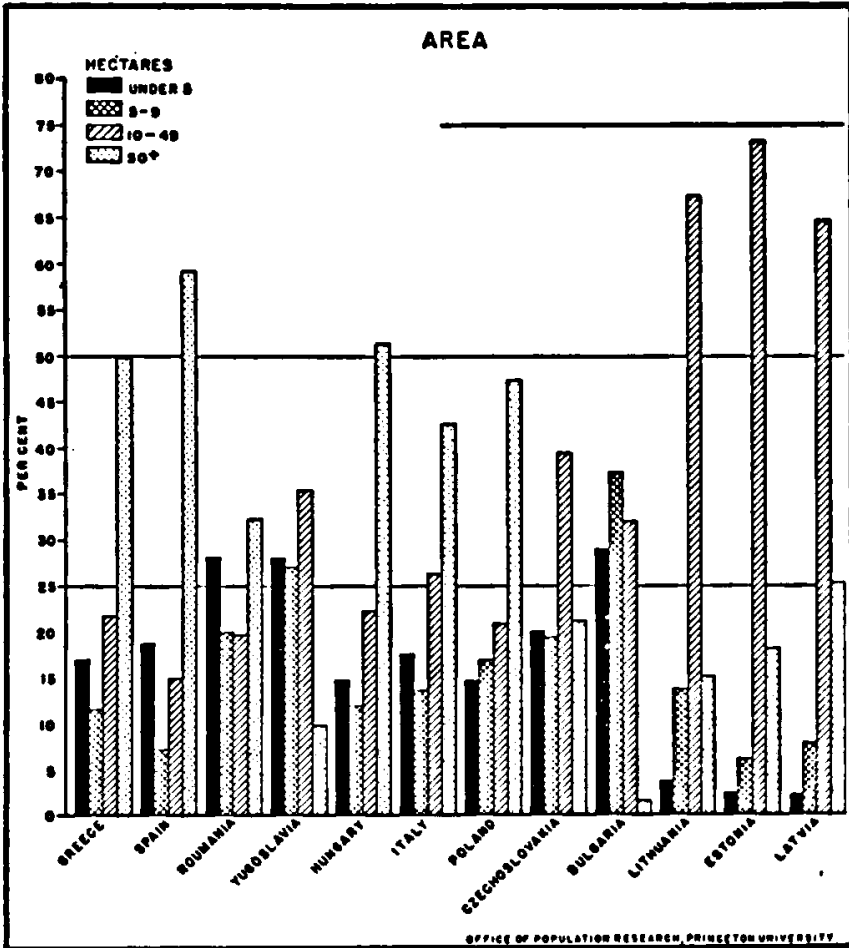


Figure 18. Distribution of the Area of Agricultural Holdings by Size in Eastern and Southern Europe

in Spain, and Italy would rank in the highest group. The importance of the large estates is indicated by the proportions of the total area held in large estates, which shows that in Hungary and Spain more than half of the agricultural area is held in units over 50 hectares in extent. Greece, Italy, and Poland have just under one-half of the farm area so held.

These indications of concentration of land holdings in the hands of a relatively small number of enterprisers are significant in themselves, but do not adequately take into account the differences

in productive organization. Thus, the proportions given for Hungary probably represent very nearly the distribution of *properties*, since small tenancies are not common. The large estates are for the most part operated as units, and therefore are statistically regarded as single holdings. On the other hand, the indicated proportions of large holdings in Italy and Spain, and to a somewhat lesser extent in Poland and Greece, substantially underrepresent the concentration of *property* in these countries, since large estates are usually broken up into share or cash tenancies (with various degrees of capitalization and supervision by the landlord as reviewed in Appendix III).

The large number of small holdings in Roumania, Bulgaria, and Yugoslavia does not represent extremes of property ownership, but rather the decided predominance of peasant farms. These are countries of small holdings which are subject to successive subdivision and further accentuated by scattering of plots. Only Czechoslovakia (except for the highly questionable proportions by area for Portugal) represents a fairly even distribution of area in each size group, although this is also offset by the fairly large number of cultivators who must share the area in the smallest group.

The contrast between the economies where small holdings predominate and those retaining numerous large estates is indicated also by the proportion of those gainfully occupied in agriculture who are landless workers. Available data allow comparison of the situation in ten of the countries here considered.²⁴ As shown in Figure 19, landless workers comprise over 20 per cent of the gainfully occupied in Italy, Hungary, and Portugal, whereas in Bulgaria they comprise only a little over 1 per cent. It is certain that Spain also should be included in the group having the highest proportions of agricultural employees; Roumania probably would be among the lowest, with Greece and Albania possibly in about the same position as that of Czechoslovakia and Poland. Clearly, employment on any extensive scale for landless workers is confined to the regions where large estates have been retained and operated as units.

The evidence deriving from the detailed review of tenure systems or from the general comparison of distribution of holdings allows

²⁴ Figure 19 is based on Tables 1-10 in Appendix III. Comparable data are not available for Roumania, Albania, Greece, and Spain. "Land holders" includes owners, tenants, and occupied members of their families.

no single answer to the abstract question about the relative efficiency or inefficiency of large or small holdings. Unquestionably some of the agrarian reforms have resulted in more intensified and diversified agriculture in many of the Eastern European countries, and just as certainly in other instances their effect was to break up into tiny and uneconomical plots many farms large enough for rational cultivation. Yet the low level of productive technique on

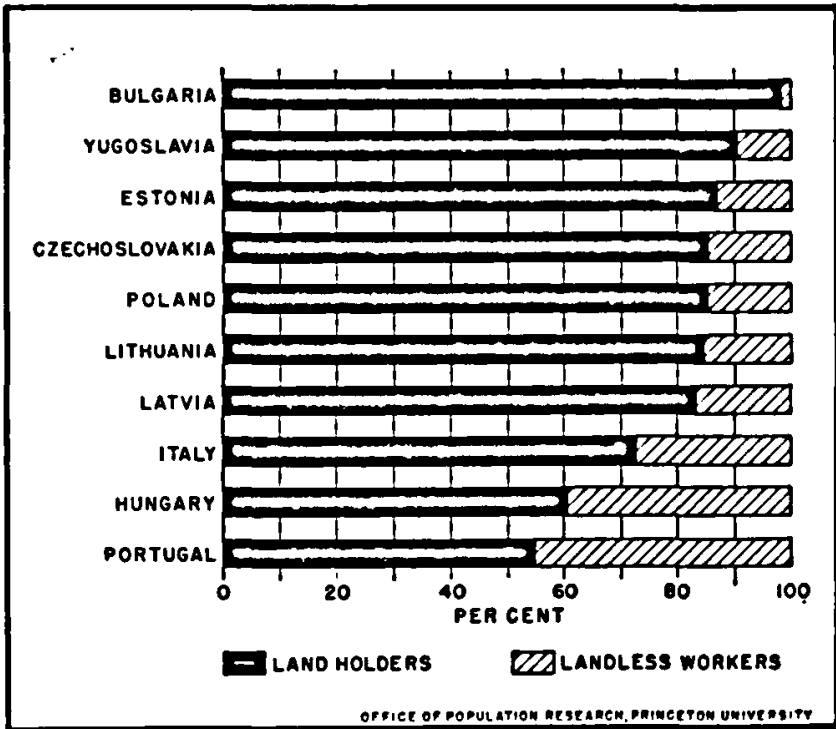


Figure 19. Proportion of Land Holders (Owners and Tenants) and Landless Workers in Eastern and Southern Europe.

some of the Portuguese and Spanish estates could scarcely be lowered by redistribution into smaller farms. The economic effects of possible organizational modifications are more fully discussed in the following chapter.

Certain conclusions do emerge, however, from the detailed examination of property and labor systems and from the statistical data on distribution of holdings.

(1) In most of the countries under consideration a majority of

the cultivators have holdings so small as to impose stringent limitations on the amount of income for the farm family, and this situation is further accentuated by the difficulty of making substantial increases in capitalization. The small holder, it is true, can spend more time per unit of area at work adding to the value of his land, especially clearing and such construction as allowed by readily available materials. But since the produce from these small holdings will scarcely support the cultivator's family at the subsistence level, increased productivity through greater capitalization cannot be expected from the investment of savings. Moreover, the size of the farms limits the amount of capital that could be economically employed under any conceivable circumstances.

(2) Although in a few countries the very small size of the majority of holdings is partially a function of a highly unequal distribution of land—notably in Hungary, Italy, and Spain, parts of Poland and Portugal—in Southeastern Europe generally it is a function of continual division of holdings resulting from a rapidly expanding population without many alternative means for support. The process of successive subdivision is generally facilitated by the rule of inheritance requiring equal division in kind among heirs, coupled with the reluctance or inability of peasants to secure even the limited number of commercial or industrial jobs.

(3) Wherever a preponderance of small holdings is accompanied by widespread tenancy, which is especially the case in Italy and Spain, the small returns from minute undertakings are further reduced by the rent in cash or kind payable to the landlord. Although the disadvantageous position of the tenant may be offset somewhat through partial capitalization, management, and possibly marketing by the landlord, the landlords' contributions are often meager in the countries here considered. Ordinarily therefore the tenant would benefit from a redistribution of property rights that did not at all affect the distribution of holdings.

(4) The position of the landless farm worker is relatively unfavorable in all Eastern and Southern European countries, but the problem of his support is most acute not in those countries where the large estates occupy a large proportion of the agricultural land but in those countries where the family farm is the usual agricultural undertaking. In the former countries the farm worker may

have little or no chance for economic improvement, and may be placed in a position of complete personal dependency on the owners of estates or farms hiring workers. But his security is considerably greater than that of the landless worker for whom there is but little chance for employment without migration or attachment to some more fortunate kinsman.

(5) Finally, it is clear that the institutional organization of agriculture in Eastern and Southern Europe places strong structural impediments to improved efficiency and increased production: the small size of holdings, frequently scattered in tiny plots and subdivided through inheritance; the difficulties of self-capitalization; and, in some cases, tenancy arrangements that not only drain off part of the cultivator's returns but limit the initiative and ability of the tenant to improve his methods.

These institutional considerations lead directly therefore to an examination of the economic and technological level prevailing in Eastern and Southern European agriculture.

Economic and Technological Level. Evidence has been presented on the low productivity of agriculture in Eastern and Southern Europe, whether measured in ratio to labor potential, the population that must be supported by the product, or the land used for agricultural purposes. This low productivity of agriculture may indeed be regarded as sufficient demonstration of the relatively poor economic organization and low level of agricultural technique in Eastern and Southern Europe. It is worth while, however, to examine a little more closely the factors responsible for the observed results.

Perhaps the outstanding characteristic of the economic organization of agriculture in the areas under consideration is that of relatively low capitalization. This is especially clear in the case of liquid capital to be used in increasing production and improving market position through the use of commercial fertilizers, provision for grading and semi-processing, and the like. It is less evident in the case of relatively fixed capital, such as land, buildings, and farm animals.²⁹ Low capitalization of the latter variety is evident in the typically small holding managed by the cultivator,

²⁹ See International Institute of Agriculture, *The Capital and Income of Farms in Europe as They Appear from the Farm Accounts for the Years 1927-28 to 1934-35*, Technical Documentation for League of Nations, European Conference on Rural Life, 1939, Publication No. 5 (Geneva: 1939).

and the low expenditure for irrigation, drainage, or other methods of increasing the fertility of the soil. But very small holdings may be overcapitalized *in ratio to the area of land cultivated*. High fixed costs relative to product thus represent a constant charge against the output, and this is not offset by higher production. This situation may be seen clearly in the case of minimum equipment, and especially, of work animals. The peasant may keep a plow and an ox, without which he could not satisfactorily cultivate his plot. On the other hand, the plow and the ox could actually be used to cultivate a much larger farm than the peasant has at his disposal. In the case of the draft animal, the cost in feed is about the same whether the animal is working or not. In a purely individualistic organization the peasant cannot own one-third of an ox or one-half of a plow. In a sense, his fixed capital in equipment is too large because his capital in land is too small. This situation prevents the use of farm machinery with its lower cost of upkeep when not in use or the accumulation of any reserve.²⁸

Because of the small size of his holding and the virtual impossibility of adding to it, the peasant is not only unprepared to weather short-term crises, but may be forced to deplete his capital over a longer period of time. That is, far from increasing the productivity of the soil through use of fertilizer, he may steadily deplete the natural soil fertility by attempting to get the highest possible yield at the lowest possible cost. Even slight diversification in the form of root and leguminous crops would improve soil fertility. But here one encounters some further characteristics of peasant farming in the European agrarian belt. In general, the level of agrarian technique is low, even for the difficult institutional and economic circumstances that prevail. Tools and equipment are frequently more limited and primitive than the economic situation as such would impose. Plowing is sometimes too shallow, although that must naturally vary with type and use of the soil. Cultivation is frequently carried on without regard to the possibility of erosion. Thus, long narrow strips of land (a function of property arrangements as previously noted) may be laid out

²⁸ See R. Bičanič, "Conditions of Agricultural Cooperation in Yugoslavia and the Chances for a Cooperative System," Report to the Conference on Cooperative Systems in European Agriculture . . . London, 1943 [mimeo.]; International Labour Office, "Social Aspects of Land Reform in Czechoslovakia," *International Labour Review*, 12:46-64, 225-244, July and August, 1926; Doreen Warriner, *op. cit.*, Chap. VIII.

vertically on a hillside and plowed lengthwise for years and even generations.²⁷ In some cases, as in parts of Roumania, manure may be used for fuel, roads, and even plaster, but rarely for fertilizer. In other cases the peasants understand the value of manure as fertilizer but have a small supply because of a small number of livestock.

The effectiveness of soil utilization is ordinarily compared in terms of yields per area of land cultivated. A comparison of yields of five important cereals, sugar beets, and potatoes, discussed in Chapter II,²⁸ shows that of the countries in Eastern and Southern Europe only Czechoslovakia ranks above the European average, whereas not one of the countries to the north and west is below the European average. The countries with the highest yields (Belgium, Netherlands and Denmark) produce more than twice as much per area as the countries with the lowest yields (Greece, Roumania, Yugoslavia, and Portugal). The difference is even more striking if the value of total agricultural production, including livestock products, is related to the total agricultural area (converted to "arable equivalents").²⁹ Again only Czechoslovakia in the Eastern and Southern group of states ranks above the European average, and of the countries here excluded only Finland ranks below that dividing line. The inclusion of livestock products, as well as other products of intensive agriculture, naturally serves to increase the disparity between the regions. Thus, expressed in index numbers (European average = 100), Portuguese production per area is 47, the figures for Belgium, Switzerland, and the Netherlands being 283, 371, and 377, respectively.

It may be objected that these distinctions are based in part upon differences in conditions of soil fertility and climate. The objection has considerable merit, particularly with respect to the sandy and infertile soils of some parts of Eastern Europe. On the other hand it is significant that the measures necessary to com-

²⁷ See Louis G. Michael, *Agricultural Survey of Europe: The Danube Basin; Part 2, Rumania, Bulgaria, and Yugoslavia*, United States Department of Agriculture, Technical Bulletin No. 126 (Washington: 1929); Warriner, *op. cit.*, Chaps. V-VII.

²⁸ See Figure 8, and also Appendix I, Table 19. Compare Warriner, *op. cit.*, pp. 97-102.

²⁹ See Figure 9. Compare Karl Brandt, *The Reconstruction of World Agriculture* (New York: W. W. Norton and Co., 1945), Chart I, "Zones of Intensity in European Agriculture," p. 13.

pensate for natural disadvantages have not been taken.²⁰ Many of the methods of soil conservation are relatively new, and fertility may be impossible to restore where the top soil is gone.

The level of agricultural technique may be indicated by a measure that is largely independent of the factors of climate and soil fertility, namely, the proportion of cultivated land annually left in bare fallow. Although still requiring interpretation in view of institutional and organizational circumstances, the treatment of fallows is approximately indicative of effectiveness of soil utilization. Fallow land, that is, that arable land which is left uncultivated or is planted only for grazing or green manure, may provide either an effective method of crop rotation and preservation of soil fertility, or an area not only withdrawn from productive cultivation but so managed that soil fertility is reduced in the process. Were adequate data available, the ratio between fallows of all kinds (including temporary pastures and green manure crops) and bare fallow (either left unplowed or plowed but with no sown cover crop) would provide an excellent basis for comparing agricultural technique. But since the land utilization statistics lack comparability with respect to classification, the most trustworthy basis of comparison is that of the proportion of arable land left in bare fallow.²¹

As indicated in the final column of Table 9, the proportion of arable land left without any utilization is under 10 per cent in all countries of Northern and Western Europe, whereas several of the Eastern and Southern European countries for which data are available have more than that amount in bare fallow. The regional differences are somewhat less marked than on other bases of comparison; the differences are sharper with respect to the less comparable but more complete data on total fallow. A few of

²⁰ Clearly, as indicated by previous discussion, technology in the narrow sense is not the sole strategic factor. Limited capitalization prevents otherwise possible changes in productive organization, whereas lack of diversification, as pointed out below, continues to make low crop yields of critical importance.

²¹ Some countries provide data only on bare fallow, whereas others give figures only for total fallow. In Table 9 no attempt was made to rectify those total figures that actually comprise only bare fallow, in view of the lack of comparability of the total figures on other grounds as indicated above.

It should be noted with respect to bare fallow that the effect on soil fertility for further cultivation is likely to be either neutral or negative. If left unplowed, the "rest" contributes little to soil fertility but rather only postpones the time of exhaustion. If plowed but not sown, the possible advantage through aeration may be more than offset by leaching or erosion.

TABLE 9

Proportion of Arable Land Lying Fallow in Certain European Countries, around 1935¹

Region and Country	Total Arable in Hectares	Total Fallow ^a in Hectares	Per Cent	Bare Fallow in Hectares	Per Cent
Northern and Western Europe					
Austria	1,977,588	152,992	7.7	17,864	0.9
Denmark	1,381,507	87,864	2.8	15,782	1.2
England and Wales	8,672,796	116,418	3.2	116,418	3.2
Finland	2,515,408	152,872	6.1	152,872	6.1
France	21,184,026 ^b	1,715,000	8.1	1,715,000	8.1
Germany	19,395,924	528,167	2.7	160,508	0.8
Luxembourg	110,510	4,782	4.8	2,681	2.4
Netherlands	960,651	2,016	0.2	2,016	0.2
Norway	823,760	5,120	0.6	5,120	0.6
Scotland	1,203,261	5,641	0.5	5,641	0.5
Sweden	8,784,895	241,284	6.5	—	—
Total: Northern and Western Europe	56,860,321	2,961,656	5.2	2,193,402	4.1^c
Eastern and Southern Europe					
Albania	806,018	76,505 ^d	25.0	61,203 ^e	20.0
Bulgaria	8,606,285 ^b	445,781	12.4	299,524	8.8
Czechoslovakia	5,848,814	88,205	1.5	88,205	1.5
Estonia	1,075,109	177,321	16.5	—	—
Greece ³	2,006,066	557,292	27.8	—	—
Hungary	5,604,603	131,272	2.8	181,272	2.8
Italy	12,752,977	2,128,844 ^f	16.7	1,528,531 ^g	12.0
Latvia	2,121,600 ^b	275,000	13.0	232,200	10.9
Lithuania	2,697,590	396,830	14.7	—	—
Poland	18,557,130	1,639,792	8.8	1,376,615	7.4
Roumania	13,666,102	538,609	8.9	538,609	8.9
Spain	15,769,862	4,992,597	31.7	—	—
Yugoslavia	7,483,947	458,478	6.1	458,478	6.1
Total: Eastern and Southern Europe	91,696,103	11,906,479	13.0	4,714,637	6.7^c
Total: of Countries Considered	148,556,424	14,868,135	10.0	6,908,039	5.6^c

^a Not including rotation meadow (for hay or seed) and feed crops.

^b 1936.

^c Computed from the total arable land in those countries for which the amount of land left in bare fallow is given. The regional and general totals used therefore differ from the figures given in column 1. The net totals are, for Northern and Western Europe, 58,125,426; for Eastern and Southern Europe, 70,147,476; combined total, 123,272,902.

^d Rough estimate based upon data in Dalib Zavalani, *Die landwirtschaftlichen Verhältnisse Albaniens* (Berlin: Parey, 1938).

^e Total fallow includes "other waste areas of arable land." Bare fallow includes this category, plus one-half of other fallows, undifferentiated in the source as between bare fallow and grazed fallow.

^f Unless otherwise specified, based upon data in International Institute of Agri-

the countries in Eastern Europe rank as well as many Western European countries, and better than some. The low proportion of bare fallow in Roumania, Yugoslavia, and Bulgaria is probably due to the preponderance of very small holdings that barely support a peasant family if nearly all available land is planted year after year. It should be noted that the low proportion of bare fallow in these countries is not accompanied by the types of crop rotation that would preserve fertility, such as the planting of legumes. These same considerations apply to a lesser degree in the cases of Poland, Czechoslovakia, and Hungary, where more intensive agricultural methods are used in some districts, and especially on some of the large estates. However, the small holders are in a position similar to that of the peasants in Roumania, Yugoslavia, and Bulgaria. Other areas in the East and South, probably including many countries for which data are not complete, not only have low yields but leave much of the cultivable land without productive or protective crops.

The comparison of effectiveness of land utilization raises still another question, that of product diversification. The customary view of peasant self-sufficiency would lead one to expect a diversified type of subsistence farming. The small domestic markets in many of the states here considered, together with poor marketing facilities and inadequate means of storage on the farm, would seem to confirm this view. Yet one-crop commercial agriculture, chiefly in the form of extensive cultivation of grain crops, is actually the prevalent mode of farm production.²²

(Notes to Table 9, continued)
culture, *International Yearbook of Agricultural Statistics, 1937-38* (Rome:1938), pp. 20-154; data for 1935.

² Figure for total arable land, from Greece, *Statistique Générale de la Grèce, Annuaire Statistique de la Grèce, 1935*, p. 108; 1929 data. Figure for total fallow from Georges Servakis and C. Pertountzi, "The Agrarian Policy of Greece," in O. S. Morgan, ed., *Agricultural Systems of Middle Europe* (New York: The Macmillan Co., 1933), Chap. IV, p. 144; 1929 data.

²² Obviously agriculture in Eastern and Southern Europe is not exclusively devoted to cereal production. However, the low diversification is evident from the small proportion of livestock products in total agricultural production. All of the countries except Estonia, Latvia, and Czechoslovakia rank well below the European average, which is 59.6 per cent. The range in Eastern and Southern Europe, exclusive of the countries noted, is 25-60 per cent, while the range in countries of Northern and Western Europe (exclusive of France) is 71-93 per cent. (See Appendix I, Table 17.) For a general survey of the extent of diversification in Europe, see International Institute of Agriculture, *Conditions and Improvement of Crop Production, Stockraising and Rural Industries*, Technical Documentation for League of Nations, European Conference on Rural Life, 1939, Publications No. 7 (Geneva: 1939); League of Nations, Economic Committee, *The Agricultural Crisis*, Publications 1931. II. B. 12 (Geneva: 1931), Vol. I.

The explanation for this seemingly anomalous situation is two-fold: (1) In the historical shift from nomadic livestock production to settled agriculture, cereal growing became increasingly important as a means for supporting a growing population by a high food yield per unit of area. (2) This trend became accentuated in the development of a commercial or market economy, with a steady rise in the demand for manufactured products in the virtual absence of domestic industry. Thus, crops are grown that will get a ready and convenient sale in domestic and international trade and at the same time provide the bulk of the cultivator's own food supply. Failing rapid transportation or the capital for domestic processing, the market organization is necessarily geared to the handling of cereals, although more recently such industrial crops as oil seeds and soya beans have been developed. Livestock and horticultural products require a convenient domestic market or rapid transportation to foreign industrial centers. Many industrial crops tend to be too bulky for economical transportation to foreign centers and must chiefly depend upon local processing or at least semi-processing.

Now this general situation means that the peasant's ability to intensify production is limited by lack of capital, and that product diversification would be at the expense of what little marketable surplus he has to exchange for manufactured products.²² Alternative ways of escaping this economic straitjacket are reviewed in the following chapter. At this point it is clear that the institutional framework, the economic organization in productive enterprise, and the level of agrarian techniques provide a closely woven net of restrictions upon increased production in agriculture. Moreover, these circumstances have further ramifications in the whole character of social life.

Further Implications of the Agrarian Situation

The consequences of the demographic and economic circumstances prevalent in Eastern and Southern Europe are many and far-reaching. It is clear, for example, that the agricultural popu-

²² In isolated instances political policy has been directed toward solution of this difficulty by limiting the effective demand for manufactured products through prohibition on sales in rural areas. This was attempted for a number of years in Serbia. See Mijo Mirković, "The Land Question in Yugoslavia," *The Slavonic Review*, 14: 399-402, January, 1936.

lations must have a low level of living as compared with farmers in other sections of Europe. This can be inferred from a markedly low per capita productivity. Although a low level of living alone would lead by implication to certain more specific aspects of peasant life, the latter are of course partly the concrete results of the particular characteristics of the agricultural organization from which the peasant's income is derived. Thus, dietary and nutritional studies indicate not only that diets are poor (as might be expected from poverty in general) but that this is partly the result of lack of diversification in agricultural production. The peasant's diet normally lacks precisely those protective foods whose production and sale, given adequate market organization, would increase his general income.²⁴ Similarly, housing facilities reflect not only a low level of living, but also a distribution of property rights and holdings that places even building space at a premium.²⁵

The low level of living of the agriculturalist in the non-industrial states was accentuated by the price differential between the peasant's income from agricultural produce and his outlay for manufactured products. This arises both from the small domestic market for agricultural products and from the small supply of manufactured goods produced by domestic industry.²⁶

Under the institutional and organizational conditions previously outlined, the dynamic situation gives little ground for optimism with respect to the future economic position of the Eastern

²⁴ International Institute of Agriculture, *Statistics of Food Production, Consumption and Prices*, Documentation for League of Nations, Mixed Committee on the Problem of Nutrition (The Problem of Nutrition, Vol. IV), League Publications 1936. II. B. 6 (Geneva: 1936); League of Nations, Health Committee, *Rural Diets in Europe*, Documentation for European Conference on Rural Life, 1939, Publications No. 28 (Geneva: 1939); League of Nations, Mixed Committee on the Problem of Nutrition, *The Relation of Nutrition to Health, Agriculture, and Economic Policy, Final Report*, League Publications 1937. II. A. 10 (Geneva: 1937); F. L. McDougall, "Nutrition and European Agriculture," *The Advancement of Science*, 6: 136-139, July, 1942; Warriner, *op. cit.*, pp. 88-91; *Economic Development in S. E. Europe*, Chap. I, "Nutrition," and Appendix tables on pp. 192-187.

²⁵ Rural housing is surveyed in the several "National Monographs" prepared for the European Conference on Rural Life. See also Warriner, *op. cit.*, pp. 91-95. For the situation in Italy, see Carl T. Schmidt, *The Plough and the Sword: Labor, Land, and Property in Fascist Italy* (New York: Columbia University Press, 1938), pp. 165-169.

²⁶ See Colin Clark, *The Conditions of Economic Progress* (London: Macmillan and Co., 1940), Chap. VII, "The Productivity of Primary Industry"; League of Nations, Economic Committee, *The Agricultural Crisis*, League Publications 1931. II. B. 12 (Geneva: 1931, 2 vols.).

and Southern European peasant. The widespread prevalence of high indebtedness relative to assets and income indicates not only that self-capitalization in agriculture is low, but also that far from accumulating capital the peasant is frequently in the position of steadily depleting his resources and of borrowing to postpone the time of complete insolvency. In fact, whether the capital depletion takes the form of soil exhaustion and obsolescence of equipment or the form of growing indebtedness, it is clear that the process may be a spiral escaped only by capital originating outside of the agricultural organization.

Again, the previously noted restrictions on increased production result in the perpetuation of inefficiencies. Even if one could assume an inherent dynamic toward improved technology and increased production, which is not at all uniformly true of agrarian economies, the network of institutional and organizational limitations would stringently restrict economic rationalization. This is not to say that no significant changes have taken place during the recent past, or that no changes may be predicted for the future, but only that, with significant exceptions, the pace of change is slow and the results in any generation may be minor.

The European agrarian economies are unavoidably involved in competitive world markets for agricultural produce. If the means can be developed for distributing food products, improved standards of nutrition might expand the market for the products of agriculture. Without new types of distribution the inelasticity of the demand for and supply of agricultural products places these economies in a steadily worse competitive position in comparison with the industrial countries and those agricultural countries with a more diversified production. This situation, coupled with the growing ease of communication that allows comparison with conditions in more prosperous areas, means that the economic disadvantages imposed by existing circumstances tend to increase at the same time as they are increasingly recognized. If a problem with respect to relative economic position in Europe now exists, its proportions are likely to grow in the absence of fairly fundamental change in economic organization.

This conclusion is given greatly added emphasis by the demographic situation. Nearly all of the agricultural regions here considered have a labor supply greater than can be fully employed

under existing conditions. Where the worker is landless, as is notably the case in Hungary, the result is overt unemployment; where the worker has a small plot of land, "hidden" unemployment is widespread. The population of these areas, and *a fortiori* the farm population, is increasing rapidly so that there are steadily more people to support within a system where both labor demand and productive organization are stringently limited.*

The summary, "too many people, too little land," is no meaningless phrase when applied to Eastern and Southern Europe so long as the level of popular aspiration is high and rising, and the means for fulfillment effectively barred. The following chapter examines some alternative solutions to the problems that appear from a review of the agrarian situation.

* In addition to Notestein and Others, *op. cit.*, see Rudolf Bičanič, "Excess Population," *The Advancement of Science*, 6: 141-145, July, 1942.

CHAPTER IV

OUTLOOK FOR ECONOMIC DEVELOPMENT

IN THE preceding chapter the basic elements in the agrarian structure and the problems of supporting a large and growing agricultural population were outlined. It is this relation of population to productive capacity which forms the central problem of this study. Changes in the observed population-product ratios may obviously be approached in two ways: increase the product or reduce the population. These alternatives are examined in this chapter with reference to the expansion of agricultural production and the possibilities of demographic solutions. But production also includes industrial output, and therefore the prospects for industrialization are discussed as a possible solution to the population-product ratio.

Agrarian Changes and Their Limits

The analysis of agricultural structure in the peasant economies as developed in the preceding chapter indicated a number of points at which the agrarian organization is poorly designed to foster production. Part of these barriers are institutional and thus intimately bound up with other institutions and with social values. If the means for directing social change are disregarded for the moment, the immediate problem then becomes: what conceivable changes in those institutions most intimately connected with agricultural production (chiefly property and division of labor) could be undertaken with results favorable to production? It is also proper to inquire what changes might be made on the strictly organizational or technical levels that, within existing or changed institutional arrangements, would increase production.

Institutional Modification. Contrary to a supposedly common pattern of social change, the institutional structure in Eastern Europe has undergone more rapid change than has the technology of production.¹ This is especially evident in the case of land tenure,

¹ This is an excellent demonstration of the falsity of the thesis that technological changes are the primary determinants of social change. Actually, as the concluding section of the preceding chapter emphasized and as the discussion in the following chapter will point out in greater detail, technological changes are always limited by the prevailing institutional and valuational system. Where rapidity of technological change and its resulting social transformations have been most in

which has undergone numerous changes in most of the states of Eastern Europe.

The modifications of tenure systems provide some basis for judging the effectiveness of land reform as a means of increasing agricultural production. Although the reforms differed in scope, specific provisions, and prevailing circumstances, some general characteristics of the several programs need emphasis. Changes in the distribution and tenure of land represented certain goals of public policy that took precedence over existing property rights. Those more desirable goals were occasionally nationalistic or narrowly political, but always aimed at a more nearly equal distribution of the means of production. The goals sought corresponded with the private interests of the individual peasants or workers who demanded land, and indeed these claimants provided the chief source of political pressure for reform legislation. *In no case, however, is there any evidence that an overall increase in agricultural production was a primary goal of the institutional changes.* In other words, the purpose of the agrarian reforms was that of an increased national income only to the extent or under the special circumstances that the greater total production resulted from peasant proprietorship. The same point may be put more simply: the purpose of the reforms was to distribute wealth rather than to produce it. If the resulting increase in the economic returns to the peasants benefiting by the reform was purchased at the cost of a decrease in the total productivity of the land, the result must be regarded as incidental and not as defeating the purpose of the reforms. This point has usually been missed in the various analyses of the results of the reforms.³ The purpose of the reforms also accounts for the fact that, despite extensive changes, some of the features of the property systems providing the most serious barriers to "rational" agricultural organization were not touched at all in the reform programs.

That past land reforms were not primarily intended to increase production need not prevent an examination of their actual effect

evidence, namely, in Western industrial society, the institutional system and social values have been peculiarly favorable to economic expansion.

³ A notable exception is provided by David Mitrany, whose comprehensive analysis of the results of the agrarian reforms in Roumania emphasizes throughout the social and political purposes of the reforms, at the frequent sacrifice of productive organization. See his *The Land and the Peasant in Rumania* (London: Humphrey Milford, Oxford University Press, 1930).

on production. The economic history of Eastern Europe has been marked by agrarian reforms and demands for reforms to such an extent that the formulators of future policy may attempt to increase prosperity by division of capital in land. Another series of land divisions would naturally have the support of every peasant with a holding smaller than the average, and is likely to be regarded by that peasant as a solution preferable to unfamiliar methods of cultivation or unfamiliar avenues of employment. The most obvious solution for "land hunger" is more land.

The economic results of previous reforms may be viewed most readily in terms of the relative advantages of large and small farm undertakings under various conditions. Since the whole tenor of the reforms was the establishment of small undertakings at the expense of large ones, the problem is one of relative productivity in view of the particular circumstances. The conditions that apply to all of the Eastern and Southern European countries in somewhat varying degree may be stated in general terms: an agrarian economy with little industrial development, a small internal market, and meager market facilities.³

Under the conditions noted certain features of the shift to small farms owned by cultivators are especially significant for the productive economy as a whole.

The needed capital is higher, relative to area, for small farms than for large ones. However, as pointed out in the preceding chapter, this higher capitalization is predominantly in the form of buildings and equipment and is not necessarily fully utilized in production. Thus the large holdings tend to yield a greater product per unit of capital by more nearly maximum utilization of work animals, equipment, and buildings. The land reforms ordinarily resulted in an increased capitalization of agriculture without commensurate increase in production.⁴ Thus, even in those

³ These conditions apply with least force in Czechoslovakia, Greece, and Portugal.

⁴ See Otto von Franke, "The Agrarian Reform in Yugoslavia," *International Review of Agriculture*, 25: 185E-197E, May, 1934; Doreen Warriner, *Economics of Peasant Farming* (London, etc.: Oxford University Press, 1939), especially Chap. VIII, "The Advantages and Disadvantages of Peasant Farming." Mitrany (*op. cit.*, pp. 228-413) notes that in Roumania the large estates were greatly undercapitalized before the reform owing to the form of tenancy whereby the burden of capitalization was mainly borne by the peasants. As elsewhere, the reform did not result in keeping the existing supply of work animals and equipment with greater utilization but rather in adding to that supply for the cultivation of the small allotments formed from the expropriated estates.

cases where the small farms could show a higher productivity per acre, they usually had a smaller *net* return.⁵

The drain of fixed costs normally prevents liquid capital accumulation on small farms, whereas the operator of the large estate may be able to increase his product through greater investment in variable costs such as fertilizer, while deriving a higher unit yield from his livestock and equipment costs. In these circumstances accumulation of liquid capital is more likely on large than on small agricultural holdings, and this conclusion is generally supported by the evidence for Eastern and Southern Europe. However, it should be noted that if the peasant has any savings he is more likely to convert them to capital than is the absentee landlord who maintains a different level and pattern of expenditure. Many estate owners in Hungary, Spain, Portugal, and Italy have failed to accumulate capital both by reason of inefficient use of existing capital and by reason of "living up" any surplus.⁶ Owners of small plots, on the other hand, either have no savings, or under exceptionally fortunate circumstances invest savings in more land for extensive cultivation.

The small holder is ordinarily expected to utilize his land resources more intensively than the large operator. In the peasant economies the small land areas would seem to require intensive use. But intensification means partly diversification (especially the growing of labor-intensive crops) and partly increased capitalization. Actually, little intensification resulted from the division of the large estates through the land reforms,⁷ because the

⁵ There is no intention here of arguing an abstract case by the inclusion of "labor costs" that actually represent the work of unpaid family workers. The costs of draft animals, equipment, and minimum installations are genuine charges against the consumable or marketable product available to the peasant family.

⁶ Warriner's claim that the peasant is more likely to accumulate capital (*op. cit.*, pp. 161-164) is thus true in a very special set of circumstances: a situation allowing the small cultivator an appropriable surplus to reinvest while estate owners maintain a "leisure class" level of consumption. In the actual situation in Eastern and Southern Europe the peasant's savings, if any, are likely to take the form of debt retirement, whereas many peasants operate at a net loss and continue cultivation by increasing their indebtedness. Warriner gives no evidence to support her blunt assertion that large agricultural enterprises do not easily accumulate capital. See also P. Lamartine Yates and D. Warriner, *Food and Farming in Post-War Europe* (London, etc.: Oxford University Press, 1948), p. 64. The role of capitalistic agriculture in large operating units is much more accurately assessed in Carl Brinkmann, "Landed Estates," *Encyclopedia of the Social Sciences*, 9: 140-143.

⁷ Except in Estonia, Latvia, and western Czechoslovakia, where the size of the land grants and favorable market situations did foster an intensive cultivation of holdings.

organization of the agricultural market remained geared to cereal production. However, in some areas of Southeast Europe there was a shift from wheat to maize cultivation and thus a greater use of labor. Although in all of the countries affected by reform legislation there is some slight evidence of increased intensification following the land reforms, it is difficult to establish that the increased production of root crops and livestock products was actually due to the extension of peasant proprietorship, except as a result of increased draft animals. Indeed, the initial effects were almost universally a decline in yields, and in some cases the sacrifice of intensive rotation systems possible on larger farms. Livestock increases were largely in draft animals and not in stock yielding marketable products.⁸ The fact that more labor can be expended per hectare of land in a small holding does not mean that all available labor could be efficiently used even under conditions of a market favorable for labor-intensive crops, and in the absence of those conditions the availability of more labor than is necessary for extensive cultivation may, and does, prove more of a handicap to increased production than the contrary.

The question for the future is whether further changes in property distribution in the peasant economies would increase the economic well-being of the individual peasant or increase the total agricultural product. (It must be noted again that the two results are not necessarily the same.) It would appear that in most of the Eastern European countries the holdings are already over-small, with few if any large holdings remaining to be divided. The problem in these areas with reference to both of the objectives noted

⁸ The most accurate and comprehensive survey of the results of the Eastern European land reforms is given by Karl Ihrig, "Les résultats des réformes agraires d'après-guerre," *Journal de la société hongroise de statistique*, 12: 405-466, 1934. Mitrany, *op. cit.*, provides the most intensive study of the effects of the reforms within a single country; for a less detailed but essentially complete analysis of the Yugoslav reforms, see Frangeš, *loc. cit.* See also Warriner, *op. cit.*, pp. 140-167; Yates and Warriner, *op. cit.*, pp. 67-70. Numerous studies have noted that small holdings in Hungary have smaller yields and in general less intensive cultivation than the large estates. For example, see A. Körmendy-Ékes, "Big Estates in Hungary," *Hungarian Quarterly*, 8: 43-58, Spring, 1937; Ladislav Lipták, "Des possibilités de l'agriculture de faire vivre les habitants; analyse statistique en égard à la repartition des propriétés," *Magyar Statisztikai Szemle*, 16: 612-621, July, 1937; Louis G. Michael, *Agricultural Survey of Europe: Hungary*, United States Department of Agriculture, Technical Bulletin No. 160 (Washington: 1930), pp. 12-16. It is not, however, necessary to conclude with Körmendy-Ékes and Lipták that a division of the large Hungarian estates would decrease production, since the large estates have in general better soils than those in the small plots, and the latter are too small for effective cultivation. There are scarcely any medium-size holdings in Hungary to compare with large and very small holdings.

above is to secure a reversal of the process of successive subdivision of holdings. In those Eastern European countries where large estates remain (chiefly Poland, Hungary, and Greece), a division of land among present employees and neighboring small holders would certainly give temporary improvement to the position of those directly benefiting by the distribution, but possibly at the further sacrifice of total product. If the goal is to maintain or increase production while achieving some more "equitable" distribution, reforms should be undertaken with *both* goals as criteria for determining procedures to be followed. A simple division of Hungarian estates among all landless claimants would probably sacrifice productive capacity, and might not materially improve the position of the recipients of small plots. Where the land is best suited for continued extensive cultivation, as seems true of much of the Hungarian Plain, some form of cooperative or collective cultivation may be a change better fitted to utilize productive capacity than an over-zealous division of estates into falsely intensive plots.*

Where the previous land reforms resulted simply in a change of title from landlord to tenant without division of the holding, the position of the cultivator was clearly improved, while productivity also increased through removal of drains upon the peasants' resources and the removal of restraints upon initiative and product structure. Similar results would appear probable wherever absentee landlords control large estates, which is very common in the countries of Southern Europe. However, where capitalization by the landlord is heavy, with unified control of productive technique and of marketing (these conditions prevail on some Italian estates), division on a purely individualistic basis would probably decrease the product. In these as in other cases, if the goal is increased production the possible institutional modifications should be restricted to those giving some reasonable chance for success.

The rational exploitation of peasant holdings now in small and

* This is at variance with the proposals of Yates and Warriner, *op. cit.*, p. 69, who see advantages in peasant farms devoted to intensive livestock raising, such as a maize-and-hogs combination. Whatever the type of ownership, production would certainly be increased by proper crop rotation including an increase in leguminous crops for fodder. However, parts of the Hungarian Plain are admirably suited to large-scale cereal cultivation, and insistence upon small-scale enterprises in these conditions is certainly "doctrinaire" (a complaint of these authors about collectivization).

scattered plots would seem to require institutional modifications of a character quite different from the main direction of previous reforms. It is consolidation rather than further scattering, increased rather than reduced size, that would allow greater productive efficiency and an increased product per capita. Scattering is a problem that the peasants of Belgium, France, and Switzerland share with the small holders of Eastern Europe. The experience in all of these areas indicates that the peasant grumbles about the inconvenience and inefficiency of his land arrangement, but is deeply suspicious of any attempt to consolidate, since he has various emotional attachments to particular plots and is moreover afraid of getting a bad exchange. Strong governmental measures are probably required for consolidation if it is to proceed with any rapidity and uniformity.¹⁰ Although the chances of success of such a program might be increased by the extensive dislocations of people and property rights during the war years, the anxiety of the peasant to retain or regain "his own" in a highly specific sense is not to be overlooked. Since scattering of holdings is constantly increased by equal division in kind among heirs (which usually means an equal division of each kind and quality of land), no very profound or lasting effects of consolidation could be achieved without prevention of subdivision below a minimum level. Those who argue that equal inheritance promotes subdivision only to an "economic minimum" and is offset by unrestricted competition and the emergence of unified holdings through superior competitive efficiency,¹¹ are assuming conditions that actually do not prevail in the agrarian economies. Notably, they assume erroneously that "superior competitive efficiency," even on a tiny holding, will result in sufficient capital accumulation to buy out the less efficient cultivators, and they assume alternative economic

¹⁰ Of the European countries where extensive agrarian reforms were undertaken after the First World War, only Poland also undertook to consolidate scattered plots. Between 1919 and 1938, 859,000 holdings comprising an area of 5,423,300 hectares were consolidated. This was somewhat less than half of the total area for which consolidation was planned. (See Poland, Ministry of Information, *Concise Statistical Year-Book of Poland*, September 1939-June 1941, p. 82; International Institute of Agriculture, *The Land Tenure Systems in Europe*, Technical Documentation for League of Nations, European Conference on Rural Life, Publication No. 4 [Geneva: 1939], p. 62.) Provision was made for voluntary initiation of consolidation but compulsory compliance by those not initiating the program but having plots in the areas to be consolidated. Abatement of land taxes and granting of governmental loans were used as inducements to consolidation.

¹¹ See, for example, C. Evelpedis, *La réforme agraire en Grèce* (Athens: no pub., 1926).

opportunity for those displaced in the process. In the absence of such alternative employment the demand for land that does develop (and this is likely to come from owners of larger rather than smaller farms) will simply increase land prices far beyond productive value even in terms of interest rates far lower than those actually prevailing in the agrarian economies.

The legal prevention of subdivision also requires alternative economic opportunity. It is doubtful if either legal change or expanded opportunity alone would succeed, in any brief period, in establishing consolidated family farms, but the two in combination, and in combination with extensive consolidation, would allow the creation of that "prosperous peasantry" so often talked about and so seldom seen in the peasant economies.

The farm labor supply, whether located on small holdings or completely dependent on employment by farm proprietors, is on the whole inefficiently used. There seems to be no basis for viewing this as a situation amenable to change by modification of the labor systems within the agrarian structure. For the most part, the productivity per labor unit is low because the capitalization per labor unit is low. The clearest exceptions are provided by the Hungarian estates, where non-productive servants represent part of the "conspicuous consumption" of the land-owning gentry. The position of some landless workers might be improved by further legislation on wages, hours, and the risks of employment. But the principal problem is that of unemployment and underemployment, and not of the particular form of labor utilization.

Institutional changes designed to increase the total and per capita product in peasant agriculture would therefore entail a reversal of previous trends in those areas characterized by small and scattered holdings, whereas the future disposition of large estates would be determined with primary attention to productive organization. No change in property or labor disposition is likely to bring any marked increase in production while capitalization per labor unit remains low and alternative means of employment are not available.

In this connection it is instructive to compare the Eastern European agrarian reforms with the collectivization of agriculture in the Soviet Union. After postwar reforms that resulted in the conversion of some large estates into state farms and of many

more into small holdings, the Soviet government undertook forced and rapid collectivization in 1929. At the present time almost all agriculture is collectivized, although modifications have been introduced to allow some gardening and livestock raising outside the structure of the *kolkhoz*.¹² Although exact data are not available, it is certainly true that productivity per capita and the area under cultivation have been greatly increased, and probably true that productivity per area has been improved. The initial effect was certainly a reduction in product, owing partly to the sheer disorganization incident to rapid change and political uncertainty, but more especially to the extensive slaughtering of all types of livestock by the peasants in protest against collectivization.

Several other features of Soviet collectivization merit attention for their bearing on the possible alternatives in Eastern and Southern Europe. The undoubtedly higher productivity per capita was made possible in part by a great increase in capitalization, which in turn was bought at the price of drastic reduction of that part of the product available to the cultivator. Higher productivity was also partly the result of improved productive techniques. Were this all the story, collectivization might be regarded as a "purely agricultural" solution for the problems of undeveloped peasant economies. But agriculture was in addition forced to supply much of the initial capital for industrialization. Moreover, the increased productivity per capita was the result of extensive shifts of agricultural population to employment in industrial centers as well as to lands hitherto not in production. This last part of the process certainly could not be duplicated in Eastern and Southern Europe.

Forced collectivization may be a more heroic measure than is required for increased agricultural productivity in Eastern and Southern Europe. It would represent institutional changes of greater severity than any hitherto undertaken. Indeed, collectivization on the Soviet model represents an integrated use of all the major points of attack here discussed separately. It is not certain that it would prove economically successful in small countries

¹² See Gregory Bienstock, Solomon M. Schwarz, and Aaron Yugow, *Management in Russian Industry and Agriculture* (New York, etc.: Oxford University Press, 1944), Part II, "Management of Collective Farms"; Warriner, *op. cit.*, Chap. IX, "The Russian Solution."

with meager resources and in a difficult international marketing situation.

Technology and Productive Organization. Within the existing institutional and organizational framework in the European agrarian countries, some increase in the value of agricultural production could be achieved through improved techniques. Deeper plowing with better plows, contour cultivation to avoid erosion, and the more effective use of manure would certainly improve yields and help to avoid soil exhaustion.¹³ Bare fallows could be eliminated and fertility partially restored by adequate rotation. Even if the capital and market situations would not allow growing feed or cash crops, the fallow land could be planted to a green manure crop. Selective breeding of livestock could be introduced, and existing stock perhaps gradually replaced by superior breeds. Plant varieties better adapted to local climatic conditions, the use of better seed, and similar changes would contribute to increased yields. These measures are part of what has come to be called "scientific agriculture," and naturally presuppose adequate technical education for the farmer in order to elicit his support. Education is in fact the crucial factor in these relatively minor changes.¹⁴

However, without other economic changes the effectiveness of the foregoing measures would be limited. Thus, chemical fertilizers require cash outlays that the peasant is poorly prepared to make, whereas the high interest rates for credit would probably offset the increased returns from crops.¹⁵ Mechanization would increase the product per unit of labor, but might not increase total product. The latter result might follow were it possible sufficiently to reduce the fixed costs of draft animals. However, mechanization

¹³ See Yates and Warriner, *op. cit.*, p. 76.

¹⁴ *Ibid.*, pp. 44-45, 88-98. See also P. Lamartine Yates, "Factors Affecting Peasant Prosperity," *The Advancement of Science*, 6: 145-148, July, 1942; J. Van der Vaeren, *The Organisation of Technical Instruction for Agriculturalists*, Technical Documentation for League of Nations, European Conference on Rural Life, 1939, Publication No. 14 (Geneva: 1939). For an analysis of the general problems of agricultural education together with a survey of actual educational facilities, see International Labour Office, *Vocational Education in Agriculture*, Studies and Reports, Series K, No. 9 (Geneva: 1929). For countries not included in this survey see League of Nations, European Conference on Rural Life, *Bulgaria* (in series, National Monographs drawn up by Governments), Publication No. 28 (Geneva: 1939); *idem*, *Lithuania*, No. 12, pp. 28-32.

¹⁵ See International Institute of Agriculture, *Conditions and Improvement of Crop Production, Stockraising and Rural Industries*, Technical Documentation for League of Nations, European Conference on Rural Life, 1939, Publication No. 7 (Geneva: 1939), pp. 17-19.

requires not only increased capital but also some consolidation of plots and holdings. The farm employer finds labor cheaper than machinery in view of the abundant supply of the former. The peasant proprietor of a small holding has no capital and a superabundance of labor. Even were the machines and improved equipment that are best suited to small-scale enterprise—hay mowers, fodder cutters, small tractors, and the like—introduced, increased capital and a product and market structure favorable to their use would be required. Above all, however, increased productivity per man-hour is no advantage to the peasant family whose labor supply is in a sense part of its fixed costs, and no advantage to the productive capacity of the economy if it necessitates displacement of labor and the displaced labor has no other productive employment.¹⁸

Livestock breeds are frequently poor in Eastern and Southern Europe, but this is partly the result of inadequate feeding. The introduction of lineage and production records and stud books, the extension of knowledge of proper care, and the use of artificial insemination might be expected to improve both draft animals and those used for livestock products. The increased products would add to the agriculturalist's inadequate diet, and possibly increase the market demand through lowered prices.

The low yields per area of land in crops and the poor quality of crops (chiefly cereals) reaching the markets in the peasant economies suggest the possibility of considerable increase in value of product within the existing agricultural framework. The situation is aptly summarized by the International Institute of Agriculture:

Of all the methods of improving agricultural technique, such as the rational rotation of crops, the use of chemical fertilisers and green manure, the introduction of hoed crops, deep tillage of the soil, perfected mechanical harvesting, etc. none has brought about such progress as the improvement of plants through selection and cross-breeding. Nor should it be forgotten that as a rule, the methods of improvement mentioned above entail considerable expense and constant care, whereas the use of improved varieties only involves the agriculturist in the slight extra expense represented by the surcharge of a few centimes per quintal of seeds, which is his modest contribution to the costs of plant selection work. The introduction of a better variety in an agricultural area means an immediate profit for the agriculturist. It improves the crop either in quantity or in quality,

¹⁸ See *ibid.*, pp. 19-20; Yates and Warriner, *op. cit.*, pp. 73-76.

while scarcely increasing the cost of cultivation. The creation of varieties with an improved yield and quality is therefore clearly one of the simplest and most effective means of raising the general level of a country's economy.

If, however, an improved variety is to give the best results, the care shown in its cultivation must correspond to its superior quality; i.e. careful methods of cultivation and intensified manuring must accompany the use of improved varieties which repay the care given to them and make it possible to obtain a maximum return from the soil. It would be useless to lay down any rule as to which should come first—the introduction of choice varieties, or the use of perfected and intensified methods of cultivation. The two systems are naturally complementary to each other. This interdependence between the improvement of methods of cultivation and that of the varieties cultivated is one of the best stimuli to agricultural progress. Among the various means of fostering agricultural progress, the improvement of plants is, at the present time, of outstanding importance.¹⁷

It is again clear that the really substantial increases in value of produce require measures of intensification and probably diversification. Diversification would actually contribute directly to the cultivator's level of living, through provision of a better diet. Improved market organization, increased variable costs in fertilizers, the development of rural industries, and the introduction of grading and other quality controls would facilitate higher returns from the land. In the absence of these other changes, plant improvement and those improved techniques possible under existing circumstances would allow small but probably not decisive increases in agricultural income.

A final technical measure of importance for increased yields is the extension or improvement of the area of cultivation. Land reclamation and improvement, especially through irrigation and drainage, would increase the product from land already under cultivation, or bring new lands into agricultural utilization. Notable efforts in this direction have been made in some of the agrarian regions, the most spectacular and highly advertised being the drainage of the Italian marsh lands. The Pripet Marshes in eastern Poland and White Russia could be drained, while substantial areas in the Balkan region and in Spain and Portugal could be irrigated with highly favorable results.¹⁸

¹⁷ *Ibid.*, pp. 9-10.

¹⁸ See International Institute of Agriculture, *Land Reclamation and Improvement in Europe*, Technical Documentation for League of Nations, European Conference on Rural Life, 1939, Publication No. 6 (Geneva: 1939). The foregoing summarizes projects and operations in Bulgaria, Czechoslovakia, Greece, Hungary, Italy, Lithuania, Poland, Portugal, and Roumania. For a brief statement on irri-

Land reclamation and irrigation projects have the obvious advantage of adding to the productive and employment capacity of agriculture, while providing employment for redundant labor supply. They have the equally obvious disadvantage of being rarely feasible in either economic or technical terms by the independent action of the agriculturalist. The scale of required action is so great that at least cooperative pooling of capital is necessary, whereas the requirement of uniform adherence to a particular project regardless of individual objections and an over-nice attention to proprietary rights indicates the necessity of governmental sponsorship in some form. In some cases, as notably the reclamation of the Pripet Marshes and extensive irrigation in the Danube Valley, an effective handling of the project would require international agreement, assuming 1939 boundaries. Given the requisite political and economic organization, there would be long-term prospects for substantially increased agricultural production. The magnitude of the required public works precludes the possibility of great gains over short periods.

Governmental action, ranging from legislative assistance to direct intervention, would be required for the rapid adoption of many of the measures needed to effect technical change in agricultural production. The same is at least equally true for such measures as disease control, insurance and credit extension, and market organization.¹⁹ The role of the government might be of the minimum variety indicated above—that is, legislative assistance—were cooperative organizations established on an extensive scale.

Actually, of course, none of the countries here considered (with

gation prospects in Spain, see E. Martinez de Bujanda, "The Spanish National Irrigation Plan," *International Review of Agriculture*, 25: 237E-248E, June, 1934. The program of "integral bonification" in Italy is treated in Cesare Longobardi, *Land-Reclamation in Italy* (London: P. S. King and Son, 1936). A more critical appraisal of results is given by Carl T. Schmidt, *The Plough and the Sword: Labor, Land, and Property in Fascist Italy* (New York: Columbia University Press, 1938), Chap. V, "Reclaiming the Soil."

¹⁹ See International Institute of Agriculture, *Government Action Concerned with Agricultural Markets and Production*, Technical Documentation for League of Nations, European Conference on Rural Life, 1939, Publication No. 8 (Geneva: 1939). An annual survey of governmental policies with respect to agriculture is given in the Institute's *The World Agricultural Situation*, Part II, "Agricultural Policy and Conditions in the Different Countries." See also *Economic Development in S. E. Europe* (London: PEP [Political and Economic Planning], 1945), Chap. V, "Marketing," Appendix on "Measures of State Intervention in Marketing," pp. 152-153, and Appendix tables, pp. 149-155.

the possible exception of Albania) is without cooperative organizations serving the rural population. The societies existing in the interwar period were highly diverse both in types of service offered to members and in general organization.²⁰ Since the services were many and varied, and frequently cut across rural-urban distinctions, it is not possible to determine the importance of agricultural cooperation in any precise numerical way. The evidence is clear, however, that the cooperative organizations were most extensively influential exactly in those areas that were most advanced in productive techniques and per capita value of product. The significance of cooperatives in some of the prosperous agrarian regions in the West bears out this relationship. It is also clear, however, that the causal relationship between cooperative organization and peasant prosperity is reciprocal, not unidirectional. Although the cooperative organization may increase the economic return or the security of the individual member, its power for "betterment" is necessarily somewhat limited by the initial resources of its participants.

The most general type of cooperative organization, in rural as in urban areas, is the "consumers' cooperative" providing for joint purchase of consumption and even production goods. Such organizations provide one means for reducing the price spread between agricultural goods sold and manufactured or other goods bought. Next in popularity to the consumers' organization in rural areas is the society for cooperative marketing, which may in fact be combined with an organization providing consumers' and producers' goods. Such cooperatives provide a measure of control over the prices received for agricultural products and thus are complementary to the cooperative purchasing activities. Through pooling of resources, aided by greater ease in securing credit on favorable terms, it is possible for small holders markedly

²⁰ For general surveys of types of cooperatives, membership, resources, etc., see Karl Ihrig, *Internationale Statistik der Genossenschaften* (Berlin: Struppe und Winckler, 1928); International Institute of Agriculture, *Agricultural Problems in Their International Aspect*, Documentation for League of Nations, International Economic Conference, Geneva, May, 1927 (Geneva: 1926); International Labour Office, *Co-operative Action in Rural Life*, Technical Documentation for League of Nations, European Conference on Rural Life, 1939, Publication No. 9 (Geneva: 1939). As noted in the text above, the complexity of organizational types and overlapping of memberships is such as to make virtually impossible a statistical appraisal of rural cooperation. (See G. Fauquet, "The Diversity of Co-operative Institutions and Their Classification," *International Labour Review*, 39: 435-458, April, 1939.) The Bibliography lists a number of sources giving national data.

to increase their productive capitalization by cooperative ventures in electrification, purchase and use of equipment, and the like. Cooperatives may also foster low-cost purchase of productive goods such as seed, feed, and fertilizer; joint determination of product structure; the introduction of quality controls, grading, and possibly improved packaging; and perhaps the establishment of processing units. If all of these activities are taken in combination, some of the disadvantages of small-scale individualistic farming may be overcome. The addition of low-cost credit facilities and reduction of various risks through cooperative insurance increases the ability of the peasant to withstand crises and avoid capital depletion.²¹

The potentialities are great for increased value of total product as well as for improved economic position of the individual peasant through extensive cooperative organization. Indeed, cooperatives may do much to overcome some of the defects of individual enterprise. Their influence is all the greater on account of the educational advantages, both formal and informal, offered by joint action and a closer integration into modern economic life. Some organizations have already operated effectively in the agrarian economies and there is some possibility of their expansion and consolidation. Within modern times crop lands have been owned in common. The persistence of joint use of pastures and forests furnishes another precedent for further cooperative action. The economic importance of the large kinship group (the Slavic *zadruga*) still persists in some areas, and other areas have somewhat similar bases for communal economic activity. The cooperative is accordingly a possible mode of partial transition in such areas from one form of economy to another.

An adequate appraisal of the potentialities for agricultural cooperation requires two elements of caution, however. *First*, the cooperatives to be successful in any major way must gain the active support of the peasants. This they may not be able to do

²¹ For brief summaries of the advantages of cooperative organization in peasant economies, see L. Feierabend, "Post-War Tasks for Farmers' Co-operatives," *The Advancement of Science*, 6: 158-161, July, 1942; International Labour Office, *Co-operative Action in Rural Life*; International Labour Office, "Social Aspects of Land Reform in Czechoslovakia," *International Labour Review*, 12: 231-234, August, 1925; C. F. Strickland, "The Cooperative Society as an Instrument of Economic and Social Construction," *International Labour Review*, 37: 729-758, June, 1938.

as direct organs of government. The cooperatives of the interwar period were often financially or otherwise dominated by governmental bureaus, and accordingly had little independent stability in cases of political crisis. The cooperatives of Hungary, Roumania, and Greece tended to be such in name only because of capitalistic or political control from above.²² Certainly the organizations are not "cooperative" unless a large measure of voluntary participation and local determination of policies is maintained.²³

Second, the cooperative is limited in its ability to *create* markets, or even to accumulate capital if the members have no surplus. It can facilitate some improvement in yields and it may further increase real income through reduction of price differentials. It is admirably suited to be an avenue of effective pooling of capital resources and, on the basis of those resources, of increasing the value of product and the employability of labor. But these more fundamental results must first presume a reasonably favorable ratio of family size to available land area and a market organization capable of absorbing and rewarding an increased quality and quantity of product.

Limits to Agrarian Solutions. The potentialities for raising per capita levels of living in the peasant economies through the expansion of agricultural production may now be summarized and appraised. The preceding paragraphs have noted a number of institutional, organizational, and technical expedients that would increase the productivity of agriculture if undertaken without other major changes in the existing general structure of the agrarian economies, and much greater advantage if undertaken along with major shifts in productive organization.

It is difficult to attach a quantitative value to the possible increase in agricultural production were all of the strictly agricultural changes undertaken. The effects of one measure of increased production, the French level of land utilization, were noted in Chapter III, where it was observed that this still would not yield a European average per capita product in most of the areas here under review.

²² Royal Institute of International Affairs, *Agrarian Problems from the Baltic to the Aegean* (London: 1944), pp. 63-68.

²³ This principle seems to hold even under the extreme form of cooperative organization represented by the collectivized farm. See Bienstock, Schwarz, and Yugow, *op. cit.*

Wagemann, arguing that industrialization would require non-existent capital which could only be accumulated by an increase of agricultural exports, thinks that technical changes in agriculture could easily increase the total product in the Balkans by 50 per cent over the course of twenty-five years.²⁴ He neglects, however, the fact that these countries are also characterized by a rapidly growing population, so that the assumed increase in production must be viewed in terms of the probable growth of the agricultural population in the same period. The agricultural population growth may be estimated by computing the projected percentage increase in total populations of the countries of Eastern and Southern Europe from 1930 to 1960²⁵ (the latter year taken as representing the end of Wagemann's twenty-five year period) and applying the percentages to the 1930 agricultural population. Table 10 shows the value of agricultural production assuming a 50 per cent increase by 1960, and the projected agricultural population for that year. These two figures allow the computation of the hypothetical per capita value of production shown in column 3 of the table. If these per capita values are expressed as percentages of the 1931-1935 European average per capita value of production (column 4) the possible effects of the increased production may be judged. For convenience in comparison, the actual 1931-1935 index values are given in column 5. As may be seen from Table 10, Czechoslovakia, Estonia, Hungary, Latvia, and Spain would under these assumptions have attained by 1960 a per capita level higher than the European average of the late interwar period. But Portugal and the remaining countries of Eastern Europe except Lithuania would remain markedly below that level; Lithuania and Italy would fall just below the average. The lack of fundamental improvement under these assumptions is especially marked in Bulgaria, Roumania, Yugo-

²⁴ See Ernst Wagemann, *Der neue Balkan; altes Land—junge Wirtschaft* (Hamburg: Hanseatische Verlaganstalt, 1939); a portion of this work containing the point under discussion has been translated as "The Pressure of Population as an Economic Force," in *Weekly Report of the German Institute for Business Research*, Supplement, June 29, 1939.

²⁵ The data on projected population size for each of the countries have been taken from the base tables in Frank W. Notestein, Irene B. Taeuber, Dudley Kirk, Ansley J. Coale, and Louise K. Kiser, *The Future Population of Europe and the Soviet Union: Population Projections, 1940-1970* (Geneva: League of Nations, 1944), Appendix IV.

TABLE 10

Possible Effects of Increased Agricultural Production in View of a Growing Population

Countries	Projected Agricultural Population and Production, 1960				1931-1935 Production Per Capita, European Average = 100 ^a
	Population (in thou- sands) ¹	Production, Crop Units (in thou- sands) ²	Production Per Capita	Production Per Capita, European Average, 1931-1935 = 100 ^a	
Albania	989	11,469	12	27	22
Bulgaria	5,081	123,591	24	57	47
Czechoslovakia	5,057	824,185	64	149	105
Estonia	602	40,183	67	155	99
Greece	3,695	90,402	24	57	50
Hungary	4,906	223,344	46	106	78
Italy	21,328	842,574	40	92	73
Latvia	1,075	73,928	69	160	111
Lithuania	1,861	77,570	42	97	73
Poland	24,648	606,516	25	57	49
Portugal	3,799	100,902	27	62	53
Roumania	17,382	406,477	24	55	48
Spain	14,000	672,299	48	112	88
Yugoslavia	13,488	263,628	20	46	38

¹ The projected agricultural populations have been computed by applying the percentage increase in each country, 1930-1960, in total populations (as calculated by methods explained in the text) to the agricultural population figures for 1930, given in Appendix I, Table 18.

² Production figures are derived by multiplying the 1931-1935 average value of agricultural production in Crop Units by 1.5, the proportion of increase suggested as possible over a twenty-five year span by Ernst Wagemann, "The Pressure of Population as an Economic Force," *Weekly Report of the German Institute for Business Research*, Supplement, June 29, 1939.

³ European per capita average, 1931-1935: 42.932. Figures rounded subsequent to computations. (See Table 8.)

⁴ *Ibid.*

slavia, and Albania, which are precisely the countries to which Wagemann's argument is primarily applied.

Actually it is to be seriously doubted whether an increase of the magnitude suggested by Wagemann could be effected in the absence of fundamental economic change, and it is difficult to determine even what such an increase would mean if confined to the existing product structure. Wagemann suggests that higher yields would allow the diversion of large agricultural areas to "other products." But without extensive changes in market structure, these other products cannot be grown or produced. *For the most part they require greater capital*, which is precisely the variable at issue.

Wagemann quite correctly points to the inadequacy of capital as a barrier to industrialization; but the same is true for agricultural expansion and intensification. As earlier noted, the self-capitalization of the more successful peasants has been largely limited to construction and land amelioration requiring little or no cash outlay. The less successful small holders have gone into debt without being able to use borrowed money or credits for greater production. Even were it possible to increase production by 50 per cent without internal market expansion and greater capital investment, the rate of capital accumulation would be very low. Without a rigid limitation of the level of consumption it is unlikely that such an increase in production would result in any appreciably increased savings available for industrial investment. Yet, as already noted, the rising consumption levels would be limited in their scope, and certainly would show no promise of being able constantly to rise at a rate faster than the growth of the population.

It is indeed the slow capital accumulation in agriculture even under favorable circumstances that points to the necessity of travelling an indirect route: the improvement of per capita agricultural production through industrialization. For without the shifting of productive resources (including labor) to other economic spheres and the correlative reduction of the persons directly dependent on the products of agriculture, no substantial gains will be made in the level of production.²⁶

²⁶ See Rudolf Bičanič, "Excess Population," *The Advancement of Science*, 6: 141-145, July, 1942; H. Böker and F. W. von Bülow, *The Rural Exodus in Czechoslovakia*, International Labour Office, Studies and Reports, Series K, No. 13 (Geneva: 1935), pp. 5-8; Karl Brandt, "The Employment Capacity of Agriculture," *Social Research*, 2: 1-19, February, 1935; Karl Brandt, *The Reconstruction of World Agriculture* (New York: W. W. Norton and Co., 1945), especially Chaps. VIII and IX; A. Jalowiecki, "The Population Question and Agriculture in Poland," *International Review of Agriculture*, 29: 359E-369E, August, 1938; Vladimir Klonov, "Recherche statistique sur la relation entre la productivité agricole et la densité et la structure de la population," *Statistický Obzor*, 18: 81-46, March, 1937; Nicholas Mirkovich, "Agriculture and Population," *Jugoslav Postwar Reconstruction Papers*, Vol. III, No. 5, 1943; Theodor Oberländer, "Übervölkerung in Ostmitteleuropa," *Baltische Monatshefte* (1933): 375-382, July/August, 1933; United Nations Conference on Food and Agriculture, Hot Springs, Virginia, May 18-June 3, 1943, *Final Act and Section Reports*, United States Department of State, Publication 1948, Conference Series 52 (Washington: U.S. Government Printing Office, 1943).

It was of course part of German policy in Southeast Europe to favor the expansion of agricultural production on a colonial basis and to discourage industrialization. (See the excellent study of Antonin Basch, *The Danube Basin and the German Economic Sphere* [New York: Columbia University Press, 1943], especially

It is conceivably possible for peasant economies to remain primarily growers and exporters of specialized and intensively produced agricultural goods within the framework of a European economic federation. This would require both a substantial drain-off of rural population to the industrial centers, and some importation of capital to effect the transition. Both of these processes might be possible, given economic and political federalism. Even in the event of a "rationally planned" European economy as a whole, however, it does not appear that regional division of labor would confine Eastern and Southern Europe to agricultural production. Indeed, it is not at all true that cultivable land is the sole significant resource in this area. In view of other resources and existing labor supply, as will be noted below, the import of industrial capital should be at least as easy as the wholesale export of people.

The net conclusion, accordingly, is that marked improvement in levels of production and consumption in Eastern and Southern Europe cannot be expected from those measures that would place first and most emphasis on agricultural production.

Demographic Solutions

The essential problem with which the present discussion has been dealing is that of the ratio between population and product. The possibilities of agricultural expansion have been examined and the limits of technical and organizational improvements in effecting a transition to higher per capita levels of living have been noted. Another solution is to reduce the number of people. Heavy emigration might offer a quick solution; over a longer period reduction of population growth may ease (but not necessarily remove) the crowding of people on the land.

Emigration. Emigration is frequently proposed as a solution for major regional differentials in economic opportunity, and, indeed, has often been used as a source of "release" for crowded areas. For the countries of origin emigration has such seemingly clear advantages that it needs to be given careful consideration.

The outward movement of population is a rapid way of reduc-

Chap. 11, "Policy of the New Plan toward Southeastern Europe.") The conclusion is unavoidable that Wagemann's "analysis" discussed above follows from the official policy and not from a scientific appraisal of the facts.

ing the size of that age group in the population that comprises not only consumers but redundant laborers and reproducers of the population. It was in fact emigration that provided a certain "safety-valve" for Eastern and Southern European rural populations before the First World War and even during the first decade after the war.²⁷ On the other hand, emigration may also have made possible the continuance of high reproductive rates. Emigration has not counterbalanced natural increase, except in a few communities, despite the fact that emigrants were chiefly in the reproductive ages. The remittances of emigrants contributed somewhat to the well-being of those left behind. However, returning migrants used savings not only to pay off farm indebtedness but also to bid up land prices to uneconomic levels.

Where fertility has already begun to decline, migration may remove "surplus" labor and further reduce growth potential without upsetting the downward trend in fertility, since the latter seems to be a response to rising aspirations and changing standards rather than a direct reaction to population "pressure." The phenomenon of declining fertility is already well established in the countries of Eastern and Southern Europe, although reproductive rates remain high.²⁸ Migration therefore might provide temporary relief while the process of change to lower fertility rates is in process.

But the experience of the interwar period and the probable future course of events appear to make this discussion almost wholly academic. After the First World War overseas migration fell off, being partially replaced by migration to countries in Western Europe, and particularly to France. Barriers to immigration have been erected by nearly all of the potential receiving countries, and there seems to be scant prospect of any marked reduction of those barriers.²⁹ Immigration provides problems of assimilating alien elements representing not only cultures substantially different from those of the receiving countries, but levels of economic development and industrial skills considerably below

²⁷ See International Institute of Agriculture, "The Migration Problem in Its Relation to Agriculture," *International Review of Agriculture*, 24: 833E-879E, September, 1933.

²⁸ Notestein and Others, *op. cit.*, p. 170 n. and *passim*.

²⁹ See Edward P. Hutchinson and Wilbert E. Moore, "Pressures and Barriers in Future Migration," *Annals of the American Academy of Political and Social Science*, 287: 164-171, January, 1945.

those of the West. The opposition of organized labor to continued immigration was based not only on the competitive labor market, but also upon the real and symbolic threat to labor security offered by workers who maintained lower levels of living.

Even the war losses sustained by the Western regions coupled with prospects of declining population may not be sufficient to render large scale immigration possible, although France and some overseas countries may again seek immigrants. Countries willing to accept permanent settlers may so specify the general and specific qualifications of acceptable immigrants that few peasants from Eastern and Southern Europe could qualify.

The barriers erected by countries potentially offering economic opportunity for larger populations are perhaps less formidable than the objections of the countries of potential emigration. The latter rightly point out that since emigrants are chiefly young adults the country of birth bears the social costs of dependency and education, only to lose productive (and possibly military) manpower. The removal of claimants upon product and economic opportunity is thus purchased at the cost of a negative selective process.

Actually, the volume of migration necessary to provide a short-run balancing of population growth would exceed by far the substantial emigration from these regions before the First World War, while the average of the interwar period probably in no country exceeded 15 per cent of the natural increase.³⁰

These objections to migration as a solution to population-product ratios are likely to be conclusive except under very special circumstances:

A period of chaos might induce a mass exodus of disillusioned people overseas, or, possibly, to the expanding regions of the Soviet Union. Such a movement naturally implies the absence of effective political barriers. With more orderly conditions there are reasons to believe that migration from Eastern Europe will be less important than it was in Western Europe during the latter part of the nineteenth century. A postwar order that leaves political tensions unresolved in the East might well bring strong incentives to emigrate, but these would probably be blocked by legal barriers to free movement erected by both sending and receiving countries in Europe. Eastern European governments would be reluctant to permit the mass exodus of their chief military asset, young men, more particularly

³⁰ See International Institute of Agriculture, "The Migration Problem in Its Relation to Agriculture," *loc. cit.*; Nicholas Mirkovich, "Agriculture and Population," *loc. cit.*

because they are the section of the adult population that will grow least rapidly. If there is general confidence in a period of peace and economic prosperity, the barriers to migration might be lowered, but the incentives to move would also be weakened.³¹

There is of course the further possibility of forced population displacement. Indeed, large numbers of European workers, peasants, and prisoners of war have been resettled, have fled to escape an unwelcome and possibly fatal political rule, or have been more or less forcibly conscripted to work or fight in support of the German military machine.³² These wartime population movements may leave a small residue of permanent transfers from the agrarian regions. Very few are likely to remain in defeated countries with disrupted economies and subject to strong peace terms. Although wartime relocations may provide some basis for a more nearly "rational" allocation of peoples relative to productive resources, it is to be expected that the deliberate policy of governments and of international organization will be rather to aid the return of displaced peoples to their native lands and villages.

Viewed abstractly, therefore, migration might provide a measure for equalizing economic opportunity; viewed in terms of past experience, present circumstances, and probable future conditions the movement of peoples on a scale necessary for appreciable results is rather improbable.

Prospects for Declining Fertility. Nor is any immediate solution for crowding on the land to be found in declining fertility. Falling birth rates may only be expected in an urban, industrial environment although not necessarily confined to strictly urban areas. The restriction of births is in fact incidental to a value-substitution already under way toward individualistic values and away from those of the large kinship organization, the hierarchical church, or the mystical state. But the evidence points to fertility reduction despite opposition of state and church, given urbanization and industrialization.³³ Part of the process may be viewed

³¹ Notestein and Others, *op. cit.*, p. 169.

³² See Eugene M. Kulischer, *The Displacement of Population in Europe* (Montreal: International Labour Office, 1943).

³³ See Notestein and Others, *op. cit.*, especially pp. 28-30, 176-178. Warriner (*op. cit.*, p. 163) raises the problem of the effect of land distribution on rural fertility, and attempts to argue against the correlation between small holdings and population increase by noting that the highest reproduction rates are those of farm employees. Actually, the property system as such is relevant in this instance only as it determines levels of living and degrees of integration into a secular, urban way of life.

as simply mechanical: disruption of family patterns, separation, and mobility. But more of it is the change of values effected by these mechanisms.

Declines in fertility are already under way in the Eastern and Southern European regions. However, further declines will probably depend on a continued shift to urban and industrial life, and will be in approximate proportion to the degree and rapidity of that shift. Moreover, the supply and employment problems for the next twenty years will scarcely be solved by declining fertility, even if net growth were to stop entirely or fall below replacement level. There are already "too many" people on the land. In the absence of major improvements in agriculture, which would be largely impossible under present circumstances, or major emigration, which would be unlikely, the remaining alternative seems to be additional sources of production and avenues for employment in industry.

Industrialization

The advantages to the peasant economies of fairly extensive and rapid industrialization have been indicated or implied at numerous junctures in the preceding discussion. Clearly the most general advantage is that of increased national productivity and economic opportunity, and the possibility of avoiding some of the limitations on economic expansion incident to agrarian productive organization. Two other "incidental" benefits need emphasis here for their bearing on the particular problems raised in this study. These are the avoidance through economic diversification of some of the risks faced by highly specialized economies, and the changes in reproductive behavior that follow the urbanization and secularization of the social structure. The relationship between industrialization and lowered birth rates means that economic development not only provides an avenue for support of an expanding population but helps to set in train those social changes that ease the burden of dependency on society.³⁴ The agrarian economies must therefore be examined with respect to the industrializa-

³⁴ See H. Böker and F. W. von Bülow, *The Rural Exodus in Czechoslovakia*, International Labour Office, Studies and Reports, Series K, No. 18 (Geneva: 1935); Tivador Szél, "L'effet d'industrialisation au point de vue du mouvement de la population," *Magyar Statisztikai Szemle*, 16: 523-544, June, 1937.

tion already in process and the relevant means and conditions for further and more rapid development.

Interwar Industrial Developments. The discussion to this point has characterized the countries of Eastern and Southern Europe as "agrarian" economies. The justification for this characterization rests on the preponderance of agriculture in the scheme of productive organization and the heavy dependence on agriculture for economic opportunity. The importance of agriculture in the economies here considered, it may be maintained, is such as to introduce qualitative as well as quantitative differences in their economic organization as compared with Western countries. There is, however, no gainsaying the differences in degree of dependency on agriculture and in degree of industrial development within the "agrarian" regions, and no intention of maintaining the position that any of the countries considered is without manufacturing establishments. A few regions have fairly long histories of industrial organization. This is notably true of the western sections of Czechoslovakia and the northern cities of Italy. Other regions, such as Catalonia in Spain, have developed industrially chiefly in the interwar period. A few areas, such as Estonia, Latvia, and parts of Poland, were more industrialized before the First World War than immediately after it, and only gradually regained their prewar position. All of the countries were increasing their manufacturing rather rapidly toward the end of the interwar period and some continued this trend under German sponsorship during the war.

The relative economic or industrial development of countries may be judged in various ways, given the requisite information. Actually, incomplete data permit a number of comparisons that are roughly indicative of degree of industrialization. These include proportion of workers engaged in industry, the per capita value of manufacturing output, and the development of transportation and communications.³⁵

Although occupational classifications are only roughly comparable, reasonable reliance may be placed on the differences in the proportion of the working population that is engaged in in-

³⁵ Other measures that readily come to mind, such as size of establishment, capital per worker, motive power per worker, or man-hour productivity, cannot be used for want of data that are comparable and at all complete on an international basis.

dustrial production. For the same reasons as previously outlined with reference to those engaged in agriculture, the comparison is made on the basis of gainfully occupied males. As shown in the first column of Table 11, the countries of Eastern and Southern Europe have in general much smaller proportions of their male labor force in mining and manufacturing than do the countries of the North and West.⁸⁶ Another measure of the extent of industrial development is the per capita value of manufacturing production. The second column of Table 11 shows this comparison, and again indicates the marked regional differences. It should be noted that the value of manufacturing cannot be interpreted as showing the efficiency of output per worker, but rather as indicating the relative importance of industrial production in the several countries.⁸⁷

The development and use of transportation and communications, although less directly an index of industrialization than the preceding bases of comparison, is rather indicative of general economic level. A general index of communications around 1935 has been constructed from a number of components, including length of railroads relative to area and population, passenger cars per capita, and the per capita use of mail, telephones, telegraph, and radios.⁸⁸ This combined index, illustrated in Figure 20, shows the

⁸⁶ "Industrialization" in the broad sense of a high degree of occupational specialization and orientation to a market economy would be measured not simply by the development of manufacturing but by the importance of commercial and financial organization. In this sense, the United Kingdom, although having almost exactly the same proportion of males gainfully occupied in industry as has Germany, is much more "industrialized" than the latter. As a comparative measure (which tends to accentuate differences in economic development), the ratio of males in industry to males in agriculture may be taken as representative of this broader aspect of "modernization." These ratios are shown in Appendix IV, Table 1.

⁸⁷ The rank order of the countries included in column 2 of Table 11 is approximately the same as that shown by an earlier study of the value of machinery per capita. The ranks by the two bases of comparison are given in Appendix IV, Table 2.

⁸⁸ Each component was expressed in index numbers relative to the European average, exclusive of Turkey and the USSR, and the general index represents an unweighted average of the components. Not only is there no convenient basis for weighting the indexes, but it may be assumed that given reasonably homogeneous results as between the separate indexes, any system of weighting would not markedly affect the results in the combined index.

Several of the component indexes are presented and discussed by Dudley Kirk in a forthcoming study of interwar European population. For comparative materials on the development of industry and transportation, see *Economic Development in S. E. Europe*, Chap. III, "Industrial Development," Chap. IV, "Transport," and Appendix tables, pp. 141-148.

TABLE 11
Industrial Occupation and Per Capita Manufacturing in Certain European Countries¹

Country	Percentage of Gainfully Occupied Males in Industry around 1930 (1)	Gross Value of Manufacturing in \$ in 1930-38 at 1926-29 Prices, per Head of Population (2)
<i>Eastern and Southern Europe</i>		
Czechoslovakia	41	100
Spain	81 ²	40 ³
Italy	81	80
Hungary	26	60
Poland	22	80
Estonia	20	.
Latvia	19	.
Portugal	19 ⁴	.
Greece	18	.
Yugoslavia	14	.
Bulgaria	13	.
Roumania	11	20
Lithuania	9	.
<i>Northern and Western Europe</i>		
Belgium	52	210
Germany	50	210
United Kingdom	50	260
Switzerland	48	.
Netherlands	44	170
Austria	39	100
France	38	140
Sweden	37	260
Denmark	33	200
Norway	29	.
Finland	18	170
Ireland	17	.

¹ The figures in column (1), when not otherwise indicated, are based on data in the International Labour Office, *Year Book of Labour Statistics*, 1941, pp. 9-11. Differing statistical procedures impair exact comparability. The figures in column (2) have been supplied by the Economic, Financial and Transit Department of the League of Nations. They aim at indicating the approximate annual gross value of manufacturing per head of population in 1930-38 in dollars at the prices that prevailed in 1926-29.

² Spain, Dirección General de Estadística, *Anuario Estadístico de España*, 1942, pp. 86-109.

³ 1935 (production in the following years was reduced on account of the Civil War).

⁴ Portugal, Instituto Nacional de Estatística, *Anuário Estatístico de Portugal*, 1936, pp. 21-23.

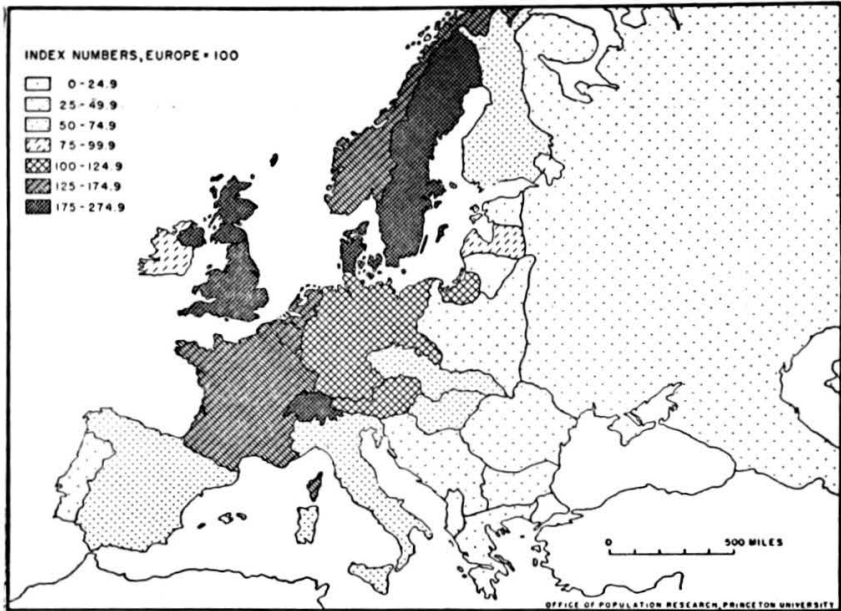


Figure 20. General Index of Communications, around 1935

following groups of countries, arranged in rank order:

- Over 175: Denmark, United Kingdom, Switzerland, Sweden
- 125-174.9: France, Belgium, Norway, and the Netherlands
- 100-124.9: Luxembourg, Germany, and Austria
- 75- 99.9: Ireland and Latvia
- 50- 74.9: Finland, Czechoslovakia, Italy, Hungary, and Spain
- Under 50: Estonia, USSR, Portugal, Greece, Poland, Bulgaria, Yugoslavia, Roumania, Lithuania, and Albania

With the single notable exception of Germany,³⁹ these results are closely parallel to those appearing from previous comparisons. Again the relatively undeveloped economic systems of Eastern and Southern Europe stand in marked contrast to the economies of the North and West.

If the countries of Eastern and Southern Europe are in gen-

³⁹ The results for Germany would certainly be modified were comparisons made for a somewhat later period, or were it possible to obtain data by districts (owing to the urban and industrial concentration in Northwest Germany).

eral "non-industrial," this does not mean that no significant industrial development has taken place. On the contrary, those countries of Eastern and Southern Europe for which reasonably complete production data are available were during the interwar period expanding their production more rapidly than were the older industrial countries of the West.⁴⁰ The same was almost certainly true of the other countries for which direct data are not available, and especially of Bulgaria, Yugoslavia, and Portugal.

A more rapid increase in manufacturing production relative to a base year is of course partly, and in the present instance perhaps mainly, a function of very small beginnings. A doubling of production may have small immediate significance in the economy if the initial output was minute. On the other hand, the logic of the situation indicates that any kind of a start may provide the potentialities for rapid increase, which if continued over some time may have more than a merely statistical significance. It is moreover true that industrialization in the course of recent history seems to be an accelerating process, that is, that countries that have entered upon a program of more or less deliberate industrialization late have also accomplished results rapidly. The acceleration is chiefly due to the ability of the undeveloped country to adopt at once the technical developments built up slowly in the older industrial economies. This leads to its own train of serious adjustments in the social structure, to which attention is directed in the next chapter. The points of immediate interest are twofold: viewed in static comparison the agrarian economies are little industrialized, whereas viewed dynamically they give strong indications of potentially rapid and ultimately significant industrial development.

Industry is already of considerable local importance in most of the Eastern and Southern European economies. In the Baltic States, Riga is the outstanding industrial center and lesser centers provide some manufacturing facilities. Warsaw, Lodz, Lwow, and

⁴⁰ Appendix IV, Table 8, shows weighted averages of national indexes of manufacturing production, with 1913 as the common base year, for the two major regions of Europe (excluding the Soviet Union, which was of course expanding much more rapidly than the rest of the continent). The weights used, as noted in the table, are national proportional shares of world manufacturing production, converted to a basis of 100 for each region. No significant change in results would have appeared had the weights been converted on a basis of 100 for the total number of countries included.

Krakow give Poland heavy as well as light industry, although part of the immediate prewar impetus given industrialization in Poland, particularly in the "Central Industrial District," was the attempt to increase armament production, and under German domination this development was then continued and directed toward the manufacture of parts for assembly elsewhere. The western provinces of Czechoslovakia, the Budapest region in Hungary, Zagreb and Belgrade in Yugoslavia, Bucharest and Ploesti in Roumania, Sofia in Bulgaria, and Athens and Salonika in Greece provide additional examples of important industrial centers in the East. Oporto and Lisbon in Portugal, Catalonian Spain, and northern Italy are comparable areas in the South.

These industrial centers provide at least a small reserve of fixed capital and trained labor. The war has caused some destruction of capital; the supply of skilled labor, despite some military losses, has probably increased. Certainly the development of manufacturing in the interwar period indicates both the possibility of and the interest in "modernization" in Eastern and Southern Europe. The possibilities for further expansion may indeed be limited by a variety of political and economic circumstances. Probably part of the development before the Second World War and certainly much of the expansion under German sponsorship have been "uneconomic" in terms of increased national levels of living or under conditions of unrestricted trade.⁴¹

It will be necessary to specify later the conditions under which industrialization can be expanded, and the circumstances most favorable to enhanced production of consumers' goods and to increased economic opportunity. The present fact remains that despite the virtual collapse of world trade in the second interwar decade, poor organization for capital accumulation, primitive marketing arrangements, and general lack of industrial traditions or training, the undeveloped economies have made some headway on the road to industrialization.

Resources and Potentialities. The major industrial centers of the world have been built around abundant natural power, chiefly coal, and accessibility to raw materials and markets, especially by means of water-borne transportation. In these respects the coun-

⁴¹ For a review of the results of German economic domination, see Basch, *op. cit.*, pp. 203-228; Frank Munk, *The Economics of Forces* (New York: George W. Stewart, 1940).

tries of Eastern Europe, and to a lesser extent those of Southern Europe, are poorly situated for industrial development.

Coal is in general of poor grade and in scant supply. The annual production during 1931-1935, shown in Table 4 of Appendix IV, reached a significant figure only in Poland, Czechoslovakia, and Spain. Production in the other countries was either very small or non-existent. The production of lignite is somewhat greater, and for fuel of this quality Bulgaria, Hungary, Yugoslavia, and Roumania may be added to the list of moderately important producers, although in Roumania the production remains very small per head of population.

Small production is not in itself an indication of small supply, since production is also relative to economic and technological development. Reliable information about available reserves in coal and lignite is meager and out-of-date, owing partly to the fact that lack of economic development has retarded the exploration of actual and potential resources. What information exists, presented in Table 5 of Appendix IV, suggests that Poland and Spain have considerable reserves of coal and that Hungary and Yugoslavia have somewhat smaller reserves of lignite that may be exploited for industrial uses. Czechoslovakia could probably be added to both groups. If the other countries are to develop major industrial centers, they must either secure their power by expensive imports or develop alternative and probably even more expensive sources of power.

Only four of the countries of Eastern and Southern Europe have become significant producers of petroleum—Czechoslovakia, Italy, Poland, and Roumania. Of these, only Roumania is a major producer. (See Appendix IV, Table 6.) Available evidence summarized in Table 7 of Appendix IV indicates that oil production in Czechoslovakia and Italy is based on scant reserves, and that the Polish production probably cannot be raised significantly. Roumania apparently retains large oil reserves, and Albania and Hungary have fairly large oil supplies, exploitation of which has barely begun.

Southern and Southeastern Europe have some potentiality for hydroelectric development, not only by a "TVA on the Danube," but by harnessing lesser streams as well. Hydroelectric power cannot compete with coal for heavy industry, and indeed is unsuitable

for steel production. On the other hand, it is of considerable importance in producing some of the lighter metals, especially aluminum, and the alloys required for the newer varieties of steel. Indeed, hydroelectric power is of growing technical importance in the development of light and somewhat decentralized industry, for which the European agrarian countries are best suited. However, hydroelectric development requires considerable initial capitalization and possibly cannot be undertaken by undeveloped economies without outside assistance and reasonable assurance of markets for industrial products. Wood is in abundant supply in most of the Eastern European countries, but cannot be considered as a significant source of industrial power; the same applies to the use of oil seeds.

The potential power for industrial development, therefore, does not provide a basis for the development of heavy industry except in favorably situated local areas. For the most part these are understandably enough the areas that already have some industrial development; the notable exceptions are provided by the meager domestic processing or industrial exploitation of petroleum resources in Albania and Hungary, and the limited processing even in Roumania.

The situation of the agrarian countries is only slightly better with respect to mineral resources. With the exception of Czechoslovakia, the countries of Eastern Europe are not notable producers of iron ore, and only Spain in Southern Europe has an abundant supply of iron. (See Table 8, Appendix IV.) Yugoslavia may have iron ore reserves that are not fully surveyed, and smaller unknown reserves may exist in other Balkan countries. Together with the small supply of high-grade coal, the paucity of iron adds a final barrier to heavy industry in many of the agrarian economies.

Patently the most readily available raw materials available in the countries under consideration are those originating in agriculture and forestry. Tobacco, oil seeds, sugar beets, some plant textiles, leather, wool, and forestry products are produced in some or all of the agrarian regions. Grains, potatoes and timber provide ample sources for industrial alcohol. The domestic production of cotton textile goods would have to depend on imported cotton

except in Italy, Bulgaria and Greece, where production could be expanded.

Spain, Czechoslovakia, Yugoslavia, Portugal, and possibly Albania have supplies of some of the strategic ores, such as nickel, bauxite, chrome, manganese, and tungsten. Some of these resources remain unexploited, and domestic smelting and processing could be increased.

The lack of materials for heavy industry, together with capital shortages, lack of highly skilled personnel, and absence of elaborate marketing arrangements, will probably render development in the manufacture of machine tools, precision instruments, or capital goods in general slow and precarious. This applies more directly to Eastern Europe than to Italy and Spain.

Upon the basis of known resources and actual or potential markets, the chief opportunity for industrial expansion in Eastern and Southern Europe would appear to be the manufacturing of standard consumers' goods, including building materials, and the processing of foodstuffs for domestic and foreign trade. There is some possibility of expanding metallurgical industry in Spain and motor production in Italy. Some mineral resources would undoubtedly figure more in foreign than in domestic use even with extensive domestic industrialization. Given relatively free trade at least within the Eastern European area, specialized metal industries might be based on ores available within the region.

The transportation facilities that will exist after the war in Eastern Europe, even barring heavy wartime devastation, would prove highly inadequate for an industrial development that requires the ability to get raw materials to factory centers and finished goods to the market. There is no advance reason for supposing that this obstacle to industrial development is any more difficult to surmount than the existing barriers to the establishment of factories and market organizations. Rather, the development of transportation must be regarded as an intrinsic part of the process of industrialization, and, like any other part of a functioning modern economy, may or may not be the strategic factor at any particular stage in the process. The natural obstacles to transportation are few except in Italy and the Southern Balkans, and the evidence of Switzerland, Austria, and other mountainous areas indicates that, given the need for transporta-

tion serving industrial centers and urban markets, natural obstacles are not decisive. The obstacles to a developed transportation system in the peasant economies are to be found in economic structures, and will be removed with the modernization of those structures.

Capital and Labor Requirements. Limited natural resources in Eastern and Southern Europe imply limited and specialized industrial development even under favorable conditions. In the absence of substantial capital and its availability for economic expansion, the conditions cannot be regarded as favorable. As previously observed, the agricultural organization allows little capital accumulation, particularly in the form of cash savings available for commercial or industrial investment. Indeed, agricultural capital may be decreasing relatively to workers employed in agriculture or persons dependent on farming for support. In the less developed countries even such liquid assets as exist are difficult to put to productive use, not only for lack of opportunity but also for lack of a commercial and financial structure fitted to modern economic development.

The countries that participated in early industrial development accomplished the transition to a diversified and expanded productive system chiefly by means of capital accumulation through trade in handicraft-produced consumers' goods, and carried it on by capital accumulation from industrial production together with continued trade with less developed areas. Greece and the countries of Southern Europe have had a part in the commercial development and to a lesser extent in the industrial development, and these countries have some prospects for further productive expansion if wartime destruction and disruption of economic organization can be made good. However, the avenues followed by those early in the field are now relatively closed to newcomers with initially poor competitive positions in world markets.

For some domestic projects (including many types of plant and road construction), foreign capital goods may not be required; the necessary capital takes the form of the food and other consumers' goods that the workers engaged on the project consume and do not themselves produce. Other workers have to produce these goods and they have to be "saved." But in a situation in which there is a large amount of hidden unemployment in agriculture,

part of the agricultural population is really not contributing to agricultural output but is being sustained by those who do contribute. In this case the producers by sustaining the non-producers are in fact saving. So far as the saving process is concerned there is little or no difference between this situation and the situation that would arise were the non-producers engaged upon some capital project. If this is true, then it should be possible for the state to obtain the capital required for its project through taxation accompanied by draining off some of the unemployed agricultural workers.

Two further possibilities remain: (1) attempted acquisition of capital equipment through exports of foodstuffs and raw materials, possibly at the temporary expense of domestic consumption, and the importation of capital goods rather than consumers' goods; (2) the import of foreign capital, whether from private or governmental sources, and whether bonded loans or equity investments. Both Japan and the Soviet Union followed the first alternative to some degree. Its advantage is that, given the requisite control over the domestic economic and social structure, the process requires a minimum of international arrangement. It is, however, still subject to trade barriers and measures of what has come to be called economic warfare. Moreover, under conditions actually prevailing in many of the agrarian economies, conditions allowing small opportunity for domestic capital accumulation, this method of securing imports of capital goods can be accomplished only by tremendous, if temporary, reduction in levels of living.⁴²

The advantage of importing capital is that it requires no such stringent limitation or reduction of levels of living, and may accomplish a transition more rapidly as well as more smoothly. However, the loans may be arranged only under conditions of a reasonable chance of political stability. Even if arranged between governments, a demonstration of net advantage to the economic structures of the capital exporters might be required.

There is no quantitative shortage of labor for industrial employment in Eastern and Southern Europe. On the contrary,

⁴² A further alternative lies in liquidation or export of substantial portions of the population. The alternative might in fact be a necessary corollary where existing product allows only bare subsistence.

labor is not only one of the principal "resources" of these areas, but the shifting of labor to more productive employment is precisely the immediate economic advantage offered by industrialization. Two qualifications must be noted, however. A quantitative abundance of labor does not guarantee the immediate availability of appropriate technical skills, and the present location of labor supplies is not necessarily the location for industrial establishments that would be indicated on other grounds. Although the situation as here analyzed points to the movement of capital to sources of labor rather than the contrary, this principle holds only with respect to major geographical shifts. Industrial employment within the present agrarian economies will still require the migration of skilled workers, in part from older industrial regions, and more substantial movements over shorter distances to draw workers off the farms into factory centers. Regardless of national boundaries, an area of relatively free movement is essential for the recruitment of industrial labor.

Industrialization will not solve all the demographic, economic, and political problems of Eastern and Southern Europe, but would aid in the solution of some of them. Any program of economic modernization will also pose new problems, some of which are briefly sketched in the final chapter.

CHAPTER V

ECONOMIC TRANSITION AND SOCIAL ADJUSTMENT

THE gloomy prophecies of "standing room only" have gradually lost their capacity to frighten the people of Northwestern Europe. The specter of overpopulation has not been laid by learned examination of postulates and conclusions; the march of events has simply made the predictions appear to be concerned with another world. Yet part of that "other world" still lies within the European continent. The populations of substantial areas of Europe have grown at such a rate as to raise again the mooted questions concerning the ratio of population size to economic organization and product. Moreover, the populations of Eastern and Southern Europe exhibit considerable potentiality for continued growth. Added to the problems common to a continent devastated by war, the areas of rapid population growth must face the additional problems of providing economic support for all and employment opportunities for a labor force that will increase even more rapidly than the total population. The growing populations face these problems under circumstances scarcely auspicious. The economic organization is predominantly agrarian. Yet agricultural production per capita is low. In this sense the countries of Eastern and Southern Europe have "too many people"; in the same sense they have "too little product."

The agricultural organization could be modernized to some extent, in some areas, under some conditions. In all of Eastern Europe except Hungary agrarian reforms have already established the peasant holding as the predominant type of enterprise. In the territories newly liberated from German domination even further agrarian reforms are once again under way. Division of land in the past has resulted in some intensification, but neither capital funds nor markets are available for greater application of intensive methods. In their absence, ample labor and small holdings simply yield "hidden unemployment." Marked improvement in the agricultural situation is only likely as part of a general economic development within the region, and this in turn may be feasible only within an expanding world economy.

The essentials of the analysis up to this point may be summarized in terms of economic opportunity. Some greater opportunity may be provided in agriculture. Some may be provided outside the region through emigration, although the practical advantages to those that remain are doubtful, and in any event small. It seems clear that opportunity must be provided in broadened production and in the services that the consequently greater per capita wealth can provide. There remain two considerations of immediate significance for the problems posed by this study: the general conditions for economic development, and the demographic significance of possible economic changes.

Industrialization and Its Organizational Requirements

Industrial development in Western Europe has been a long and essentially gradual process, revolutionary in the sense of fundamental change but not in the sense of a brief and violent transformation. It grew out of a previous and continuing commercial and financial development under conditions favorable to a change in methods and expansion of markets.

It is interesting to note that Italy, Portugal, and Spain were leaders in the so-called commercial revolution that preceded industrialization in Western Europe. Greece also is an old commercial country, and trade centers on the Danube, Black Sea, and the Baltic have been established for centuries. Why commercial development in these areas was not followed by industrial expansion as in England and Holland, and later in the rest of Western Europe, is a hotly debated issue in economic history. Certainly part of the reason for differences in economic development must lie in the inequalities of resources mentioned in the preceding chapter. It seems reasonable to suppose that another part has been due to differences in traditions and interests. Perhaps the most pointed evidence of such differences is to be found in the significance of land. In major sections of Eastern and Southern Europe land ownership not only remains the main basis of economic organization but also serves as an end in itself and as the recognized source of prestige in the community. Where the large estate still exists, it allows its owners the way of life of the landed gentry, perhaps with large numbers of, in a sense, non-productive servants and retainers, or else life in the cities as absentee land-

lords (a common phenomenon in Southern Europe). Savings may be re-invested in estate improvements, but rarely in commercial or industrial enterprises. Of greater significance is the fact that profits accumulated in manufacturing and trade are very frequently invested in agriculture in Eastern and Southern Europe. Where large estates persist, the successful tradesman who can muster the necessary funds may buy himself an estate and even the titles and perquisites appropriate to his new and considerably enhanced status. The actions of less prosperous tradesmen in predominantly peasant countries are not essentially different. The business man of the town will frequently retain a farm or buy one as a security measure. In short, the economic and social significance of land ownership in Eastern and Southern Europe tends to inhibit the growth of non-agricultural enterprise.

It is sometimes claimed that the great deficiency throughout the agrarian regions is the lack of adequate banking and other financial structures for draining off savings into productive channels. The deficiency is real. It is, however, more symptomatic of retarded development than a cause of it. Similarly, corporations could conceivably combine many small investments into a single efficient enterprise. There is no certainty that these economic forms would by their mere presence convert an agrarian and petty trading economy to an industrial one. The "normal" instruments of private productive enterprise cannot be expected to supply an interest in entrepreneurial success that has seemed less prevalent in Eastern and Southern than in Northern and Western Europe. Economic modernization requires special interests and skills as well as appropriate instruments and resources.

The reasons for retarded economic development are not completely irrelevant to the modern problems of productive expansion in the agrarian states. In so far as those reasons continue in force they condition present action. However, care must be taken not to pose the practical issues falsely. The problem faced by undeveloped areas seeking greater production and income is not how to reproduce the conditions that accounted for Western industrialization. The technology and forms of economic organization as developed in the West are no longer confined to that region. They have rather become part of the relevant economic environment everywhere. The pattern of historical change followed in the

West, and therefore regarded by Western scholarship as "natural," will almost certainly not be repeated in contemporary undeveloped areas. The accumulated experience of industrial countries now can be put to use elsewhere, thus making possible more rapid change. In point of speed, new industrial programs are likely to be more revolutionary than the original version. Moreover, the pervasive influence of modern forms of economic control—corporations, cartels, and state economies—virtually assure that new industrialization will not be simply an accelerated recapitulation of the past. The new techniques of organization may and probably must be used in areas undergoing modernization.

The essential points in these circumstances are several. In most of Eastern and Southern Europe industry has not developed rapidly, yet any program of economic expansion would seem to require such industrialization as is objectively feasible. The historical processes of economic expansion cannot be repeated, even if it were desirable, since the results of those processes already constitute a new set of conditions in all parts of the world. An unplanned and unsponsored growth of small industrial establishments by private initiative may be too slow for present conditions. This inference flows from the present state of world economic organization. It is given added force by the disadvantageous conditions in the agrarian regions. Both general and particular circumstances indicate rapid transition with considerable planning or else a degree of continued impoverishment seriously disturbing to world peace and prosperity.

The foregoing argument implies a considerable measure of governmental direction and planning if economic modernization is to be achieved. However, the particular circumstances prevailing in the European agrarian regions, and especially in Eastern Europe, argue against development on narrowly national bases. If autarchical principles can have even local success anywhere, it is not in the belt of small states poor in resources and with limited markets. Governmental sponsorship of economic development presupposes political stability, internal and external. It also presupposes a large measure of international cooperation, often attempted in Eastern Europe but hitherto thwarted by intraregional jealousies and by effective opposition from the great powers. Given

political stability and regional cooperation, political authorities can foster economic change in a number of ways.

1. Marketing aids and market security are probably essential.¹ The strongest advocates of free trade have always acknowledged the need for protecting infant industries. This protection may take the form for instance of tariffs and other restrictions on imports, or of subsidies and tax remission, or of the provision of power or transport facilities at special rates. Whatever the form, some government plan and policy is implied; but it is important to avoid an autarchical distortion of such policies and to carry them out with appropriate regard to world and regional economic growth.

2. A stable monetary system and fiscal policies that do not impede capital accumulation are needed. Like political stability, these are conditions difficult to achieve in the face of international disorder. Price controls and official rates of exchange may of course be determined unilaterally. This is a variety of economic warfare. To a significant extent, therefore, the internal problem of fiscal policy is inextricably also a question of external relations, areas of trade, and the like. Indeed, in modern Europe it is difficult to find "purely local" questions that are also of significance for economic development.

3. An appropriate weighting of the factors in industrial location—resources, markets, transportation, power, capital, and labor supply—is an important part of the necessary planning for economic expansion. The relative importance of these factors varies with the type of industry, and with particular local conditions. Such recent technological developments as power transportation in the form of electricity have changed the relative strategic importance of the several factors. Light consumers' goods industries may be located with greater attention to labor supply and market demand than was customary in older industrial economies. Recent American experience indicates that some light industries (especially textiles) may be almost as mobile as labor, and perhaps more so in view of the greater ease of control. The decentralization of light industries may therefore be prompted by local markets

¹ With reference to the advantages of price stability in agriculture, see P. Lamartine Yates and D. Warriner, *Food and Farming in Post-War Europe* (London: Oxford University Press, 1943), Chap. VII, "Marketing."

for the industrial product and availability of agricultural raw materials.

4. General education of longer duration and more extensive coverage of the population than at present, supplemented by free technical education for all ranks of industrial personnel, is essential for economic modernization with an elaborate division of labor. Public employment services and industrial recruiting programs may be necessary. Only by recruiting and training workers for new occupations will the over-all quantitative supply of labor, which is certainly adequate, have the appropriate skills and be at the right places.

5. A barely calculable short-range difference in income will probably not be a sufficient incentive to promote rural-urban migration. The attractions of commercial and industrial employment must be great enough to overcome intrinsic barriers to mobility: property interests, kinship ties, and the pull of the familiar. The potential migrant may be viewed as choosing between alternatives. The new opportunities need be least where his economic and social situation is poorest. Thus landless workers and dependent members of land holders' families would be most easily recruited for industrial employment. Official policy may either weight the alternatives negatively, by disrupting the economic and social position of the agriculturalist—as by forced collectivization—or positively, by fostering sufficiently greater opportunities in other fields of production. The greater opportunity must include a security at least equal to that enjoyed by the agriculturalist. For the most part, the hazards of industrial unemployment have been regarded as greater than the hazards of the agricultural market. The whole economy would profit by measures that will increase the willingness of peasants to accept industrial jobs, and their ability to do so without substantial economic and social loss.

The Change to an Urban, Secular Way of Life

Recognition of the economic values of industrialization among leaders of the peasant societies is somewhat modified and in some cases nullified by fears concerning the social results of the process. In this field it is difficult to separate fact and fancy, and the question is not soluble by fact alone. There are genuine differences

in values that find expression among exponents of ruralism and urbanism.

In the actual conditions prevailing in the agrarian regions of Europe, the alternative on the one hand is rural poverty, and a growing redundant population on the land; on the other hand, there is the alternative of industrial urbanization, which will inevitably lead to certain changes in structures and values, but need not intrinsically lead to the material poverty and economic insecurity accompanying industrialization in the West.

A "middle way," so often sought in situations offering uncomfortable alternatives, is frequently proposed in the form of industrial decentralization with part-time farming. This program might offer a means for preserving economic security and avoiding acute crowding, and is perfectly possible for light consumers' goods industries in a planned economic expansion. But if the industries are large enough and numerous enough to provide substantial economic benefits, the necessary organization of communications and markets will lead to life in a generally urban context, whatever the specific size and organization of the local community.

The evidence in Western Europe and America is that the farmer gets at least partially urbanized in the process of general urban growth and developing communications. It seems safe to predict that this hazard is intrinsic, and that those who plan the development should not expect the preservation of all rural traditions by the device of industrial decentralization. On the contrary, decentralization may well hasten the process of rural change.

Urbanization and the shift to an industrial market economy unquestionably bring about the process of secularization, that is, the breaking down of particularistic ties and the affiliation of the individual with larger and more specialized groups. The family and the village community cease to be the focus of social life, while occupational and similar groups gain in social and individual importance. This is sometimes referred to as an increase of secondary-group at the expense of primary-group contacts. The family's role in the individual's emotional life may be enhanced; its role as the center of a whole range of his activities may decline. The shift away from a familistic type of society has gone on apace in the Western World, and has accompanied Westernization in all parts of the globe. It is accompanied by a greater emphasis on

individual worth and personality and less on subjection of the individual to the small group.

A process accompanying and resulting from that of secularization in its broadest sense is the introduction of increased deliberate control of fertility and mortality. Essentially the change stems from individualistic values conducive to small families and to the extension of public health and private medical care. The process as a whole, starting from high birth rates and death rates and moving to a less wasteful balance of gains and losses, is sometimes called the "vital revolution." The process typically starts with reduction in death rates, with a considerably retarded control of fertility. The gap between the two changes results in an extremely rapid population growth, experienced in Western Europe in the last century and spreading to other sections of Europe and the world during the present century.

The point of present interest is that the "vital revolution" is already under way in Eastern and Southern Europe, but the fall in death rates has not yet been compensated by declining fertility. The pattern of change in the agrarian countries appears to be following that previously established in the West. Capitals and other large cities already have net reproduction rates well below the replacement level. But between urban and rural areas the differences in rates are very great, and the predominance of the rural population assures the continued and fairly rapid growth of the populations as a whole.² It is the processes of urbanization and secularization, and indeed the whole complex of economic modernization, that may be expected to aid the completion of the "revolution."³ The problems of an expanding population may be met by greater production or by reducing the rate of growth. If the two can be achieved by essentially the same processes, the chances for success are so much the greater.

² See a companion volume in this series by Dudley Kirk on the population of interwar Europe, to be published.

³ There is no intention here to claim that the family limitation pattern results from economic expansion *per se*, but the two have gone together in the Western World, and even in the industrialization of the Orient, in face of highly entrenched familistic values. (See Irene B. Taeuber and Edwin G. Beal, "The Dynamics of Population in Japan, A Preliminary Report," *Mubank Memorial Fund Quarterly*, 22: 222-255, July, 1944.) The dynamics of the relationship involves educational development, personal mobility, and other mechanisms for the dissemination of individualistic values, while changed circumstances make the acceptance of the values feasible.

Retrospect and Prospect

The agrarian economies of Europe have no monopoly on difficult problems in the postwar world. For some of these problems, here as elsewhere, there may be no comfortable and eminently rational solutions. Even when solutions seem possible from an abstract point of view, the actual complexities of adjustment may preclude an otherwise effective program of action. For example, one of the results of secularization in the Western World has been an increase in nationalism, based, with important exceptions, on ethnic homogeneity. Nationalism may lead either to peace or war, depending upon both its vigor and its direction. The evidence from the United States and Russia indicates the possibility of relatively non-aggressive national states, uniting many ethnic groups, given relative international security. But in Eastern Europe any increase in nationalism will require exceptional statesmanship and political skill. It is clear, however, that the chance for solution is increased to some degree if the problems are correctly understood.

The present study has been confined to a relatively narrow sector of the total social situation in Eastern and Southern Europe, although the relevance of elements other than those directly discussed has been indicated at numerous junctures. In the nature of the case abstraction is less crucial in analyzing economic and demographic circumstances than in predicting the future or, especially, in formulating policy. The maximum practical usefulness of scientific appraisal is in presenting facts relevant to decisions, while the latter are made on other grounds as well.

The circumstances outlined in this study indicate a growing problem of poverty and insecurity on the land that may or may not be solved in a manner satisfactory to the tillers of the soil or the statesmen of the world. Whatever course of action is taken will not be equally satisfactory to all those whose interests and aspirations are involved. The line of analysis here developed seems to indicate that solutions to some of the economic problems are possible, given both the appropriate world political conditions and the willingness of the affected peoples to incur the inevitable sacrifices of traditional values. This conclusion may be less than searchers for final answers would wish; it is as much as can be confidently maintained in a world of reality.

APPENDIX I

METHODS AND DATA USED IN COMPUTING VOLUME OF AGRICULTURAL PRODUCTION*

THE differences in agricultural productivity in Europe, summarized in Chapter II, are presented in terms of an index of volume of production. The methods of calculating the quantity of output and of determining the weights assigned to the several component products are presented in this Appendix. A brief discussion of the reliability and shortcomings of the index is also included, together with statistical tables supporting the methods and summarizing the results.

Calculation of "Disappearances"

The quantity of agricultural production that reaches the household or industrial consumer is difficult to determine precisely, since some of the goods produced may be used in whole or in part for further production (as livestock feed, seed, or fertilizer). The "net" production from agriculture may be approached by two different methods, as follows:

(a) Crop shrinkage and seed requirements are subtracted, and that portion of the product used for livestock feed is excluded while livestock products are counted.¹ The method has the virtue of taking livestock products into account and yet avoiding "double counting" of crops used for feed. It has the disadvantage of requiring difficult estimates of feed uses of those crops used both as food (or as industrial raw materials) and as feed. This difficulty is marked in the cases of cereals and potatoes.

(b) Livestock products are not counted and exclusive attention is given to crop production on the assumption that the value of livestock products is roughly represented by the value of feed. The method has two serious disadvantages: (1) for most countries the value of feed derived from pastures is not available and extremely rough estimates have to be made; (2) the value of livestock products is considerably larger than the value of feed used, and the cost of these products must include the additional labor required. With considerable arbitrariness and inaccuracy the under-valuing due to the second difficulty may be offset by making no allowance for shrinkage and seed use in evaluating crops produced. Strictly speaking, however, such a procedure yields "gross production of crops" and not the net quantity of agricultural production. Therefore method (a) is the one used in this study, and its main features are discussed below.

* The essential methodology and data contained in this Appendix were developed by Dr. Adolf Kozlik. However, Dr. Kozlik had left the United States before final preparation of the study for publication, and cannot be held responsible for the present exposition.

¹ This procedure is known as the "Laur method." See Ernst Laur, *Einführung in die Wirtschaftslehre des Landbaus* (Berlin: Paul Parey, 1920), especially pp. 208-280.

The net quantity of production then consists of those products that reach the industrial or household consumer, thus excluding the products re-used in agriculture for further production as well as portions lost through shrinkage. It follows that the calculation of net quantity entails not only the calculation of gross product but also the assessment of that part of the crop production represented by shrinkage losses, seed, and feed. Both aspects of the calculation involve the supplementing of directly utilizable data by estimates, often of an extremely rough sort in the case of the necessary deductions. The data available and estimates made are commented upon under the following topics:

- (1) Livestock Products
- (2) Grains and Potatoes
- (3) Other Food Crops
- (4) Industrial Plants
- (5) Orchard, Garden, and Related Products

Livestock Products. In computing the total volume of livestock production by countries² the following basic data have been used. *Meat and milk* production data are computed by the League of Nations³ from current production reports and supplementary official estimates of that part of the output which is not currently reported. These are the best and most comprehensive international computations of their kind available. *Egg* production has been computed (partly estimated) from various national and international sources. The meat produced from fowl (such as chickens, geese, ducks, and turkeys), which can only be estimated from the number of fowl on farms, is negligible compared with beef, veal, pork, and mutton, except in a few Balkan areas, and has therefore been omitted.

Grains and Potatoes. Part of the grain produced is re-used in agriculture for seed and feed or lost through shrinkage. Seed requirements, wastage, and feed have been deducted from the amount of the gross crop in order to compute the net production of grain.

Wastage varies somewhat by countries, but for lack of national data the German estimate of three per cent loss is used for all countries.⁴

Seed-requirements per hectare in the various countries are shown in Table 1, according to nationally computed data where available. Where such data could not be found, estimates based on known requirements in countries with similar agricultural, climatic, and soil conditions are given. It will be observed that on the whole more seed per hectare is used in the northern than in the southern parts of Europe, and more in the mountainous parts than in the plains.

The average acreage under each specified crop in the five-year period considered (1931-1935) is shown in Table 2. By multiplying these data

² Shown in Table 17 of this Appendix.

³ See *Statistical Year-Book of the League of Nations, 1940/41* (Geneva: 1941), pp. 81 ff.

⁴ See *Statistisches Jahrbuch für das Deutsche Reich, 1938*, p. 386.

TABLE 1

Seed Requirements per Hectare, for the Period 1931-1935
(Kilograms)

Countries	Wheat	Rye	Barley	Oats	Maize ¹	Potatoes
<i>Northern Europe</i>						
Denmark	180	180*	205*	230*	.	2000*
Finland	166	165*	165*	185*	.	2000*
Norway	219	170	208	232	.	2359
Sweden	212	198	207	225	.	1824
<i>Eastern Europe</i>						
Estonia	172	174	172	188	.	2150*
Latvia	169	163	155	181	.	2150
Lithuania	177*	175*	173*	185*	.	1708*
Poland	177	175	178	185	80*	1708
<i>Central Europe</i>						
Austria	145	150	140	180	90	2000
Belgium	155	150*	145*	150*	46*	1600*
Czechoslovakia	180*	180*	150*	150*	80*	2000*
France	176	163	152	188	46	1618
Germany	170	152	146	154	46*	2122
Luxembourg	176*	163*	152*	188*	46*	1618*
Netherlands	155	150*	140*	150*	46*	1600*
Switzerland	200	190*	180*	200*	.	2000*
<i>Balkans</i>						
Albania	200*	190*	165*	150*	80*	1700*
Bulgaria	217	198	186	146	80	1024
Greece	135*	110*	110*	100*	80*	1400*
Hungary	174	174	167	189	84	1891
Roumania	177	161	138	187	24	1668
Turkey	135*	110*	110*	100*	80*	1400*
Yugoslavia	199	193	165	152	81	1768
<i>Southern Europe</i>						
Italy	140	140	130	100*	86	1000
Portugal	134	104	74	63	80*	1468
Spain	136	105*	75*	65*	80*	1450*
<i>British Isles</i>						
Ireland	135*	130*	130*	130*	.	1600*
United Kingdom	135	130*	130*	130*	.	1600*

* Estimate.

¹ A dot indicates that maize is not grown.

with those of the preceding table, each country's total annual requirements of seed for each specified cereal and for potatoes are obtained. The results—admittedly “conjectural” where estimated per-hectare requirements were used—are shown in Table 3.

Uses for feed are extremely hard to determine, since most cereal crops as well as potatoes may be used for either human or animal consumption. Available estimates concern only a few of the major grains in a relatively

TABLE 2

Acreage of Specified Crops, Average for 1931-1935¹

Countries	Acreage in 1000 Hectares					
	Wheat	Rye	Barley	Oats	Maize	Potatoes
<i>Northern Europe</i>						
Denmark	110	142	348	382	—	72
Finland	40	231	126	462	—	80
Norway	15	6	58	94	—	49
Sweden	284	221	109	659	—	133
<i>Eastern Europe</i>						
Estonia	57	147	107	142	—	70
Latvia	119	253	185	817	—	108
Lithuania	205	498	203	851	—	176
Poland	1748	5723	1208	2204	94	2753
<i>Central Europe</i>						
Austria	224	383	168	806	64	201
Belgium	158	194	85	262	—	167
Czechoslovakia	895	1017	680	798	172	736
France	5372	693	727	3363	342	1411
Germany	2214	4474	1602	8153	6	2850
Luxembourg	14	8	8	28	—	16
Netherlands	127	182	28	187	—	155
Switzerland	60	17	6	14	1	46
<i>Balkans</i>						
Albania	87	8	5	10	79	0.4
Bulgaria	1228	209	230	121	711	14
Greece	708	72	216	136	248	17
Hungary	1591	635	466	227	1140	295
Roumania	8194	880	1785	823	4906	282
Turkey	3230	271	1523	175	399	44
Yugoslavia	2069	249	422	865	2515	248
<i>Southern Europe</i>						
Italy	4961	115	207	442	1442	406
Portugal	556	152	69	179	411	82
Spain	4557	593	1895	776	436	440
<i>British Isles</i>						
Ireland	28	1	50	250	—	139
United Kingdom	655	8 ²	388	1068	—	308

¹ Source: International Institute of Agriculture, *International Yearbook of Agricultural Statistics, 1935-1937*, pp. 232 ff.

² Rye and meslin.

small number of countries. Because of the numerical weight in terms of both quantity and value of the grains commonly studied, the lack of data on the others might be considered relatively unimportant. But the inadequate territorial coverage of the estimates creates a more fundamental hazard, since the utilization of crops is by no means constant. Thus, for example, potatoes are commonly used as a major part of stock feed in

TABLE 3

Amount of Grains and Potatoes Used for Seed, 1931-1935

Countries	Amounts Used for Seed in 1000 Metric Tons					
	Wheat	Rye	Barley	Oats	Maise	Potatoes
<i>Northern Europe</i>						
Denmark	19.8	25.6*	71.8*	87.9*	—	144.0*
Finland	6.6	38.1*	20.8*	85.5*	—	160.0*
Norway	8.8	1.0	11.8	21.8	—	115.6
Sweden	60.2	43.8	22.6	148.3	—	242.6
<i>Eastern Europe</i>						
Estonia	9.8	25.6	18.4	26.7	—	150.5*
Latvia	20.1	41.2	28.7	57.4	—	232.2
Lithuania	86.8*	87.2*	85.1*	64.9*	—	299.7
Poland	309.4	1001.5	209.0	407.7	7.5	4688.4
<i>Central Europe</i>						
Austria	82.5	57.1	28.5	55.7	5.8*	896.0
Belgium	24.5	29.1*	5.1*	86.7*	—	267.2*
Czechoslovakia	161.1*	183.1*	102.0*	119.7*	5.2*	1472.0*
France	945.5	118.0	110.5	464.1	15.7	2288.0
Germany	376.4	680.0	288.9	485.6	0.3*	6047.7
Luxembourg	2.5*	1.8*	0.5*	8.9*	—	25.9*
Netherlands	19.7	27.3*	8.9*	19.2*	—	248.0*
Switzerland	12.0	8.1*	1.1*	2.8*	—	—
<i>Balkans</i>						
Albania	7.4*	0.6*	0.8*	1.5*	2.4*	0.7*
Bulgaria	265.4	41.4	42.8	17.7	21.3	14.8
Greece	95.6*	7.9*	28.8*	18.6*	7.4*	28.8*
Hungary	276.8	110.5	78.2	81.6	88.8	410.8
Roumania	565.3	61.2	237.4	112.8	117.7	470.4
Turkey	436.1*	29.8*	167.4*	17.5*	12.0*	61.6*
Yugoslavia	411.7	48.1	69.6	55.5	78.0	438.5
<i>Southern Europe</i>						
Italy	694.5	16.1	26.9	44.2	51.9	406.0
Portugal	74.5	15.8	5.1	11.8	12.8*	46.8
Spain	619.8	62.3*	142.1*	50.4*	18.1*	638.0*
<i>British Isles</i>						
Ireland	8.8*	0.1*	6.5*	32.5*	—	492.8*
United Kingdom	88.4	1.0*	50.4*	138.8*	—	222.4*

* Estimated seed requirements.

Eastern Europe, and are rarely so used in Western Europe. On the other hand, some northern countries such as the United Kingdom, Belgium, the Netherlands, and Denmark produce wheat that in peacetime is considered unsuitable for milling and is therefore largely used for feed. In the case of cereals, an initial division into grain retained for feeding and grain converted into flour is not a final one, since the milling offals are again available for use as feed. We have therefore taken into account milling extrac-

tions, which are reasonably uniform in all regions unless kept unusually high or low by governmental regulation.⁵

It should also be noted that although the present concern is with domestic agricultural production, the character of foreign trade affects domestic production. Grain exports may be readily assumed to be entirely "net" production, and need cause no difficulty. On the other hand, grain imports, whether used as food or feed, necessarily affect the disposition of domestically produced grains. For purposes of computing domestic production, it has been necessary to assume as a working hypothesis that seed and feed requirements have been met from domestically produced grains up to the limit of the domestic crop. Thus, should the estimated total amount of grain used for feed and seed equal or exceed domestic production, we simply assume that none of the grain domestically produced is "net" production.

For the present study it has been necessary to use the primary data on crop disposition that are available, and on the basis of these data and scattered descriptive materials on agricultural organization, dietary habits, and the like, to construct very rough-and-ready estimates of the proportions of various crops used for feed. The sources used and considerations taken into account are summarized in the notes to Table 4, which gives by country the estimated proportion of the principal cereals and of potatoes remaining after deductions are made for wastage, seed requirements, and feed use. At this point we need only to review some of the more general considerations determining the use of the several crops.

Oats in continental Europe are used almost entirely for feed, with only negligible amounts used for oatmeal. Except for the British Isles and the USSR, it is assumed that no oats enter into "net" production as here defined. Barley is used primarily for brewing and for feed, with small and variable amounts used for gruel and as a substitute for coffee. However, the use of barley for brewing provides a case comparable to the milling of other cereals, since the mash remaining from malting is available as feed-stuff, and this factor has been taken into account. Rye is primarily a food cereal, but some is fed to livestock where production exceeds bread requirements. Wheat is infrequently used directly for feed, except in certain northern countries as already noted. However, bran remaining from conversion to flour must be taken into account. Of all cereals, maize is most affected by consumption habits. It is extensively used for food in South-eastern and Southern Europe.⁶ In other maize-growing countries it is used almost entirely for feed, and in the northern countries it is not grown at all. The main problem of estimation therefore was the separation of food and

⁵ For example, Switzerland as a grain importing country required a very high extraction rate, whereas France when faced with wheat surpluses fixed a very low maximum flour extraction to promote consumption.

⁶ In Italy, maize consumption for food tends to vary in inverse ratio to the peasant's prosperity and in direct ratio to the price of wheat. See Carl T. Schmidt, *The Plough and the Sword: Labor, Land, and Property in Fascist Italy* (New York: Columbia University Press, 1938), pp. 159-165.

TABLE 4

"Net" Production of Certain Cereal Crops and Potatoes as a Percentage of Gross Production¹

Countries	Wheat ²	Rye ²	Barley ⁴	Maize ⁵	Potatoes ⁶
<i>Northern Europe</i>					
Denmark	0	0	0	0	40*
Finland	56	63*	8	0	40*
Norway	0	0	0	0	40*
Sweden	54	45*	82	0	89
<i>Eastern Europe</i>					
Estonia	78*	70*	45	0	40*
Latvia	78	70	45	0	40*
Lithuania	77*	68*	8	0	40*
Poland	77*	68*	28	0	40*
<i>Central Europe</i>					
Austria	71	60	0	0	49
Belgium	29	7	0	0	49
Czechoslovakia	72*	63*	27	0	45*
France	74	18*	6	0	50*
Germany	74	63	80	0	40
Luxembourg	27*	7*	0	0	49*
Netherlands	42	40*	0	0	50
Switzerland	47	26	0	0	24
<i>Balkans</i>					
Albania	76*	69*	20*	92*	70*
Bulgaria	70	57	6	88	58
Greece	88*	63*	11	84	70*
Hungary	74*	25	18	5	60*
Roumania	74*	63*	40	85	55
Turkey	78*	72*	72	90	70*
Yugoslavia	78*	69	87	92	70
<i>Southern Europe</i>					
Italy	79	78	0	41	69
Portugal	72	70*	10	85*	70*
Spain	72	70*	10	80*	70*
<i>British Isles⁷</i>					
Ireland	78*	45*	60*	0	50*
England and Wales	50	50	55	0	80
Scotland	68	45*	68	0	83
Northern Ireland	78*	45*	60	0	50

* Estimate.

¹ That is, excluding shrinkage losses (set at 8 per cent), seed requirements, and use of crops for feed. It should be noted that where domestic production is only equal to or is less than seed and feed requirements, none of the domestic production is "net."

² The net production of wheat takes account not only of shrinkage, seed requirements, and wheat directly fed, but also of bran feed (set at 10 per cent of the value of the milled grain). For flour extraction rates, see M. K. Bennett, *Per Capita Wheat Consumption in Western Europe*, Wheat Studies of the Food Research Institute, 11(7):299, March, 1935; *International Yearbook of Agricultural Statis-*

feed in the Balkan and Southern European countries. Other grains are of fairly minor importance. Meslin is planted somewhat extensively in Northern countries, but is almost exclusively a feed crop. Millet is grown in Eastern and Southeastern Europe, where its use varies, and estimates must be made in the virtual absence of quantitative information. Although the estimates are subject to wide errors, the small production of the grains reduces the error in the total amount of agricultural "net" production. Potatoes, as already noted, are widely fed in Eastern Europe, where their production is great and cost is small. Where they are more expensive they are less extensively used for feed.

Other Food Crops. The proportion of other food crops that can be regarded as "net" production is assumed to be constant in all countries. Leguminous crops, for example, appear to have fairly standard seed requirements. Certain crops such as broad beans, horse beans, and chick-peas are more commonly fed than are other legumes, but the statistics

tica, 1935-1937, p. 379; J. H. Shollenberger, *Wheat Requirements in Europe*, United States Department of Agriculture, Technical Bulletin No. 535, September, 1936. For detailed statistics on the crop disposition of wheat in Germany, 1926-1930, upon which statistics some of the present estimates are based, see Hans Kunz, "Der deutsche Getreidebau," *Deutsche Agrarpolitik*, 1:176, 1932.

* As in the case of wheat (see note 2), the bran remaining from milled rye is subtracted as part of rye used for feed, calculated as 10 per cent of the value of milled grain. For rye flour extraction rates, see Benedetto Barbieri, "Indagine statistica sulla disponibilità alimentari della popolazione italiana dal 1922 al 1937," *Annali di Statistica*, Series VII, 3:10-98, 1939; Helmut Eisig, "Der Verbrauch von Nahrungsmitteln in Deutschland vor und nach dem Krieg," *Deutsche Agrarpolitik*, 1:147, n. 2, 1932; Shollenberger, *op. cit.* Detailed statistics on crop disposition of rye in Germany, 1926-1930, are given by Kunz, *loc. cit.*, p. 179.

† The net production of barley must take into account direct uses for food (flour or gruel) and indirect food use in the form of malted barley for beer. In the former cases direct feed uses and bran (set at 10 per cent of the milled grain) have been subtracted, whereas in the case of beer the feedstuff remaining from beer production has been computed. Thus the direct food consumption of barley is high in Estonia, Latvia, Roumania, Turkey, Yugoslavia, and, partly, in the British Isles. The value of feedstuff remaining from brewing has been estimated from the disposition of barley in Germany (see Kunz, *loc. cit.*, p. 185) and from information supplied by the Brewery Academy. It is fixed at 12 per cent of the malted barley.

‡ Maize is not grown at all in the northern countries, and in other countries where no "net" production is indicated the domestically grown maize is less than enough to account for shrinkage, seed requirements and feed.

§ The use of potatoes for food or feed is quite variable, feeding use being larger in Northern and Eastern Europe, and less in other sections, being at a minimum in England and Wales and Scotland. For statistics on the disposition of potato crops in Germany, see Werner Henkelmann, "Der deutsche Kartoffelbau," *Deutsche Agrarpolitik*, 1:197, 1932.

¶ The percentages of "net" production for wheat, rye, and barley refer here to the disposition of the total amounts of these grains used, including imports. This represents an exception to the procedure specified in note 1, due to the impossibility of distributing the total imports of the United Kingdom. Were the normal procedure followed, the percentages in the cases of wheat and barley would be considerably lower, with rye little affected. Since the domestic production of these grains is small, and it is only to that production that the percentages are applied, the error involved is not large. The normal procedure is used in the case of Ireland.

¶ Oats is used in the United Kingdom as a food grain, and the following are the percentages of "net" production: England and Wales 20, Scotland 45, Northern Ireland 8. These percentages would be little affected by taking imports into account.

rarely make adequate or constant distinctions. Some rather arbitrary estimates have therefore been made. In the case of vegetables, use for feed is exceptional, and they are regarded as entirely "net." Estimates of the proportional "net" production of other food crops, industrial plants, and orchard, garden, and related products are summarized in Table 5. The

TABLE 5

"Net" Production of Miscellaneous Agricultural Products as a Percentage of Gross Production¹

Product	Percentage
Leguminous crops ²	80
Vegetables	100
Sugar beets ³	70
Fibre plants	100
Oil seeds ⁴	50
Tobacco	100
Honey and Beeswax	100
Silk cocoons	100
Grapes and Wine ⁵	80
Horticulture	100

¹ That is, excluding (where applicable) shrinkage losses, seed requirements, and feed use. It is assumed that these percentages are the same in all countries where the crops are produced.

² Seed requirements are estimated at 10 per cent. See the data for France in *First World Agricultural Census (1930)*, Vol. 2, pp. 434 ff.; for Italy, in Benedetto Barbieri, "Indagine statistica sulla disponibilità alimentari della popolazione italiana dal 1922 al 1937," *Annali di Statistica*, Series VII, 8:20, 1939. Allowance for shrinkage and some feed uses (especially of broad beans, horse beans, and chick-peas) brings the total deductions to about 20 per cent.

³ Net production of sugar beets must take into account not only those beets directly fed (roughly 10 per cent) but also the drystuff remainders from milled beets (about 20 per cent of the value of the milled beets). See Käthe Bauer-Mengelberg, "Neuordnung und Aufschwung in der deutschen Zuckerwirtschaft," *Die Wirtschaftskurve*, 8:236-246, 1934; Eduard Reich, *Die tschechoslowakische Landwirtschaft; ihre Grundlagen und ihre Organisation*, Berichte über Landwirtschaft, Sonderheft 108 (Berlin: 1935), p. 199. For statistics on utilization of 100 kg of sugar beets in Czechoslovakia, see Czechoslovakia, *Annuaire Statistique*, 1938, pp. 72 ff.

⁴ Allowance is made for seed, direct feeding, and the oil meal and oil cake remaining from the pressing of oil. By weight, the oil actually extracted amounts to about one-third of the total weight of seeds, but the oil is of higher value by weight than the remaining feedstuff. For the disposition of 100 kg of oil seeds in Germany, 1927-1937, see Albert Hauck, "Die Fetterzeugung in den kleineren Verwaltungsbezirken des Deutschen Reiches," *Berichte über Landwirtschaft*, 1940, p. 524.

⁵ Taking into account approximately 20 per cent of the value of the grapes represented by mash remaining from pressing for wine, and used for feed.

notes to that table indicate the data and considerations upon which the estimates are based.

Industrial Plants. Industrial plants may leave agriculture entirely (that is, be wholly "net" production), or be used partly for production

and partly for feed. Thus, fibre plants and tobacco are entirely "net," whereas both sugar beets and oil seeds have feed uses. In the case of sugar beets it is necessary to take into account both the raw beets retained on the farm for feeding, and the milling remainders that are available for feed. Oil seeds may be used directly for feed, or the seeds may be pressed and only the remaining oil cake used for further agricultural production. In either case, part of the crop must be retained for further planting. Although the disposition of these crops naturally varies somewhat, the available estimates are applied to all countries where the crops in question are grown.

Orchard, Garden, and Related Products. The production of such products as honey and beeswax, silk cocoons, grapes and wine, and various fruits is rather poorly reported, except, fortunately, where the products represent "crops" of some importance. Honey and wax are assumed to be entirely "net" production since that part of the honey required to feed the bees is not reported in the statistics. Where direct information is not available, estimates of production are made from the number of hives and the production per hive in similar areas. For estimating the value of silk cocoon production, the value of mulberry leaves used for feed is simply neglected. Where silk growing is of any importance, statistics are available. Horticultural products are poorly reported, but may be estimated from acreages and the production in comparable areas. These products are entirely "net." In the case of vine products, some account must be taken of mash remaining from wine production. Otherwise, the problems of estimating production are comparable to those of other fruits, although the vine products are in general better reported.

Construction of the "Crop Unit"

Once the net quantity of agricultural production is determined, it is still necessary to find a means of weighting the various types of production according to quality, and to find a method of making international comparisons in common units. As already implied, the method of weighting has been that of economic value or price,[†] as explained in the following paragraphs. However, this procedure faces the immediate obstacle of comparability on two counts: the purchasing power of different currencies varies, as do relative prices even within the product-structure of agriculture.

If internal price structures differ widely from one country to another, prices cannot be used directly for international comparisons of agricul-

[†] The method of weighting used in this study represents a choice among unsatisfactory alternatives. The alternatives that purport to measure production in nutritive units, whatever their merits on other grounds, have slight relation to the economic value of production. The index here developed is not exactly representative of that value, but appears to be a more direct indicator than are feed values, caloric values, and the like. It is, however, instructive to note that nutritive weights calculated with greater attention to protein food values than has been customary in such measures, correspond approximately to the economic weights used in this study. See Wörmann, "Ernährungswirtschaftliche Leistungsmaßstäbe," *Mitteilungen für die Landwirtschaft*, September 2, 1944.

tural values. On the other hand, with similar price structures the monetary systems provide no final obstacle, since computations may be made through the use of one "European price." Actually, a comparison of price structures in all European countries where data are available indicates a general similarity but with considerable variation in details. Thus, livestock products yield higher prices per unit of quantity (or even per caloric) than do grain products, and the relative position of various grain prices is fairly uniform. We have therefore weighted the quantity of agricultural products by a "Modal Value-Ratio," as explained below.

The weights used for determining the output of agriculture are based upon price ratios. Thus, a market value is set not only for those products which have actually entered trade and helped determine the price, but also for the remainder of the individual crops or products that for one reason or another have not directly entered into the pricing mechanism. Food consumed on the farm is valued in terms of the market price.

In order to construct an index of agricultural output without direct reliance on national monetary systems, a system of price weights has been constructed. This allows the conversion of national production data into a single international unit, called the *Crop Unit* (hereafter CU). The data and method used in constructing the weighting unit are discussed in the following paragraphs.

The Crop Basket. A crop basket has been selected that is made up of one quintal (100 kilograms) of the six most important European crops in the proportion of their total European production during the 1931-1935 period. The composition of this crop basket is as follows:

16 kg wheat
 9 kg rye
 6 kg barley
 10 kg oats
 6 kg maize
 53 kg potatoes

100 kg^a

This crop basket has been so constructed as to include sufficient commodities to avoid accidental and misleading results. Were a single commodity like rye selected as a basis, the results would be subject to grave errors wherever rye is unusually cheap or unusually expensive. Thus, were all agricultural products weighted in terms of the exchange ratio per quintal between each product and rye, all other products would be given high

^a In Europe (excluding the USSR and Turkey) the average production of 1931-1935 was (in thousands of quintals):

424,860 wheat
 227,740 rye
 159,210 barley
 256,330 oats
 170,820 maize
 1,405,620 potatoes

values in Hungary where rye is very cheap, and low values in Latvia where rye is expensive. The group of commodities selected, even though chiefly cereals, is sufficiently diversified in terms of regional product structures to cancel out some variations in individual exchange ratios. At the same time the products are sufficiently homogeneous in quality, and in national price ratios among the "basket" crops, to allow international comparison. Crops are better suited for such comparison than are livestock products. Most of these crops are grown throughout Europe, and the others in a substantial proportion of the total number of countries. As a whole, the crop-basket crops form an important part of total agricultural production in all European countries. Finally, a fairly complete range of prices for these crops exists in nearly all of the countries. Therefore, the amount of hazardous estimating required for constructing the value ratios is kept at a minimum.

Price Data. The price of a crop basket in each country is next computed. This by definition is the price of one quintal of the selected group of crops determined by weighting each individual crop price by the proportion of the European crop basket represented by that crop.⁹ The unweighted price of each agricultural product, whether contained in the basket or not, is then expressed in terms of its ratio to the sum of the weighted prices of all the products contained in the crop basket. The price of one crop basket in national currency and the price ratios of the products contained in it and of other products to the crop-basket price are given in Table 6. It may be useful to give an illustration of the procedure employed.

To compute the price of one crop basket in German national currency, the following data are used:

Crop	Price per Quintal (RM)	Weight ¹⁰	Basket Price (RM)
Wheat	22.05	.16	3.53
Rye	17.49	.09	1.57
Barley	18.29	.06	1.10
Oats	16.87	.10	1.69
Maize	19.33	.06	1.16
Potatoes	4.86	.53	2.51
Total			11.56

⁹ In a few cases the price of potatoes in relation to other commodities is unduly high, because few potatoes are grown. This is notably true in Bulgaria and Greece. In order to avoid an undervaluing of other crops in the composite price, for these countries potato prices have simply been eliminated from the crop-basket price, and treated as other crops in ratio to that price, as explained below.

¹⁰ The weights represent the composition of the crop basket as given previously. This procedure is equivalent to computing the price per kilogram and multiplying by the number of kilograms represented by that crop in the basket.

TABLE 6

Price of the Crop Basket in National Currencies and the Ratio of
Other Agricultural Prices to the Crop-Basket Base

A. Crop-Basket Price in National Currencies and Ratio of Cereal
and Potato Prices to Crop-Basket Price (1931-1935 average)

Countries	Price of Crop Basket in National Currency	Ratio of Prices per Quintal to Crop-Basket Price*					
		Rye	Wheat	Barley	Oats	Maize	Potatoes
<i>Northern Europe</i>							
Denmark	8.26 Kroner	1.27	1.80	1.47	1.48	1.27	.70
Finland	105.97 Finmarks ¹	—	—	—	—	—	—
Norway	10.79 Kroner ²	1.40	1.66	1.83	1.22	—	.68
Sweden	9.00 Kronor ²	1.60	1.75	1.48	1.17	—	.56
<i>Eastern Europe</i>							
Estonia	7.58 Kroons ³	1.70	2.40	1.54	1.23	—	.26
Latvia	10.06 Lats ³	1.75	2.15	1.82	1.08	—	.89
Lithuania	12.00 Litai ⁴	—	—	—	—	—	—
Poland ⁵	10.62 Zlotys ³	1.55	2.06	1.57	1.48	—	.85
<i>Central Europe</i>							
Austria	18.62 Schillings	1.35	1.78	1.54	1.20	.76	.68
Belgium	11.85 Belgas ⁶	1.11	1.80	1.26	1.87	—	.75
Czechoslovakia	79.81 Koruny	1.54	1.99	1.48	1.81	.99	.50
France ⁷	58.21 Francs	1.21	1.96	1.22	1.08	1.44	.59
Germany	11.86 Reichsmarks	1.54	1.94	1.61	1.49	1.70	.86
Luxembourg ⁸	59.67 Francs	1.24	1.85	1.21	1.14	1.27	.82
Netherlands ⁹	7.88 Gulden	1.17	1.52	1.20	1.14	1.16	.75
Switzerland	18.28 Francs ³	1.51	1.99	.98	.90	—	.54
<i>Balkans</i>							
Albania	5.95 Franks ⁷	—	—	—	—	—	—
Bulgaria ¹⁰	129.0 Leva ³	1.62	2.10	1.45	1.48	1.28	— ⁸
w	151.9 Leva ³	1.56	2.16	1.35	1.55	1.11	— ⁸
Greece ¹¹	221.8 Drachmas ³	1.89	2.27	1.40	1.88	1.87	— ⁸
Hungary ¹²	7.66 Pengöes	1.10	1.44	1.44	1.44	1.24	.69
w	9.48 Pengöes	.98	1.88	1.28	1.48	1.87	.72
Roumania ¹³	202.0 Lei	1.40	1.94	1.02	1.23	.87	.61
Turkey	—	—	—	—	—	—	—
Yugoslavia	78.16 Dinars ³	—	1.94	1.39	1.45	1.07	.58
<i>Southern Europe</i>							
Italy	60.0 Lire	1.20	1.80	1.00	1.08	1.08	.72
Portugal	84.91 Escudos ¹⁰	1.17	1.83	1.02	.97	—	.68
Spain (1981-84 ¹⁴)	32.43 Pesetas	1.15	1.51	1.04	.97	1.81	.79
<i>British Isles</i>							
Ireland	158 Pence ⁶	—	—	—	—	—	—
United Kingdom	155 Pence ^{6 11}	—	.82	1.20	.96	.79	.98
USSR	4.56 Rubles	—	—	—	—	—	—

* Crop-basket price = 1.00. ¹ Average crop price.

² Wholesale price.

³ Based on exchange rate, average 1931-1935, between Estonia and Finland.

⁴ Maize price interpolated on the basis of Danish prices.

⁵ Maize price interpolated on the basis of German prices.

⁶ Based on exchange rate, average 1931-1935, between Poland and Lithuania.

⁷ Maize price interpolated on the basis of French prices.

⁸ Prices represent 1926-1930 average.

⁹ Based on exchange rate, average 1931-1935, between Yugoslavia and Albania.

¹⁰ The price of the crop basket in Bulgaria and Greece is based on national prices for the five cereals, but with potato prices interpolated at the European ratio of 40 per cent of the basket price. The actual ratios of potato prices to the crop-basket price so calculated are 1.19 (Bulgarian average crop), 1.42 (Bulgarian wholesale), and 1.12 (Greek average crop).

¹¹ Rye price interpolated on the basis of Hungarian average crop prices.

¹² Maize price interpolated on the basis of Spanish prices.

¹³ Rye price interpolated on the basis of German prices.

TABLE 6 (continued)

B. Ratio of Prices of Livestock Products to Crop-Basket Price
(1931-1935 average)

Countries	Ratio of Prices per Quintal to Crop-Basket Price†								
	Beef	Pork	Veal	Mutton	Milk	Butter	Eggs	Honey	Wool
<i>Northern Europe</i>									
Denmark	—	—	—	—	—	22.28	13.20	—	—
Finland	—	9.88	—	—	—	—	—	—	—
Norway	11.21	9.18	—	—	—	21.50	11.12	—	—
Sweden	—	—	—	—	—	—	—	—	—
<i>Eastern Europe</i>									
Estonia	9.39 ¹	12.39 ²	8.08 ³	10.61 ⁴	1.80 ⁵	18.21	11.40	18.13	25.10
Latvia	—	11.60	—	—	1.05	16.20	12.23	—	—
Lithuania	—	—	—	—	—	—	—	—	—
Poland	18.75	10.45	—	—	1.60	—	12.07	—	—
<i>Central Europe</i>									
Austria	12.48	10.97	12.57	—	1.70	21.18	12.99	—	—
Belgium	10.81 ⁶	11.40 ⁶	14.40 ⁶	11.25 ⁶	—	25.02 ⁷	17.91	—	24.54
Czechoslovakia	11.08	11.84	9.25	—	—	20.34	13.63	—	—
France	*9.52 ⁸	*10.58 ⁹	*18.60 ¹⁰	21.58	2.18	24.77	17.21	—	—
Germany	11.56	11.06	16.91	—	1.27	21.27	14.28	—	—
Luxembourg	—	—	—	—	—	—	—	—	—
Netherlands (1926-30 ϕ)	18.07	10.28	13.07	13.96	1.21	24.75	17.89	5.68	—
Switzerland	18.88	9.87	16.18 ¹¹	14.48	—	22.71	—	19.31	—
<i>Balkans</i>									
Albania	—	—	—	—	—	—	—	—	—
Bulgaria	9.28	12.60	—	—	—	29.03	17.21	—	25.54
Greece	—	—	—	—	2.17	21.17	9.35	7.27	11.58
Hungary	9.81	12.83	11.66	9.65	1.97 ¹²	25.98	11.61	—	15.88
Roumania	—	—	—	—	—	—	—	—	—
Turkey	—	—	—	—	—	—	—	—	—
Yugoslavia	—	—	—	—	—	—	—	—	—
<i>Southern Europe</i>									
Italy	6.78	7.10	8.25 ¹³	—	1.77	16.37	10.88	—	—
Portugal	6.98	10.43	8.20	5.79	1.55	—	7.58	9.54	—
Spain (1931-34 ϕ)	9.22	8.83	10.36	10.61	1.83	19.87	12.03	—	—
<i>British Isles</i>									
Ireland	—	—	—	—	—	—	—	—	—
United Kingdom	10.34	—	18.37	12.01	2.07	18.23	14.42	—	10.22

† Crop-basket price = 1.00. ϕ Average.

* Comparable wholesale prices (Crop-basket base = 19.22).

¹ 1927/28-1930/31 prices (1931-1935 = 5.44).² 1927/28-1930/31 prices (1931-1935 = 7.16).³ 1927/28-1930/31 prices (1931-1935 = 4.67).⁴ 1927/28-1930/31 prices.⁵ 1927/28-1930/31 prices (1931-1935 = .62).

• 1926-1930 figures.

⁶ 1926-1930 figures (1931-1935 = 33.65).⁷ 1931-1935 city prices (Paris prices = 12.94).⁸ 1931-1935 city prices (Paris prices = 15.89).⁹ 1931-1935 city prices (Paris prices = 16.32).¹⁰ 1931-1935 city prices (Paris prices = 16.32).¹¹ 1913 quality.¹² 1913 prices (1933-1935 = 3.21).¹³ 1-1a quality.

TABLE 6 (continued)

C. Ratio of Leguminous and Root Crop Prices to Crop-Basket Price (1931-1935 average)

Countries	Ratio of Prices per Quintal to Crop-Basket Price*					
	Peas	Sugar Beets	Fodder Beets	Beans	Lentils	Broad Beans; Horse Beans
<i>Northern Europe</i>						
Denmark	—	—	—	—	—	—
Finland	—	—	—	—	—	—
Norway	1.98	—	—	—	—	—
Sweden	2.90	.28	.17	—	—	1.67 ¹
<i>Eastern Europe</i>						
Estonia	—	—	—	—	—	—
Latvia	1.58	—	—	—	—	—
Lithuania	—	—	—	—	—	—
Poland	2.00	—	—	—	—	—
<i>Central Europe</i>						
Austria	1.98	—	—	1.98	4.08	—
Belgium	2.10	—	.12	—	—	1.85 ²
Czechoslovakia	2.37	—	—	—	—	—
France	2.78	.25	.15	8.54	5.09	{ 1.66 ¹ 1.60 ² 1.69 ³
Germany	2.31 ³	—	—	2.28	8.84	—
Luxembourg	—	—	—	—	—	—
Netherlands (1926/30 ϕ)	1.98	—	—	2.95	—	—
Switzerland	—	—	—	—	—	—
<i>Balkans</i>						
Albania	—	—	—	—	—	—
Bulgaria	—	.51	.86	2.37	2.47	—
Greece	2.88	—	—	2.77	2.84	2.29 ¹
Hungary	—	.30	.18	—	—	—
Roumania	1.88	.37	—	1.50	1.95	1.88 ¹
Turkey	—	—	—	—	—	—
Yugoslavia	—	—	—	2.18	—	—
<i>Southern Europe</i>						
Italy	—	—	—	1.18	—	—
Portugal	—	—	—	—	—	—
Spain (1931/34 ϕ)	3.72	—	—	—	8.20	—
<i>British Isles</i>						
Ireland	—	—	—	—	—	—
United Kingdom	—	—	—	.87	—	—
USSR	—	—	—	—	—	—

† Crop-basket price = 1.00.

¹ Broad beans.² Horse beans.³ 1931-1933 figures (1931-1935 = 3.24).

* Average.

The price of each of these crops in ratio to the basket price would then be:

Wheat	1.94
Rye	1.54
Barley	1.61
Oats	1.49
Maize	1.70
Potatoes	0.88

And the prices of all other crops may be similarly expressed in ratio to the basket price. For example,

Crop	Price per Quintal (RM)	Ratio to Crop Basket
Cabbage	8.90	.78
Beans	25.93	2.28
Beef	131.32	11.56

The prices used are either farm prices or wholesale prices. The structure of both is very similar. Except for bulky crops of low specific value (such as hay, straw, and potatoes) that have high transportation and handling costs relative to value, the spread between farm prices and wholesale prices is small. Crops used exclusively for fodder do not of course figure in the calculation of "net" production, and the similarity of farm and wholesale price structures for other crops means that either price may be used. We have in fact used the price series that is more nearly complete, indicating on the tables which price has been used. In some countries neither wholesale nor farm prices are available. At this stage of setting up the weights for an international index of production, these prices are simply disregarded.¹¹ With these exceptions nearly complete price series for the principal cereals and potatoes are available. Price data for other products are very scanty; for livestock products they are particularly defective. Some countries publish prices for liveweight only, some for slaughtered animals, some per head, and some for special meat cuts. So far as possible these are brought to a common basis, by using price ratios of countries where two or more prices are given. The standard of pricing taken was second (IIa) quality meat, that grade being the most nearly uniform in definition. In some cases considerable error may arise, either because the prices do not represent what they pretend to, or because the adjustment is not correct. Further errors may arise from the fact that it has been necessary to distribute the total national

¹¹ As will become evident below, the initial computation of price ratios is for the purpose of finding "Modal Ratios" that may be used as weights for an index of production. The absence of price data for certain countries or for certain crops does not mean that the weighted output cannot be determined, if the quantities of various products are available or can be estimated. The significance of missing price data is simply that those prices have not been represented in the series of ratios from which a modal ratio is determined, and therefore that the modal price ratio is based on less than a complete series of actual ratios. Once the modal ratio is determined it may be applied to the quantities of production without respect to local prices.

CU-values of livestock products by districts relative to the appropriate livestock populations.

Modal Ratios. On the basis of the national price ratios a European value schedule is established. That is, from the array of national crop-basket ratios (as shown in Table 6), a modal ratio is selected as typical. For example, the array of rye value-ratios is 1.10 to 1.75.¹³ The selected Modal Ratio is 1.3. Before discussing the significance of this procedure, we may note some of the more outstanding difficulties in the choice of a "modal" or "typical" ratio. Clearly, a mere unweighted average of the national ratios would overlook differences in volume of production, accuracy of data, and so on. We have therefore found it necessary to exercise some judgment in the final choice of the "typical" ratio, taking into account as many relevant considerations as possible. Obviously, the procedure is increasingly arbitrary the greater the spread in the national ratios. For those crops most generally grown the spread is not extreme, and part of the "under-weighting" or "over-weighting" due to differences in the national and the modal ratios for some products is certainly compensated by the opposite error on other commodities.¹³ Livestock products reflect greater quality differences and are not represented in the crop basket; their national price ratios are consequently less uniform than those for crops. The selection of modal price ratios as uniform weights thus in some degree fails to represent the actual price structure in any country. It does not follow that the procedure introduces major errors into the total index value of agricultural output, in view of the partially balancing effect of the weighting procedure as noted above.¹⁴

We summarize here the considerations taken into account in the selection of European Modal Value-Ratios, according to groups of products.

¹³ Exclusive of an exceptional Hungarian ratio of 0.98 based on a high wholesale price of the crop basket, and offset by a lower average crop price. See Table 6.

¹³ Thus, an examination of Table 12, below, indicates that the actual national price ratios, expressed as percentages of the modal ratio, do not in any country consistently exceed or fall below the modal ratios. It would of course be naive to assume that the errors involved in using a standard weight would precisely cancel each other. The reliability of the system of uniform weights is discussed in some detail in the following section of this Appendix, where sample comparisons are made between two national price structures, between national price ratios and "modal" ratios and between a regional schedule of weights and the all-European schedule.

¹⁴ In a few cases the modal ratio may be a more accurate representation of internal value relationships than the available national prices. This might be true where prices are unrepresentative of the range of qualities and relative quantities making up the total national production of a commodity. However, the modal ratios may also accentuate errors already present in national data.

It may also be noted that in some cases the significant range of national price ratios is less than appears in Table 6. Thus, the wheat price ratios vary from 0.82 to 2.40, but the range around the modal ratio of 1.80 is considerably narrowed if the lowest ratios, which are found in those countries where wheat actually does not figure in "net" production, are eliminated. (As pointed out above, feed and seed uses are charged against domestic production, which eliminates some crops entirely from "net" production in grain-importing countries.) This is an example of the difficulty of selecting the modal ratio. (See also the further discussion of these problems in the following section of this Appendix.)

(1) *Cereals.* The prices for rye, wheat, barley, and oats in ratio to the crop-basket price are rather similar in all countries,¹⁸ so that the modal ratio is fairly easy to determine within reasonable limits. Part of the scattering is due to the inclusion of potato prices in the crop-basket base rather than to differences among the cereal prices. This may be seen by expressing cereal and potato prices in ratio to the price of rye, as we have done in Table 7. The ratios between the prices of wheat and rye are close to 1.8. The maize price is scattered more than the other cereal prices. When it is related to rye, two distinct groups of countries with high and low ratios of maize to rye price are discernible. The maize price is 0.75 of the rye price or less in certain maize-producing and exporting countries (Austria, Czechoslovakia, Roumania, Bulgaria). Maize is equal to or greater than the rye price in Denmark, Germany, Netherlands, France, Luxembourg, Hungary, and Spain. These countries import maize, and have a developed agriculture in which the feeding value of maize is recognized.

The great diversity in the use of minor grains in Europe is reflected in the diversity of relative prices by countries. The European Modal Value-Ratio selected for the minor grains contains more of an arbitrary element than in the case of the major grains. The errors may be great but the relative importance of minor grains in the total value of production is small.

(2) *Potatoes.* The bulk of the European potato crop is grown in North-eastern Europe, where the soil is particularly suited to their culture. Except in Holland, which is a large exporter of high quality potatoes for food, the crop is largely fed to hogs, especially where the unit price is low. The countries where the value-ratio to the crop-basket base is 0.2 to 0.4 (Poland, Estonia, Latvia, Lithuania, and Germany) produced in 1931-1935 about 57 per cent of the European potato crop. Most of the potatoes in these countries are not marketed but fed on the farm. In other countries where few potatoes are grown because the soil is better suited for other crops, costs of production relative to other crops are high so that potatoes are not extensively used for feed. Potatoes cost 0.65 to 1.2 on a crop-basket base in Denmark, Belgium, Netherlands, Bulgaria, Greece, Hungary, Italy, Portugal, Spain, and the United Kingdom. (See Table 6.) In countries with moderate feed use (Norway, Sweden, Austria, Czechoslovakia, France, Luxembourg, Switzerland, and Roumania), the potato price is 0.4 to 0.64 on a crop-basket base. Because of the feed use on farms and because of the low value per weight, the potato price differs on the wholesale market and on the farm. This also accounts for part of the spread in relative prices. Because the bulk of the crop is produced where prices are low, a Modal Value-Ratio of 0.4 has been selected.

(3) *Leguminous Crops and Vegetables.* The price of peas centers closely around 2.0 on a crop-basket basis. The price of beans is more variable

¹⁸ See also Naum Jasny, *Competition Among Grains*, Stanford University Food Research Institute, Grain Economics Series No. 2, January, 1940, pp. 11, 12, 86.

TABLE 7

Wholesale Prices of Cereals and Potatoes, 1931-1935 Average,
as Related to Price of Rye in Each Country

Countries	Rye Price in Monetary Units	Ratio of Prices per Quintal to Rye Price per Quintal*				
		Wheat	Barley	Oats	Maize	Potatoes
<i>Northern Europe</i>						
Denmark	10.47	1.02	1.16	1.18	1.00	—
Finland	—	—	—	—	—	—
Norway	15.11	1.19	.95	.87	—	.45
Sweden	14.86	1.10	.90	.73	—	.85
<i>Eastern Europe</i>						
Estonia, † crop	12.90	1.41	.91	.72	—	.19
Latvia, † crop	17.62	1.23	.75	.59	—	.22
Lithuania	—	—	—	—	—	—
Poland, † crop	16.48	1.83	1.02	.93	—	{ .20 ¹ .25 ²
<i>Central Europe</i>						
Austria	25.06	1.32	1.14	.89	.57	.47
Belgium	62.87	1.18	1.13	1.23	—	.69
Czechoslovakia	122.08	1.29	.93	.85	.64	.38
France, † crop	70.47	1.62 ⁴	1.01	.89	1.19	.48
Germany	17.49	1.26	1.05	.85	1.18	.25
Luxembourg, † crop	74.23	1.48	.97	.91	1.02	.50
Netherlands	4.80	2.03 ³	1.21	1.27	1.00	1.12
Switzerland	27.60	1.32	.65	.60	—	.86
<i>Balkans</i>						
Albania	—	—	—	—	—	—
Bulgaria, † crop	{ 209.00	{ 1.80	{ .89	{ .91	{ .76	{ .74
w	{ 237.00	{ 1.88	{ .86	{ .99	{ .71	{ .91
Greece, † crop	806.80	1.64	1.01	.96	.99	.80
Hungary, † crop	{ 8.40	{ 1.81	{ 1.81	{ 1.81	{ 1.18	{ .68
w	{ 9.27	{ 1.89	{ 1.80	{ 1.51	{ 1.40	{ .74
Roumania, † crop	283.00	1.89	.78	.88	.62	.44
Turkey	—	—	—	—	—	—
Yugoslavia	—	—	—	—	—	—
<i>Southern Europe</i>						
Italy	72.00	{ 1.88 ⁵ 1.61 ⁶	.83	.86	—	.60
Portugal	99.37	1.56	.87	.83	—	.58
Spain (4 yr. av.)	87.33	1.31	.91	.84	1.14	.68
<i>British Isles</i>						
United Kingdom	11/0 ⁷	.96	1.41	1.18	.92	1.15

* Rye price per quintal = 1.00.

w = Wholesale.

‡ = Average.

1 Industrial.

2 Edible.

3 1926-1930 = 1.80.

4 1926-1930 = 1.36.

5 Soft.

6 Hard.

7 Estimated from oats and barley.

because of the great number of varieties and their different uses. For edible beans, or beans of unspecified variety, we have taken a Modal Ratio of 2.0, assigning the lower ratio of 1.5 to broad beans and horse beans where specified. Lentils are more expensive and are weighted at 3.0.

Reliable vegetable prices are rare. Farm and wholesale prices deviate sharply, and marked regional differences appear even within the same country. A near-by city increases the farm price. With the exception of pumpkins and watermelons at the lower end and garlic on the upper end of the price range, the assigned weights keep within 1.0 and 2.0.

(4) *Industrial Plants.* The prices of oil seeds do not differ much by country; however, the prices of fibres show considerable variation. The difficulty in the latter case is dual: quality differences and differences in processing stages to which the prices refer. Some cotton prices refer to raw fibres, and some to ginned cotton; some hemp prices refer to stems, some to crude fibres, and so on. In these cases, and in the case of tobacco, which differs widely in quality, the Modal Ratios selected are perforce arbitrary.

(5) *Fruits and Miscellaneous Crops.* Table grapes show a great variety in quality. The selected European Modal Value-Ratio (2.5) is only a rough approximation. The prices for grapes used for wine production are much more uniform because quality differences are of less importance. In fixing the weight of wine grapes at 1.5 and of wine at 2.5 we have taken account of the relative price per quantity between the two products. This of course reflects the greater bulk of grapes than of the wine produced, as well as the labor involved in wine production. Currants and raisins are assigned a weight of 4.0, with about the same degree of arbitrariness as in the case of table grapes.

The bulk of the orchard fruit grown in Europe is represented by apples, pears, and plums. Although the prices for table fruits are relatively high, the larger proportion used for ciders lowers the relative value of the total (which at 1.0 is made equal to one crop basket). Mulberries are priced lower, while citrus fruits are weighted at 2.0. It should be noted that this takes account of their price in the producing countries, and not of the very much higher prices in the importing countries. Since cherries, peaches, and apricots are mainly used for fresh consumption, a much higher Modal Ratio (3.0 to 3.5) than in the case of apples, pears, and plums is indicated. Berry prices fall between those of the cider fruits and the table fruits. In the frequent absence of separate data, they are weighted uniformly at 2.0. The prices of olives and olive oil are fairly uniform, and the ratio between the two is reflected by weights of 2.5 and 8.0 respectively. Chestnuts are fairly low in price in the producing countries and are used for both food and feed. Their weight at 1.1 contrasts with the Modal Ratios assigned to other nuts (4.0).

For other crops the weights have been based on a very few prices, and have been selected by taking account of the influence of market and other conditions.

(6) *Livestock Products.* As noted above, prices of livestock products in

ratio to the crop-basket base are much more variable than in the case of crops. Although other factors influence the price ratio, the variation in quality and the lack of uniform methods of reporting statistics are probably the chief reasons for the dispersion of prices.

There is a great spread between the farm and wholesale price of milk in each country because of the processing costs of the dairies. In addition, many countries have regulated milk prices, keeping the wholesale price of fresh milk high, and subsidizing the use of milk sold at lower prices for processing. This becomes evident by comparison of the ratios between butter and milk prices in several countries. As a general rule, 1 kg of butter requires 25 kg of milk.¹⁶ Allowing for the processing costs of butter and for the use of buttermilk and skimmed milk, the butter price on the farm should be equal to the price of 15-20 kg of milk. The processing costs for milk in the dairies depress the ratio between the wholesale prices of butter and milk; with a free market, however, the ratio should not fall below 10 to 1. Table 8 shows that in most countries the ratio between the farm prices of butter and milk is between 15 and 20 to 1. In Estonia, where the ratio of the milk price to the crop-basket base is exceptionally low, the ratio between the wholesale price of butter and milk is 30 to 1. If the farm prices are used, however, the ratio drops to 17 to 1. It seems probable that a lower farm price ratio would also hold in the Netherlands were data available.

The dispersion of meat prices in ratio to the crop-basket base seems to be due more to defects in statistical comparability than to genuinely different price structures. Quality differences (without standardized classification) and price references to different stages between the live animal and the butchered meat provide obstacles to international comparison. We have attempted to overcome the obstacles in so far as possible by converting all prices to the prices of slaughtered meat of average quality. Table 9 shows the available price ratios between slaughtered meat and liveweight animals that have been considered in making our price conversions. Since meat constitutes only part of the marketable products derived from slaughtered animals, the value of other products must be added to meat values to obtain the total value of livestock products. In the absence of European data, we have based our calculations on the income from by-products in the American packing industry. The proportion of the total value represented by meat is shown in Table 10, where we also show the European Modal Value-Ratios for meat and for total product.

In Table 11 we present the European Modal Value-Ratios of agricultural products. These are the weights used for converting national production into internationally comparable units, the Crop Units. The steps in

¹⁶ In Finnish dairies 23.0 kg of milk were used for 1 kg of butter (1931/1935 average). (*Annuaire Statistique de Finlande*, 1936, p. 93.) In Germany, over the same period, 25.7 kg of milk in dairies, and 27.9 kg of milk in the country as a whole, were used for 1 kg of butter. (Hans v.d. Decken, *Die Entwicklung der Selbstversorgung Deutschlands mit landwirtschaftlichen Erzeugnissen*, Berichte über Landwirtschaft, Sonderheft 138 [Berlin: 1938], p. 43.)

TABLE 8

Milk Prices in Ratio to Crop-Basket Base, and Ratio between
Butter and Milk Prices, 1931-1935 Average

Countries	Price of Milk in Ratio to Crop-Basket Base		Ratio between the Prices of Butter and Milk	
	Wholesale	Farm	Wholesale	Farm
<i>Northern Europe</i>				
Denmark	—	—	—	20.85
Finland	—	—	—	19.81
Norway	—	—	—	20.40
Sweden	—	—	—	15.81
<i>Eastern Europe</i>				
Estonia	0.62	1.30	29.86	17.28
Latvia	1.05	—	15.38	—
Lithuania	—	—	—	16.82
Poland	1.60	—	—	19.49
<i>Central Europe</i>				
Austria	1.70	—	12.47	14.81
Czechoslovakia	—	—	—	14.84
France	2.18	—	11.61	—
Germany	1.27	—	16.70	19.40
Netherlands	1.21	—	80.42	—
Switzerland	—	—	—	19.84
<i>Balkans</i>				
Greece	2.17	—	9.77	—
Hungary	1.97	—	7.43	11.81
Roumania	—	—	—	14.85
<i>Southern Europe</i>				
Italy	1.77	—	9.26	—
Portugal	1.55	—	—	—
Spain	1.88	—	10.86	—
<i>British Isles</i>				
United Kingdom	2.07	—	8.80	—

the procedure as outlined lead from purely national prices to a system of weights allowing an international index of output expressed in a common unit, the Crop Unit. An example may serve to point up the significance of this final step. The modal price ratio between a quintal of rye and a quintal of the crops comprising the crop basket is 1.3:1. Rye is therefore weighted at 1.3, and the index value of the German 1931-1935 annual average "net" production of 68,647 thousand quintals of rye is 82,741 thousand CU. All other products can be similarly weighted, so that the total agricultural output of a given country is the total of its "net" production multiplied by the appropriate weights for each product.

TABLE 9

Ratios between Slaughtered Meat and Liveweight Wholesale Prices

Animals	Slaughtered Meat, Liveweight Prices = 1.00		
	Switzerland ¹	Italy ²	Belgium ³
Steers	1.98 ⁴ 2.00 ⁵	1.71	1.85 1.89 ⁶
Cows	2.05	1.80	1.85
Heifers	—	—	1.88
Sheep	2.02 ⁷	—	2.01 ⁸
Calves	1.81 ⁵	1.50	1.48
Hogs	1.96 ⁷	—	1.98

¹ *Annuaire Statistique*, 1935, pp. 274 ff.; 1931-1935 average.

² *Annuario Statistico Italiano*, 1925, p. 181; 1932-1933 average.

³ *Annuaire Statistique*, 1935, p. 163; 1931-1935 average.

⁴ Fat, Ia quality.

⁵ Fat, IIa quality.

⁶ Bulls.

⁷ Fat.

⁸ Wethers.

TABLE 10

Relative Income from Meat and By-Products in the American Packing Industry,¹ and Application of This Relation to European Modal Value-Ratios

Animals	Income from Meat as Percentage of Total Income from Slaughtered Animal	Ratio of Total Income from Slaughtered Animal to Income from Meat	European Modal Value-Ratio of Meat	European Modal Value-Ratio of Total Product Per Quintal of Meat Produced
Hogs	96.6	103.5	11.0	11.5
Sheep	81.4	122.9	12.0	14.0
Calves	92.8	107.8	13.0	14.0
Steers	87.3	114.5	11.0	12.5

¹ Rudolf A. Clemen, *By-products in the Packing Industry* (Chicago: University of Chicago Press, 1927), p. 9. Data on European packing industries are not available.

TABLE II

European Modal Value-Ratios per Quintal for Agricultural Products

I. CEREALS		III. INDUSTRIAL CROPS	
Barley	1.3	Cotton, all	5.0
Buckwheat	1.6	Cotton fibre	25.0
Canary grass	1.4	Cotton seed	1.3
Maize	1.0	Flax fibre	12.0
Meslin	1.4	Flax and hemp	10.0
Millet	1.4	Flax seed	2.2
Oats	1.2	Groundnuts	1.6
Rice	2.1	Hemp fibre	10.0
Rye	1.3	Hemp seed	2.5
Spelt	1.3	Hops	15.0
Wheat	1.8	Opium	400.0
II. FOOD CROPS		Poppy seed	4.5
Beans	2.0	Rapeseed	2.5
Beans, broad	1.5	Sesame	1.5
Beans, green	1.0	Soybean seed	1.7
Beans, horse	1.5	Sugar beets	0.25
Cabbages	0.8	Sunflower seed	1.5
Cantaloupes	1.1	Tobacco	10.0
Carrots	1.0	IV. VINE PRODUCTS	
Cauliflower	1.5	Grapes	1.5
Chick-peas	1.5	Grapes, table	2.5
Cucumbers	1.2	Raisins	4.0
Garlic	3.5	Wines	2.5 ¹
Lentils	3.0	V. FRUITS	
Lettuce (head)	1.3	Apples	1.0
Melons	0.7	Apricots	3.5
Melons and watermelons	0.9	Berries	2.0
Onions	1.3	Cedrats	10.0
Onions and garlic	1.5	Citrus fruits	2.0
Paprika	7.5	Cherries	3.0
Parsley	1.3	Figs	1.0
Peas	2.0	Mulberries	0.5
Peas, green	1.0	Olive oil	8.0
Pimientos	1.5	Olives	2.5
Potatoes	0.4	Peaches	3.5
Pumpkins	0.3	Pears	1.0
Spinach	1.8	Plums	1.0
Tomatoes	1.2		
Truffles	85.0		

¹ Grapes 2.0 plus mash 0.5 = 2.5.

TABLE 11 (Continued)

VI. NUTS		Goat meat	12.0
Chestnuts	1.1	Honey	15.0
Walnuts, hazel nuts, and almonds	4.0	Milk	1.4
		Mohair	19.0
		Mutton	12.0
VII. LIVESTOCK PRODUCTS		Pork	11.0
Beef	11.0	Veal	13.0
Butter	22.0	Wax	25.0
Eggs	13.0	Wool	15.0

Reliability and Limitations of the "Crop Unit" Index

An international index of agricultural output raises many questions of a theoretical or methodological character concerning the validity of the index. Validity here need be understood in no more ultimate sense than the logical or factual grounds for maintaining that the constructed index measures what it purports to measure. The present discussion deals only with the question as to whether the index is a reliable indicator of agricultural output, and not with the further questions, discussed in the text, as to whether output measures levels of living of the agricultural population.¹⁷ The problems here at issue relate therefore to the construction and initial interpretation of the index of agricultural output, and are supplementary to the description of the index in the previous section of this Appendix.

As noted above, the weights used in computing the index value of the quantities of each product are "modal" ratios of individual product prices to composite crop-basket prices. The weights are selected from an array of such ratios in Europe as a whole, and are uniformly applied in every country and administrative district. The use of a single price-ratio as a "representative" value may be said to be valid in the degree that price structures are similar and the range about the selected value small. Conversely, the error in evaluating (or weighting) any product increases with the "atypicality" of the crop price in any country; and a substantial error would be introduced were the national ratios consistently above or below the modal values actually used.

The following paragraphs attempt to illustrate these problems by experimental checks on the data with reference to two critical questions: How similar are the national price structures? Are there regional price structures that differ markedly from an all-European system of price ratios? A further question is also incidentally discussed, namely, what possible errors are introduced through the use of the standard crop basket as the initial basis for price comparison?

¹⁷ It may be noted that were price ratios for both agricultural and non-agricultural products absolutely uniform the fact that the "value" of agricultural production is expressed in Crop Units and not in monetary units would not prevent its use as a measure of income that avoids problems of international monetary exchange ratios. The CU-value of the agriculturalist's production would, so interpreted, be its crop-basket value, an *exchange* value not essentially different from the evaluation of the production in gold francs, for example.

Similarities in National Price Structures. Were the relative prices of all agricultural products absolutely uniform in all countries of Europe the validity of a uniform system of weights based on those prices (or price ratios) would be perfect. The price structure of any one country could be taken as representative of the others, and all prices could be related to the price of a single commodity in the selected country. In fact, however, national price structures are not uniform and some degree of arbitrariness or abstraction is introduced with any uniform schedule of weights based upon prices. It is to minimize this error that the price ratios computed in this study are related to a composite "crop basket" rather than to a single crop. But the device of the crop basket eliminates neither the variation in price ratios among the crops included in the basket nor the variation in the ratios of other prices to the basket price. This means that at first glance the most nearly accurate representation of national agricultural output would be the quantities of commodities produced weighted with the price ratios in that economy. Since all values would be expressed relative to a uniformly defined group of commodities, the index based directly on national prices would have about the same comparability as values expressed in a common monetary unit. The procedure has, however, certain difficulties:

(1) The price of the basket crops (especially cereals) may be greatly affected by tariff policies, so that other products are thereby "artificially" reduced in index value. The reduction would be "artificial" for present purposes to the extent that it did not correspond to reductions in the value of agricultural produce on the real market but only on the hypothetical market of exchange of agricultural products against the protected cereals.

(2) The computation of national "crop-basket values of agricultural output" would require a complete array of prices in each country, or a series of *ad hoc* estimates of prices not available.

For these reasons it is preferable for the construction of a production index to use commodity weights common to a region or the continent. This procedure leaves unanswered the questions as to how much dissimilarity of price structure is neglected, what the net effect on the index value would be were other price weights used, and whether the difference in results using other weights would be genuine (that is, more nearly valid) or simply artifacts of the method of inter-product price comparisons, as where national ratios are affected by tariffs that do not affect all agricultural products uniformly. Some illustrations from the data used in this study may serve to point up these problems.

Table 12 shows national crop-basket price ratios as percentages of the Modal Ratios taken as uniform weights. This table therefore serves to indicate the degree of concentration and dispersion of actual price ratios. An examination of Table 12 indicates that in most of the countries the national price ratios do not fall uniformly above or below the Modal Ratios. In a few countries of Southeastern Europe (especially Bulgaria and Yugoslavia) the national price ratios summarized in Table 12 are almost uniformly higher than the Modal Ratios. If these prices referred to the entire range of agricultural products or if there were reason to sup-

TABLE 12

National Wholesale and Farm Crop-Basket Price Ratios as Percentages of the Selected European Modal Value-Ratios for Principal Agricultural Products

Products	Wheat	Rye	Barley	Oats	Maize	Rice	Potatoes	Peas
<i>European Modal Value-Ratios</i>	1.80	1.80	1.80	1.80	1.00	2.10	0.40	2.00
Crop-Basket Price Ratios as Percentages of European Modal Value-Ratios								
Countries								
<i>Northern Europe</i>								
Denmark	72	98	118	119	127	—	175	—
Finland	—	—	—	—	—	—	—	—
Norway	92	108	102	102	—	—	158	99
Sweden	97	123	110	98	—	—	140	145
<i>Eastern Europe</i>								
Estonia	183	181	118	108	—	—	65	—
Latvia	119	185	102	86	—	—	98	77
Lithuania	—	—	—	—	—	—	—	—
Poland	114	119	121	119	—	—	88	100
<i>Central Europe</i>								
Austria	99	104	118	100	76	120	158	99
Belgium	72	85	97	114	—	—	188	105
Czechoslovakia	111	118	110	109	99	104	125	119
France	109	93	94	90	144	—	148	187
Germany	108	118	124	124	170	100	98	116
Luxembourg	108	95	93	95	127	—	155	109
Netherlands	84	90	92	95	116	126	188	99
Switzerland	111	116	75	75	—	—	185	—
<i>Balkans</i>								
Albania	—	—	—	—	—	—	—	—
Bulgaria <i>g c</i>	{ 117	{ 125	{ 112	{ 123	{ 123	{ 161	{ 298	{ —
<i>w</i>	{ 120	{ 120	{ 104	{ 129	{ 111	{ —	{ 855	{ —
Greece	126	107	108	111	187	85	280	119
Hungary <i>g c</i>	{ 80	{ 85	{ 111	{ 120	{ 124	{ —	{ 178	{ —
<i>w</i>	{ 77	{ 75	{ 98	{ 123	{ 137	{ —	{ 180	{ —
Roumania	108	108	78	108	87	—	153	94
Turkey	—	—	—	—	—	—	—	—
Yugoslavia	108	—	107	121	107	—	145	—
<i>Southern Europe</i>								
Italy	100	92	77	86	108	101	180	—
Portugal	102	90	78	81	—	70	170	—
Spain	84	88	80	81	181	68	198	166
<i>British Isles</i>								
Ireland	—	—	—	—	—	—	—	—
United Kingdom	46	—	92	80	79	—	245	—

g c = Average crop price.
w = Wholesale price.
 All others are farm prices.

TABLE 12 (continued)

Products	Beef	Pork	Veal	Milk	Butter	Eggs
<i>European Modal Value-Ratios</i>	11.00	11.00	13.00	1.40	22.00	13.00
Crop-Basket Price Ratios as Percentages of European Modal Value-Ratios						
Countries						
<i>Northern Europe</i>					101	—
Denmark	—	—	—	—	—	—
Finland	—	—	—	—	—	—
Norway	102	83	—	—	98	86
Sweden	—	—	—	—	—	—
<i>Eastern Europe</i>						
Estonia	85	118	62	98	83	88
Latvia	—	105	—	75	74	94
Lithuania	—	—	—	—	—	—
Poland	125	95	—	114	—	93
<i>Central Europe</i>						
Austria	118	100	97	121	96	100
Belgium	98	104	111	—	114	138
Czechoslovakia	101	108	71	—	92	105
France	87	96	105	152	118	132
Germany	105	101	122	91	97	110
Luxembourg	—	—	—	—	—	—
Netherlands	119	93	101	86	113	138
Switzerland	122	90	124	—	103	—
<i>Balkans</i>						
Albania	—	—	—	—	—	—
Bulgaria $\begin{smallmatrix} \text{\textcircled{c}} \\ \text{\textcircled{w}} \end{smallmatrix}$	—	—	—	—	—	—
Greece	84	115	—	—	132	132
Hungary $\begin{smallmatrix} \text{\textcircled{c}} \\ \text{\textcircled{w}} \end{smallmatrix}$	—	—	—	155	96	72
Roumania	89	117	90	141	118	89
Turkey	—	—	—	—	—	—
Yugoslavia	—	—	—	—	—	—
<i>Southern Europe</i>						
Italy	61	65	63	126	74	84
Portugal	63	95	63	111	—	58
Spain	84	76	80	131	90	93
<i>British Isles</i>						
Ireland	—	—	—	—	—	—
United Kingdom	94	—	103	148	83	111

$\text{\textcircled{c}}$ = Average crop price.
 $\text{\textcircled{w}}$ = Wholesale price.
 All others are farm prices.

pose that the prices not available were also higher than the selected European standard, it would appear that production in these countries had been undervalued. However, the significance of the deviations from the standard prices cannot be judged by the relations between the weights alone, but only by comparing quantities multiplied by weights.

Price data for England and Wales and the Netherlands allow a com-

TABLE 13

Index Values of Certain Products in England and Wales and the Netherlands Using National and "Modal" European Price Ratios as Weights¹

A. England and Wales

Products	Index Values in Thousands		
	With National Price Ratios	With Price Ratios in Other Country	With "Modal" European Ratios
Wheat	5,841	10,827	12,822
Potatoes	24,814	18,990	10,128
Beef	62,164	78,577	66,129
Mutton	32,222	37,455	32,200
Milk	124,895	72,714	84,131
Butter	8,750	11,880	10,560
Total	258,186	230,443	215,970

B. The Netherlands

Wheat	2,418	1,305	2,864
Potatoes	11,340	14,818	6,048
Beef	20,677	16,358	17,402
Mutton	1,340	1,153	1,146
Milk	57,183	97,826	66,163
Butter	22,003	16,206	19,558
Total	114,961	147,666	113,181

¹ National price ratios are given in this Appendix, Table 6, and the "Modal" European ratios in Table 11. Production figures used are from the unpublished data collected for this study.

parison for six important commodities¹⁸ of index values of production using national price ratios. Table 13 shows the index values for each country using three different groups of price ratios: (1) the country's own price ratios, (2) the price ratios of the other country, and (3) the "modal" European price ratios used in this study. The table indicates that the difference between the national price structures materially affects the computed index value of production. British prices are lower for wheat, beef, mutton, and butter, and higher for potatoes and milk. Were the price series complete and the comparison restricted to these two countries, the "true" index values for each country could be assumed to lie within the range derived from the two national weight schedules. The range itself is sufficiently wide to indicate caution in the interpretation of the results from standard weights. This necessary caution is accentuated by the fact that both national price schedules yield higher index values than the CU-value as computed in this study. Part of the explanation for this clearly lies in the fact that prices are expressed in ratio to the price of a crop basket, the cereal components of which in these countries are used chiefly for feed and are low-priced relative to other products. The national crop-basket index for products compared in Table 13 is very close to the CU-value in the Netherlands, but considerably higher in England and Wales. An examination of the component index values for England and Wales indicates that the greatest differences are in the index values of potato and milk production, the price ratios of which are much higher in England and Wales than in Europe as a whole. Indeed, elimination of milk production from the comparison would bring the results from national and "modal" weights very close together. It is possible that the use of milk for fresh consumption in England accounts for its high price, while the extensive use of milk for cheese-making in the Netherlands makes its relative value much lower.

Certain results emerge from this sample comparison that must be recognized for fair interpretation of the results of the international comparisons in this study. (a) National price schedules differ from one another and from any European "central tendency"; these differences limit the precision of the index constructed with uniform weights, since there is no *a priori* assurance that instances where prices are high are confined to cases where production is low, and conversely. (b) A single product that exhibits a wide range of national prices relative to a uniform crop basket and at the same time represents a substantial part of the total volume of agricultural output in some countries may materially alter the total results according to the weight at which its index value is computed. (c) The significance in the national economy of the basket crops themselves is variable, and again there are no theoretical grounds for assuming that low prices of feed grains, for example, will be exactly compensated by high potato

¹⁸ The CU-value of the six commodities represents 74 per cent of the total index value of production in England and Wales, and 71 per cent in the Netherlands.

prices and thereby assure that the crop basket constitutes a uniform standard of value in all economies.¹⁹

The last point is further illustrated by a comparison of results from using as weights national and "modal" price ratios in Italy, a country where grain prices were upheld by high tariffs. Table 14 indicates that the use of the national weights for the products compared would have reduced somewhat the total index value, chiefly owing to lower national price ratios for meats and eggs.

Regional Schedules of Weights. Although national price schedules are insufficiently complete to allow complete national weights, and are moreover subject to somewhat irrelevant internal variations due to tariffs and alternative uses of crops, the logic of an all-European schedule of weights would apply at least equally well to regional weights. Thus, two neighboring countries could be compared in terms of regional indexes, while countries with dissimilar economies could be compared, perhaps less reliably, by means of uniform weights selected from regional schedules. That the method has not been followed in this study is due to the primary interest in inter-regional comparisons embracing the whole of Europe. The method of pyramiding weights has also a practical disadvantage in the differential completeness of price data in the several regions and the consequent likelihood that some regional weights would be based on either a single and possibly markedly atypical price or an *ad hoc* estimate derived from some other country or region.

As a sample check on the divergence of regional price ratios from the European "Modal" ratios, price data for 14 important products were used to determine a weight schedule for a region comprising Austria, Czechoslovakia, Hungary, Poland, and Roumania. The regional price ratios, summarized in Table 15, represent averages of the national prices for those countries having both price data and "net" production for the commodities considered, weighted on the basis of the national share of regional

¹⁹ It is to be noted that the proportional composition of the basket is held constant, following the relative quantities produced in all of Europe. It is safe to assume that this crop-basket composition will not match the proportional distribution of these crops in the product structure of any country, and will depart somewhat from regional product structures. Yet the uniform definition of the crop basket is essential for international comparability. But a uniform definition does not assure a uniform value in the national economies. This difficulty is especially marked with respect to crops having different uses from one country to another, especially as between food and feed. Two of the basket crops, oats and maize, are widely used as feed, and these crops frequently do not enter into national "net" production at all. Potatoes are also used extensively for feed in the areas where production is highest. This means that agricultural prices are related to a crop-basket price that may be substantially lowered by the price of feed crops, yet in the computation of "net" production the higher values of other crops are not offset by low-value products. Actually, potato prices have been calculated in the crop-basket price in terms of a much lower price ratio in Bulgaria and Greece, where production is very small and prices high, and the cereals used primarily for feed do not differ greatly in price ratios. These factors have been taken into account as far as possible in determining the uniform weight for each crop, and tend to support a uniform schedule of weights rather than a series of national schedules.

TABLE 14

Comparison of Index Values of Agricultural Output in Italy,
Using National and "Modal" Price Ratios as Weights¹

Products	Index Values in Thousands	
	With National Price Ratios	With European "Modal" Price Ratios
Wheat	103,385	103,385
Rye	1,397	1,514
Maize	11,626	10,865
Rice	14,900	13,784
Potatoes	9,642	6,650
Beans	4,676	8,277
Beef	32,526	53,168
Pork	14,839	23,000
Milk	106,204	84,003
Eggs	35,567	42,500
Total	334,762	347,146

¹ National price ratios are given in this Appendix, Table 6, and the "Modal" European ratios in Table 11. Production figures used are from unpublished data collected for this study.

production of each commodity. A comparison of the two weight schedules indicates their substantial similarity, but an appraisal of the significance of the differences is only possible by applying the regional weights to national quantities of production. When, for example, the quantities of "net" production of these products in Czechoslovakia and Poland are multiplied by these weights, the results for the total of the items compared are around 10 per cent higher than the corresponding CU values.²⁰ This higher result is primarily due to the low prices of crop-basket cereals, especially oats and maize, which are produced in large quantities in this region, and the correspondingly high relative prices of beef and pork.

The higher index values resulting from the use of regional weights again indicates the problem of making meaningful comparisons in agricultural

²⁰ In view of the limited use made of the regional weights, no attempt was made to get a complete schedule for all minor products. The products for which index values are compared in Czechoslovakia and Poland represent 91 per cent of the total CU-value in the former country, and 96 per cent in the latter. For the products compared the regional index value in Czechoslovakia is 212,540 thousand, an increase of 7.6 per cent over the CU-value of 197,448 thousand; in Poland the regional weights yield an index value of 425,533 thousand, which is 9.2 per cent higher than the corresponding CU-value of 389,629 thousand.

TABLE 15

Comparison of Regional¹ Weight Schedule with European
"Modal" Value-Ratios

Products	Regional Weights ²	European "Modal" Weights ³
Wheat	1.85	1.80
Rye	1.49	1.30
Barley	1.30	1.30
Maize	.88	1.00
Potatoes	.42	.40
Beef	12.17	11.00
Pork	11.18	11.00
Veal	9.25	13.00
Mutton	9.65	12.00
Milk	1.66	1.40
Eggs	12.20	13.00
Peas	2.02	2.00
Beans	1.51	2.00
Lentils	2.19	3.00
Sugar Beets	.33	.25

¹ The region includes Austria, Czechoslovakia, Hungary, Poland, and Roumania.

² The regional weights represent averages of national price ratios, as given in this Appendix, Table 6, weighted by each country's proportion of regional "net" production of the commodity.

³ From this Appendix, Table 11.

production in an area so diversified in economic structure as contemporary Europe. It especially indicates the actual instability of the crop basket as a unit of comparison between areas where the importance of cereals relative to other agricultural products is dissimilar. It is to be noted, however, that the use of regional weights does not materially affect the relative position of the countries within the region, and a comparison between regions can only be made on the basis of weights common to the countries or regions compared. The results of the illustrative application of regional weights to Czechoslovak and Polish production data cannot therefore be interpreted to mean that the position of these countries relative to the Western European countries is "too low" in the general comparison of European agricultural output as made in this study, but only that their positions might have been higher had the regional price structure prevailed throughout Europe. However, a higher position in comparison with the countries of the West under the assumption of the regional schedule of weights would be less likely than a lower position,

since the livestock products having high values relative to cereals in the region are heavily represented in the agricultural product structures of Western Europe. The extreme allowable interpretation is the possibility that the range of differences in index values is somewhat accentuated by the use of a unit of comparison comprising no livestock products, so that the uniform weights under-value these products somewhat in the poorer, cereal-growing areas, and over-value them in the principal livestock-producing countries. Even this interpretation would not apply where the crop-basket cereals are unprotected by tariffs and chiefly used for feed, as in England. Indeed, Table 12, above, where national price ratios are expressed as percentages of the "Modal" weights, seems to bear out the possibility of "over-weighting" of livestock products in Western Europe only in France and the Netherlands. An actual comparison of index values using national and international weights in the case of the Netherlands in this Appendix revealed no substantial difference in results.

Interpretation of Results. The considerations and illustrative materials presented above reveal the serious problems entailed in index construction and prompt caution in ascribing exact numerical validity to the results of the comparison made in this study. It is appropriate at this juncture to summarize the significance of the weighting system used. The data presented in Chapter II and in this Appendix purport to compare the "volume of agricultural output" as related to workers, dependent population, and area. They cannot be taken as direct measures of income or level of living in agriculture. The former depends upon national or even local prices of farm products, and the latter depends upon those prices and the prices of goods and services bought by the agriculturalist.

However, the purpose of the comparisons made in this study has been to approximate, even if roughly and indirectly as may be dictated by available data, the economic well-being of the agricultural population. For reasons already noted, the direct use of national prices, converted by unreliable international exchange rates, or of national price ratios has not been feasible for the detailed comparisons here contemplated.

It is safe to say that an index of production based upon a schedule of weights derived from European experience is a closer approximation to the relative economic position of the European agriculturalist than would an index based upon non-European experience. For example, Table 16 shows the weights used in this study and those used in a somewhat comparable study by Colin Clark.²¹ For purposes of comparison rye is taken as a basis and made equal to 1.00 in each series. The prices used by Colin Clark are based upon American data and do not always fit European experience. Thus, Clark's price for oats is higher than is typical in Europe, and his price for potatoes (which by his data exceeds the price of any

²¹ See Colin Clark, *The Conditions of Economic Progress* (London: Macmillan and Co., 1940).

TABLE 16

Comparison of Price Ratios: I, European Modal Value-Ratios,
and II, Dollar Prices of Colin Clark¹
(Rye price = 1.00)

Products	I # 1931-1935	II # 1925-1934
<i>Food Crops</i>		
Rye	1.00	1.00
Wheat	1.38	1.36
Barley	1.00	.96
Oats	.92	1.17
Maize	.77	.79
Potatoes	.31	1.37
<i>Industrial Crops</i>		
Sugar beets	.19	.26
Cotton seed	1.00	1.05
Cotton fibre	19.23	11.00 ²
Cotton, all	3.85	13.98
Flax seed	1.69	2.95
Flax fibre	9.23	7.55
Hemp fibre	7.69	6.68
Tobacco	7.69	14.48
Soy beans	1.31	2.14
Groundnuts	1.23	3.57 ³
<i>Vine Products</i>		
Grapes, table	1.92	1.03
Grapes, wine	1.15	
Raisins	3.08	4.12
Wine	1.54	1.58
<i>Fruits</i>		
Olives	1.92	3.11
Citrus fruits	1.54	2.95
Olive oil	6.15	8.30
<i>Livestock Products</i>		
Butter	16.92	— ⁴
Eggs	10.00	13.15
Milk	1.08	1.64
Pork	8.46	12.61
Beef	8.46	8.30
Mutton	9.23	11.24
Wool	11.54	23.49

Average.

¹ Based on Colin Clark, *The Conditions of Economic Progress* (London: Macmillan and Co., 1940), table following p. 246.

² Lint, including value of seed.

³ Unshelled.

⁴ Colin Clark's original figure, \$830 per quintal, must be a misprint. In ratio to rye this would be an index value of 344.00.

cereal) does not at all fit the European pattern. Otherwise, his results are rather similar to the European Modal Ratios.²²

Various attempts to measure production in terms of nutritive units, such as calories, starch units, and the like have many difficulties that need not be reviewed here, as such measures patently have slight if any relation to production or income in the economic sense.²³ The index here presented has serious shortcomings, but if interpreted cautiously seems to reveal regional differences in the effectiveness of European agricultural production.

Agricultural Population and Production

The final section of this Appendix presents statistical data supplementary to those presented in Chapter II. Table 17 shows gross crop production, agricultural "net" production and its component parts, and has an added column showing for each country the share of livestock products in the total. Table 18 gives by district the population dependent on agriculture, males gainfully occupied in agriculture, volume of production in CU, and the index-number values (European average = 100) of the two per capita comparisons. Figure 6, Chapter II, is derived from column 4 of this table. Table 19 presents indexes of yields per hectare of seven important crops in European countries. The unweighted average is illustrated in Figure 8, Chapter II. Following Table 19 a list of international and national statistical sources used in computing agricultural output is presented. Other references are included in the General Bibliography.

²² The prices used in the computation of the League of Nations world index of primary production are not necessarily typical of purely European price relations. (See League of Nations, Economic Intelligence Service, *World Production and Prices, 1930-1939* [Geneva: 1931-1940].)

²³ Some recent attempts have been made to construct a production index in nutritional terms without the customary gross underweighting of livestock products typical of other indexes. A "cereal value" index has been constructed and related to German experience, but available information does not allow adequate appraisal of the methods used or results obtained. See O. Mielck, "Die Nahrungsleistung der deutschen Landwirtschaft," *Mitteilungen für die Landwirtschaft*, June 10, 1944; Wörmann, "Ernährungswirtschaftliche Leistungsmaßstäbe," *Mitteilungen für die Landwirtschaft*, September 2, 1944.

TABLE 17

Index Values of Agricultural Production by Countries, 1931-1935 Average

Country	Gross Crop Production 1000 CU	Net Crop Production 1000 CU	Livestock Products 1000 CU	Agricultural Net Production 1000 CU	Livestock Production as Per Cent of Agricultural Net Production
<i>Northern Europe</i>					
Denmark	126,856	11,114	149,949	161,063	98.1
Finland	48,820	8,287	48,208	56,495	85.3
Norway	26,871	8,915	83,891	87,296	89.5
Sweden	108,659	22,844	96,250	119,094	80.8
<i>Eastern Europe</i>					
Estonia	25,074	6,953	19,802	26,755	74.0
Latvia	47,907	18,704	85,581	49,285	72.2
Lithuania	60,820	20,744	80,969	51,718	59.9
Poland	444,814	160,580	243,764	404,344	60.3
<i>Central Europe</i>					
Austria	80,018	25,501	76,406	101,907	75.0
Belgium	83,017	16,829	95,777	112,606	85.1
Czechoslovakia	214,085	81,818	184,810	216,123	62.1
France	1,020,771	442,617	455,920	898,537	50.7
Germany	1,054,258	819,566	793,244	1,112,810	71.8
Luxembourg	4,195	872	8,709	4,581	81.0
Netherlands	96,165	26,185	183,720	159,905	88.6
Switzerland	51,135	10,706	64,458	75,159	85.8
<i>Balkans</i>					
Albania	7,368	3,586	4,060	7,646	53.1
Bulgaria	87,699	44,067	88,327	82,394	46.5
Greece	44,062	33,628	26,640	60,268	44.2
Hungary	156,820	61,011	87,895	148,896	59.0
Roumania	274,723	158,028	114,290	272,318	42.0
Turkey	158,809	105,128	64,645	169,778	88.1
Yugoslavia	190,382	113,722	62,030	175,752	85.3
<i>Southern Europe</i>					
Italy	606,008	349,172	212,544	561,716	87.8
Portugal	58,876	86,623	80,645	67,268	45.6
Spain	476,870	318,411	129,788	448,199	29.0
<i>British Isles</i>					
Ireland	60,926	10,283	52,357	62,640	88.6
England and Wales	204,235	47,302	243,242	290,544	83.7
Scotland	44,324	6,408	46,211	52,619	87.8
Northern Ireland	15,845	4,263	13,653	17,916	76.2
USSR	2,543,081	1,347,597	560,176	1,907,773	29.4
Europe excl. Turkey	5,620,538	2,358,734	3,477,110	5,835,849	59.6
Europe incl. Turkey	5,779,347	2,463,862	3,541,755	6,005,622	59.0
Europe incl. USSR	8,322,428	3,811,459	4,101,931	7,913,395	51.8

TABLE 18

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 1000 ¹		Agricultural Net Production, 1931-1935		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Aver- age = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
NORTHERN EUROPE					
DENMARK	1,061	892	161,063	854	828
Bornholm	19	6	2,429	298	818
Sjælland	219	89	82,746	849	289
Lolland-Falster	52	19	10,287	461	425
Fyn	121	45	17,209	831	800
Jylland Østlige	185	66	28,511	859	839
Jylland Nordlige	187	64	26,597	831	826
Jylland Vestlige	208	72	82,004	859	849
Jylland Sydlig	70	25	11,279	875	854
FINLAND	2,015	635	56,495	65	70
Uudenmaa	151	47	5,647	87	94
Turu-Pori	287	92	10,862	64	89
Ahvenanmaa	14	4	552	92	108
Häme	200	65	6,201	72	75
Vilpuri	843	110	8,079	55	58
Mikkeli	146	46	4,220	67	72
Kuopio	265	82	6,535	58	63
Vaasa	846	106	9,217	62	68
Oulu	268	82	5,679	50	54
NORWAY	762	264	87,296	114	111
Østfold	87	14	2,512	158	140
Akershus	50	18	2,856	138	125
Hedmark	60	21	3,260	126	122
Opland	72	24	3,404	110	111
Buskerud	89	14	1,902	114	107
Vestfold	25	10	1,701	158	133
Telemark	80	11	1,429	111	102
Aust-Agder	19	7	793	97	89
Vest-Agder	27	9	1,111	96	97
Rogaland	50	17	3,412	159	158
Hordaland	61	20	2,570	98	101
Sogn og Fjordane	58	17	2,285	100	105
Møre	59	20	2,356	98	93
Sør-Trøndelag	54	18	2,150	93	93
Nord-Trøndelag	47	16	1,952	97	96
Nordland	51	18	2,216	101	97
Troms	23	8	1,099	111	108
Finnmark	5	2	287	134	113
SWEDEN	1,906	697	119,094	146	134
Stockholms län and stad	70	28	3,954	132	111
Uppsala län	49	19	3,538	168	146
Södermanlands län	70	27	4,764	159	138

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 10001		Agricultural Net Production, 1931-1935		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
SWEDEN (continued)					
Östergötlands län	106	41	7,433	163	142
Jönköpings län	89	33	5,263	136	125
Kronobergs län	73	27	3,977	127	115
Kalmar län	93	35	6,039	151	136
Gotlands län	29	11	2,330	136	167
Blekinge län	42	15	2,581	143	135
Kristianstads län	106	39	10,074	221	202
Malmöhus län	122	48	15,219	291	249
Hallands län	67	25	5,417	138	170
Göteborg. o. Bohus län	64	24	3,529	128	115
Älvsborgs län	123	47	6,742	128	112
Skaraborgs län	122	46	8,268	158	141
Värmlands län	99	35	4,000	94	89
Örebro län	66	26	4,771	163	144
Västmanlands län	53	20	3,534	155	139
Kopparbergs län	77	27	3,185	96	93
Gävleborgs län	71	25	3,235	106	101
Västernorrlands län	80	26	3,402	99	103
Jämtlands län	57	19	2,215	91	92
Västerbottens län	103	32	3,447	76	85
Norrbottnens län	74	23	2,169	66	74
EASTERN EUROPE					
ESTONIA	626	204	26,755	99	103
LATVIA	1,086	375	49,285	111	103
Zemgale	194	69	11,374	144	136
Vidzeme	274	100	15,607	133	123
Latgale	432	147	12,559	66	67
Kurzeme	151	55	9,144	141	131
LITHUANIA (incl. Memel)	1,657	546	51,713	73	74
POLAND	19,347	5,636	404,339	49	56
Warsaw (City and Province)	1,544	421	39,016	59	73
Lodz	1,278	371	25,863	47	55
Kielce	1,668	471	31,911	44	53
Lublin	1,749	482	36,753	49	60
Bialystok	1,149	321	24,392	51	61
Wilno	922	266	17,061	43	50
Novogrodek	371	254	15,900	43	49
Polesie	912	257	19,652	50	60
Wolyn	1,656	473	27,590	39	46

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 1000s		Agricultural Net Production, 1931-1935		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
POLAND (continued)					
Poznan	992	292	43,456	102	117
Pomorze	556	168	20,481	86	96
Slask (Silesia)	157	49	6,503	96	104
Krakow	1,868	402	25,620	44	50
Lwow	2,146	636	83,807	87	42
Stanislawow	1,105	841	16,005	84	37
Tarnopol	1,278	878	20,297	87	42
CENTRAL EUROPE					
AUSTRIA	1,772	627	101,907	134	128
Wien	16	7	872	54	42
Niederösterreich	499	188	35,964	168	154
Oberösterreich	825	117	22,556	162	151
Salzburg	77	26	8,900	118	118
Steiermark	883	134	17,511	106	103
Kärnten	148	48	6,905	109	118
Vorarlberg	40	14	2,096	122	117
Burgenland	164	55	6,766	96	97
Tirol	119	40	5,835	114	114
BELGIUM	1,190	489	112,606	220	181
Anvers	129	54	10,164	184	148
Brabant	192	82	13,274	161	127
Flandre Oc.	192	75	19,197	233	201
Flandre Or.	242	99	18,793	181	149
Hainaut	100	46	13,002	303	222
Liège	87	39	14,574	390	294
Limboung	110	41	8,041	170	154
Luxembourg	77	29	7,787	235	211
Namur	60	24	7,771	302	254
CZECHOSLOVAKIA					
Bohemia	4,812	1,484	216,123	105	115
Moravia-Silesia	1,627	534	107,969	155	159
Slovakia	968	295	53,734	129	143
Sub-Carpathian Russia	1,797	537	46,923	61	69
	419	117	7,499	42	50
FRANCE	11,890	4,394	898,537	176	160
Ain	142	54	9,214	151	134
Aisne	124	48	18,472	253	220
Allier	158	62	15,008	221	190
Alpes, Basses	44	17	2,829	150	131
Alpes, Hautes	43	16	1,791	97	88
Alpes, Maritimes	72	27	2,700	87	78
Ardeche	153	54	6,258	95	91

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 1000s		Agricultural Net Production, 1981-1985		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
FRANCE (continued)					
Ardennes	50	21	5,408	252	202
Ariège	88	33	4,701	124	112
Aube	59	24	5,299	209	178
Aude	159	60	12,066	177	159
Aveyron	175	62	11,881	158	150
Belfort	9	4	799	207	157
Bouches-du-Rhône	101	40	9,462	218	186
Calvados	181	47	15,248	271	255
Cantal	111	37	8,479	178	180
Charente	158	58	8,190	124	111
Charente Inf.	182	67	10,882	138	122
Cher	115	45	9,254	168	161
Corrèze	147	53	11,881	180	168
Corse	120	35	8,935	76	88
Côte-d'or	96	38	10,891	264	225
Côtes-du-Nord	808	96	18,485	142	151
Creuse	181	48	9,863	175	161
Dordogne	280	84	12,702	129	119
Doubs	70	28	4,095	136	115
Drôme	115	44	6,489	181	116
Eure	107	40	9,850	215	198
Eure-et-Loir	111	40	9,005	189	177
Finistère	882	118	17,308	121	120
Gard	136	51	10,765	184	166
Garonne, Haute	161	60	9,844	142	129
Gers	185	51	11,191	198	172
Gironde	226	87	17,017	175	154
Hérault	214	79	20,045	218	199
Ille-et-Vilaine	260	88	19,812	178	177
Indre	136	51	10,438	179	161
Indre-et-Loire	127	49	8,473	155	136
Isère	174	69	11,451	153	130
Jura	85	32	4,726	130	116
Landes	182	51	7,496	132	115
Loir-et-Cher	122	44	8,437	161	151
Loire	129	52	8,739	158	182
Loire, Haute	145	49	7,061	114	113
Loire, Inférieure	224	82	19,228	200	184
Loiret	127	47	9,017	165	151
Lot	109	39	4,981	106	100
Lot-et-Garonne	142	54	10,271	168	149
Lozère	61	19	2,668	102	110
Maine-et-Loire	210	76	19,478	216	201
Manche	208	71	18,946	212	209
Marne	97	39	9,462	227	190

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 10001		Agricultural Net Production μ 1981-1985		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
SWITZERLAND (cont.)					
Luzern, Uri, Schwyz, Obwalden, Nidwalden and Zug	110	48	9,526	202	174
Fribourg	68	28	5,172	191	177
Solothurn, Basel-Stadt, Basel-Land and Aargau	98	38	8,023	191	166
Appenzell A.-Rh., App. I.-Rh., St. Gallen and Glarus	82	32	7,311	208	179
Graubünden	42	16	2,659	147	180
Ticino	40	12	1,895	110	124
Vaud, Neuchâtel and Genève	105	45	10,889	242	190
Valais	67	24	8,564	124	117
BALKANS					
ALBANIA	800	240	7,646	22	25
BULGARIA	4,088	1,178	82,394	47	55
Vratsa	570	167	18,829	55	68
Pleven	780	218	15,113	48	56
Choumen	700	204	14,185	47	55
Plovdiv	508	148	9,527	44	52
Stara-Zagora	605	170	12,885	50	59
Bourgas	852	104	8,446	56	64
Sofia	628	172	8,909	33	41
GREECE	2,829	993	60,265	50	48
Eubée et Grèce Cent.	409	157	9,398	54	47
Péloponnèse	611	198	12,991	50	51
Il. Cyclades	51	17	698	32	32
Thessalie	375	97	6,076	51	49
Macédoine	708	258	15,320	50	47
Épire	174	54	2,828	36	41
Crète	224	72	4,808	50	52
Iles d'Égée	105	35	2,597	58	58
Thrace Occ.	188	67	8,999	51	47
Iles Ionniennes	116	38	1,555	31	32
HUNGARY	4,472	1,552	148,898	78	75
Baranya varm.	171	62	7,493	102	95
Fejér varm.	178	61	6,857	92	88
Győr, Moson és Pozsony v.	107	38	4,496	98	98
Komárom és Esztergom v.	71	26	2,665	87	80

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 1000s		Agricultural Net Production μ 1931-1935		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
HUNGARY (continued)					
Somogy	267	96	12,378	108	101
Sopron	106	87	4,444	98	94
Tolna	179	63	6,787	88	85
Vas	160	56	6,384	93	89
Veszprém	152	53	6,069	98	90
Zala	255	89	7,610	69	67
Bács-Bodrog	92	83	3,308	84	79
Békés	210	76	7,487	83	77
Bihar	135	47	4,381	76	73
Csanád, Arad és Torontál	124	43	4,838	91	86
Csongrád	182	65	3,489	44	42
Hajdu	155	53	3,458	52	51
Jász-Nagykun-Szolnok	266	95	9,661	85	80
Pest-Pilis-Solt-Kiskun	621	218	16,293	61	59
Budapest szekesf.	11	4	245	52	48
Szabolcs és Ung	277	85	8,194	69	76
Szatmár, Ugocsa és Bereg	118	86	3,638	75	79
Abaúj-Torna	66	22	2,195	78	78
Borsod, Gömör és Kishont	169	57	4,982	68	66
Heves	207	70	5,235	59	59
Négród és Hont	115	39	3,754	76	76
Zemplén	89	28	2,662	70	75
ROUMANIA	13,069	4,064	272,318	48	58
Old Kingdom	6,363	1,876	132,547	48	55
Bessarabia	2,466	731	47,964	45	51
Bucovina	595	176	11,573	45	52
Transylvania	3,645	1,279	80,234	51	49
TURKEY	11,289	3,383	169,773	85	89
1st Agric. Region	1,745	517	28,658	88	43
2nd " "	1,731	546	30,942	41	44
3rd " "	1,029	360	16,783	88	87
4th " "	945	286	22,833	56	63
5th " "	984	286	9,256	22	25
6th " "	797	221	11,226	83	40
7th " "	1,787	502	16,346	21	26
8th " "	1,197	360	14,059	27	31
9th " "	1,074	307	19,770	43	51

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 1000 ¹		Agricultural Net Production, 1931-1935		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
YUGOSLAVIA	10,629	8,219	175,752	88	43
Dravska	686	208	10,081	84	38
Drinska	1,258	867	18,934	85	40
Dunavska	1,779	569	58,027	69	73
Moravska	1,290	871	17,508	83	37
Primorska	747	222	6,937	22	24
Savska	2,026	629	83,847	89	42
Vardarska	1,226	852	14,878	28	33
Vrbaska	910	272	12,244	81	35
Zetska	756	225	7,876	24	27
Beograd	10	4	470	109	93
SOUTHERN EUROPE					
ITALY	17,953	6,475	561,726	73	68
Piemonte	1,410	578	57,833	96	79
Liguria	296	124	10,288	81	65
Lombardia	1,647	647	66,351	94	81
Venezia Tridentina	823	119	9,117	66	60
Veneto	1,996	670	56,437	66	66
Venezia Giulia e Zara	323	130	6,864	50	41
Emilia	1,738	633	71,987	96	89
Toscana	1,180	446	40,814	81	72
Marche	710	240	22,452	74	78
Umbria	410	148	18,202	75	70
Lazio	851	314	22,132	61	55
Abruzzi e Molise	992	312	21,691	51	55
Campania	1,290	428	34,409	62	63
Puglie	1,293	435	28,314	51	51
Lucania	326	106	13,658	98	101
Calabria	951	293	21,269	52	57
Sicilia	1,890	662	50,296	62	60
Sardegna	556	196	14,612	61	59
PORTUGAL	2,954	999	67,268	53	53
Aveiro	180	55	3,730	48	53
Beja	146	53	4,842	77	72
Braga	215	64	4,776	52	59
Bragança	117	41	2,221	44	43
Castelo Branco	140	47	2,398	40	40
Coimbra	198	67	3,399	40	40
Evora	113	41	3,803	78	73
Faro	144	51	1,536	25	24
Guarda	141	48	2,391	40	39
Leiria	167	58	3,324	46	45
Lisboa	157	63	6,828	101	85
Portalegre	101	37	3,388	78	72

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 1000 ¹		Agricultural Net Production ² 1931-1935		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
PORTUGAL (continued)					
Porto	220	73	4,689	50	50
Santarem	225	78	7,046	73	71
Viana do Castelo	148	44	3,223	51	58
Vila Real	166	55	3,299	46	47
Visu	275	88	4,326	87	89
Setubal	101	36	2,050	47	45
SPAIN	11,864	3,728	448,199	68	94
Galaico-Asturica	1,697	474	57,578	79	95
Vascongadas y Navarra	461	142	19,485	98	107
Castilla la Vieja	806	248	84,629	100	112
Aragón	576	196	28,180	114	118
Cataluña	908	307	42,732	110	109
Valencia	941	316	37,976	94	94
Murcia	497	155	19,818	93	100
Andalucía	2,734	885	77,631	66	69
Extremadura	718	238	24,256	79	80
Castilla la Nueva	1,233	380	48,852	92	101
León	948	288	41,560	102	118
Baleares	158	52	6,545	96	98
Canarias	192	52	9,017	109	136
BRITISH ISLES					
IRELAND	1,561	550	62,640	93	89
Munster	512	178	26,198	119	116
Connacht	435	150	18,175	71	69
Leinster	394	142	15,879	94	88
Ulster	225	80	7,394	77	78
ENGLAND & WALES	2,117	950	290,544	819	240
SCOTLAND	387	161	52,619	817	257
Northern	242	90	25,040	240	219
East Central	50	22	6,622	307	236
West Central	44	23	3,787	466	300
Southern	70	26	12,170	405	367
NORTHERN IRELAND	372	134	17,916	112	105
USSR	114,059	36,154	1,907,778	39	41
RSFSR	78,455	24,398	1,395,264	41	45
Northern R	2,034	624	82,654	88	41
Leningrad obl. & Kar. ASSR	4,018	1,267	67,349	89	42
Western R	3,646	1,071	62,290	40	46

TABLE 18 (continued)

Agricultural Population and Net Production by Districts

Countries and Districts	Agricultural Population in 1000 ¹		Agricultural Net Production ϕ 1931-1935		
	Persons Dependent on Agriculture	Males Engaged in Agriculture	In 1000 CU	European Average = 100	
				Per Person Dependent on Agriculture	Per Male Engaged in Agriculture
USSR (continued)					
Cent. Industrial R	12,828	8,716	203,329	37	43
Cent. Black Soil obl.	9,507	2,994	141,522	35	37
Vyatka R	3,124	953	49,562	37	41
Ural obl.	5,067	1,579	112,215	51	56
Bashkir ASSR	2,321	717	42,068	42	46
Cent. Volga R	8,871	2,763	140,504	37	40
Lower Volga R	4,270	1,337	70,758	39	42
Crimea ASSR	373	119	9,228	58	61
Northern Caucas. kray	6,134	1,995	124,981	43	49
Dagestan ASSR	622	187	6,995	26	29
Kazakhstan ASSR	5,812	1,934	104,378	42	42
Kirghis ASSR	890	820	12,839	34	31
Siberian kray	7,000	2,199	180,456	60	64
Buryat-Mongolian ASSR	414	139	7,228	41	41
Far Eastern kray and Yakutsk ASSR	1,529	502	27,034	41	42
Ukrainian SSR	22,305	7,329	346,287	36	37
White Russian SSR	3,999	1,333	71,069	41	42
Transcaucasian SFSR	4,189	1,243	42,117	24	27
Uzb. SSR & Turkmen SSR	5,112	1,849	52,912	24	22
Total Europe (Excl. Turkey & USSR)	136,360	45,450	5,771,503	100	100

ϕ Average.

¹ The agricultural populations represent the situation around 1930. The data are mainly from official sources, but some estimates have been necessary. Some national statistics give population dependent on agriculture, others give males gainfully occupied, and others give both. Where either figure was not available, it was estimated from the ratio prevailing in those countries where both figures are known.

² Excluding Saarland, which was not part of Germany during the period (1931-1935) to which these data refer.

TABLE 19

Yields per Hectare of Seven Important Crops in European Countries, 1931-1935¹

Country	Weighted Index (Europe = 100)	Unweighted Index
<i>Northern Europe</i>		
Denmark	177.8	164.0
Finland	108.6	104.7
Norway	183.1	186.2
Sweden	182.8	185.4
<i>Eastern Europe</i>		
Estonia	81.4	82.9
Latvia	84.9	85.9
Lithuania	82.6	81.7
Poland	82.9	80.9
<i>Central Europe</i>		
Austria	109.6	118.4
Belgium	176.9	171.0
Czechoslovakia	116.7	112.5
France	105.0	100.9
Germany	183.9	182.8
Luxembourg	109.0	109.2
Netherlands	168.5	170.2
Switzerland	148.4	151.8
<i>Balkans</i>		
Albania	95.9	87.5
Bulgaria	84.6	74.8
Greece	60.5	56.7
Hungary	96.2	85.2
Roumania	67.4	63.0
Turkey	63.5	62.6
Yugoslavia	88.9	69.7
<i>Southern Europe</i>		
Italy	107.5	98.1
Portugal	62.7	69.6
Spain	77.0	84.0
<i>British Isles</i>		
Ireland	160.2	159.4
United Kingdom	143.2	180.9
USSR	59.1	59.1
Europe ²	100.0	100.0

Data from: *Statistisches Jahrbuch für das Deutsche Reich*, 1938, pp. 42-45.

¹ Wheat, rye, barley, oats, maize, potatoes, and sugar beets.

² Excluding Turkey and USSR.

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APPENDIX II

STATISTICAL DATA ON AGRICULTURAL LAND UTILIZATION, POPULATION DENSITY, AND OVER-POPULATION

THIS Appendix consists of a series of tables supporting the discussion and illustrations in Chapter III. Table 1 summarizes the areas of agricultural land in Europe in terms of "arable equivalents"¹ and the density of agricultural population relative to these roughly comparable land areas. Tables 2 and 3 provide comparative data for Tables 6 and 7 in the text. The latter show the percentages of overpopulation under the assumptions of existing production and "standard" production and a European average per capita level of productivity taken as standard. Table 4 indicates in abbreviated form the projected populations in Eastern and Southern Europe at five-year intervals from 1940 to 1970.

¹ The expression of agricultural land areas in "arable equivalents" represents an attempt to achieve rough comparability in the reported areas of land used for agricultural purposes. The method assumes arable land to be of equal value and attempts to translate the areas under other types of utilization into approximate equivalents of arable land. Of the three principal land utilization types in addition to arable land, two are given equal weight throughout Europe: orchard and garden lands are assumed to be three times as valuable as plow land, and meadows are assumed to be only 40 per cent as valuable. Pasture lands, being very unequal in quality, are given a variable weight, centering around 20 per cent of the value of arable land.

A table summarizing reported areas under various types of land utilization around 1933, together with their "arable equivalent" values, is available at cost of microfilm reproduction upon request to the Office of Population Research, Princeton University, Princeton, New Jersey.

TABLE I

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Agricultural Land in KM ² :	Density per KM ²
ALBANIA	800	4,635	176.4
AUSTRIA	1,772	27,006	64.2
Wien	16	58	801.9
Niederösterreich	499	10,157	49.1
Oberösterreich	825	5,488	59.2
Salzburg	77	1,869	56.2
Steiermark	868	4,211	91.0
Kärnten	149	2,184	69.4
Tirol	119	1,588	74.9
Vorarlberg	40	1,046	38.2
Burgenland	164	2,139	76.7
BELGIUM	1,190	16,478	72.2
BULGARIA	4,068	42,872	95.4
CZECHOSLOVAKIA	4,812	69,289	69.4
Bohemia	1,627	28,651	56.8
Moravia-Silesia	868	15,794	61.8
Slovakia	1,797	21,282	84.6
Sub-Carpathian Russia	419	8,591	118.7
DENMARK	1,061	26,331	87.5
Islands	411	9,430	43.6
Jutland	650	18,901	84.4
ESTONIA	626	16,180	88.7
FINLAND	2,015	25,566	78.8
Uudenmaa	151	2,749	54.9
Turu-Pori	287	4,698	61.2
Ahvenanmaa	14	146	95.9
Häme	200	2,925	68.4
Viipuri	343	2,480	98.6
Mikkeli	146	1,371	106.5
Kuopio	265	2,825	114.0
Vasa	846	4,939	70.1
Oulu	268	2,938	89.5
FRANCE	11,890	341,930	28.8
Ain	142	2,062	46.4
Aisne	124	5,093	24.5
Allier	158	5,108	30.9

TABLE 1 (continued)

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Land in KM ² 2	Density per KM ²
FRANCE (continued)			
Alpes (Basses)	44	2,199	20.0
Alpes (Hautes)	43	1,628	26.4
Alpes-Maritimes	72	1,614	44.6
Ardèche	153	3,155	48.5
Ardennes	50	2,488	20.1
Ariège	88	2,000	44.0
Aube	59	3,489	16.9
Aude	159	6,341	25.1
Aveyron	175	5,687	30.8
Belfort	9	237	38.0
Bouches-du-Rhône	101	3,451	29.3
Calvados	131	3,041	43.1
Cantal	111	2,526	43.9
Charente	153	4,688	32.6
Charente-Inférieure	182	5,611	32.4
Cher	115	4,719	24.4
Corrèze	147	2,758	53.3
Corse	120	3,242	37.0
Côte-d'Or	96	4,416	21.7
Côtes-du-Nord	808	5,307	57.1
Creuse	131	3,432	38.2
Dordogne	230	5,846	39.3
Doubs	70	1,926	36.3
Drôme	115	3,615	31.8
Eure	107	3,532	30.3
Eure-et-Loir	111	4,862	22.8
Finistère	332	4,305	69.1
Gard	136	5,608	24.3
Garonne (Haute)	161	5,082	31.7
Gers	135	5,711	23.6
Gironde	226	6,719	33.6
Hérault	214	7,509	28.5
Ille-et-Vilaine	260	5,248	49.5
Indre	136	5,006	27.2
Indre-et-Loire	127	4,677	27.2
Isère	174	4,634	37.5
Jura	85	2,204	38.6
Landes	132	2,797	47.2
Loir-et-Cher	122	4,663	26.2
Loire	129	2,894	44.6
Loire (Haute)	145	2,596	55.9
Loire-Inférieure	224	3,575	62.7
Loiret	127	4,738	26.8
Lot	109	2,685	40.6
Lot-et-Garonne	142	4,345	32.7

TABLE 1 (continued)

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Agricultural Land in KM ² :	Density per KM ²
FRANCE (continued)			
Lozère	61	2,423	25.2
Maine-et-Loire	210	6,231	33.7
Manche	208	2,932	70.9
Marne	97	5,233	18.5
Marne (Haute)	49	2,877	17.0
Mayenne	141	3,770	37.4
Meurthe-et-Moselle	49	2,888	17.0
Meuse	52	2,806	18.5
Morbihan	271	4,051	66.9
Moselle	78	3,798	20.5
Nièvre	103	3,549	29.0
Nord	163	4,055	40.2
Oise	96	4,113	23.3
Orne	126	2,828	45.3
Pas-de-Calais	172	5,277	32.6
Puy-de-Dôme	215	4,582	46.9
Pyrénées (Basses)	173	3,310	52.3
Pyrénées (Hautes)	81	1,883	43.0
Pyrénées-Orientales	99	3,162	31.3
Rhin (Bas)	134	2,701	49.6
Rhin (Haut)	78	1,898	41.1
Rhône	110	2,180	50.5
Saône (Haute)	82	2,356	34.8
Saône-et-Loire	209	5,023	41.6
Sarthe	172	3,772	45.6
Savoie	101	1,685	59.9
Savoie (Haute)	119	1,818	65.5
Seine	24	176	136.4
Seine-Inférieure	130	3,731	34.8
Seine-et-Marne	93	4,305	21.6
Seine-et-Oise	159	3,932	40.4
Sèvres (Deux)	177	4,811	36.8
Somme	124	4,839	25.6
Tarn	128	4,444	28.8
Tarn-et-Garonne	91	3,150	28.9
Var	73	3,855	18.9
Vaucluse	93	3,025	30.7
Vendée	227	5,604	40.5
Vienne	165	5,643	29.2
Vienne (Haute)	147	3,729	39.4
Vosges	84	2,261	37.2
Yonne	109	3,665	29.7

TABLE 1 (continued)

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Agricultural Land in KM ² *	Density per KM ²
GERMANY	18,297	255,025	52.1
Prussen	7,849	161,334	48.7
Ostpreussen	942	22,000	42.8
Stadt Berlin	48	601	79.9
Brandenburg	749	19,700	38.0
Pommern	695	18,068	38.5
Grens. Posen-Westpr.	148	4,097	34.9
Niederschlesien	771	15,906	48.5
Oberschlesien	369	6,165	59.9
Sachsen	716	16,712	42.8
Schleswig-Holstein	840	9,427	86.1
Hannover	971	16,605	58.5
Westfalen	690	10,297	61.2
Hessen-Nassau	590	7,848	67.5
Rheinprovinz	910	13,406	67.9
Hohenzollern	85	878	60.6
Bayern	2,859	37,009	63.7
Sudbayern	2,160	33,887	63.7
Nordbayern			
Pfals	199	3,122	63.7
Sachsen	418	9,768	42.8
Württemberg	733	9,905	74.0
Baden	586	7,338	79.9
Thüringen	284	6,407	44.3
Hessen	300	4,675	64.2
Hamburg	21	815	66.7
Mecklenburg	295	9,350	31.6
Oldenburg	187	2,933	63.8
Braunschweig	91	2,098	43.4
Bremen	8	144	55.6
Anhalt	61	1,587	39.7
Lippe	37	720	51.4
Lübeck	7	205	34.1
Schaumburg-Lippe	10	206	48.5
Saarland	58	1,011	52.4
GREAT BRITAIN	2,876	84,782	33.9
ENGLAND AND WALES	2,117	62,567	33.8
Southeast	472	11,459	41.2
North I	47	2,153	21.8
North II	147	5,303	27.7
North III	76	2,140	35.5
North IV	135	2,434	55.5
Midland I	235	7,708	30.5
Midland II	121	3,860	31.3
East	425	13,855	30.7

TABLE 1 (continued)

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Agricultural Land in KM ² a	Density per KM ²
GREAT BRITAIN (Continued)			
Southwest	804	8,364	86.8
Wales I	59	1,882	89.2
Wales II	138	3,459	89.9
NORTHERN IRELAND			
	872	6,816	68.9
SCOTLAND			
Northern	387	15,900	24.8
East Central	242	9,430	25.7
West Central	50	1,651	27.0
Southern	44	1,681	26.2
	70	2,937	28.8
GREECE			
Central Greece and Euboea	2,829	82,638	66.7
Peloponnesos	409	5,467	74.8
Cyclades	611	5,597	109.2
Ionian Islands	51	542	94.1
Thessaly	116	542	214.0
Macedonia	275	4,708	59.5
Epirus	708	9,835	75.8
Crete	174	1,568	111.8
Aegean Islands	224	1,589	141.0
Western Thrace	105	862	121.8
	188	2,438	75.1
HUNGARY			
Transdanubia	4,472	70,838	68.1
Great Plain	1,641	26,610	61.7
North	2,185	84,909	62.6
	646	9,814	69.4
IRELAND			
	1,561	15,228	102.5
ITALY			
Piemonte	17,953	886,126	58.4
Liguria	1,410	29,468	47.8
Lombardia	296	9,512	81.1
Venezia Tridentina	1,647	28,678	69.6
Veneto	828	20,096	16.1
Venezia Giulia e Zara	1,996	24,792	60.5
Emilia	828	10,744	80.1
Toscana	1,738	24,690	70.4
Marche	1,180	85,836	82.9
Umbria	710	10,082	70.4
Lazio	410	11,810	86.8
Abruzzi e Molise	851	20,966	40.6
Campania	992	16,938	58.6
	1,290	16,110	80.1

TABLE 1 (continued)

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Agricultural Land in KM ² :	Density per KM ²
ITALY (continued)			
Puglia	1,298	16,942	76.8
Lucania	826	9,284	85.1
Calabria	951	19,846	49.2
Sicilia	1,890	28,040	82.0
Sardegna	556	13,292	41.8
LATVIA	1,036	16,398	68.2
LITHUANIA	1,657	81,145	58.2
LUXEMBOURG	85	1,296	65.6
NETHERLANDS	1,436	17,572	81.7
Groningen	104	1,821	87.1
Friesland	143	1,266	104.7
Drenthe	95	1,101	86.8
Overijssel	114	1,856	84.1
Gelderland	216	2,419	89.8
Utrecht	50	612	81.7
Noordholland	180	1,585	82.0
Zuidholland	202	1,854	109.0
Zeeland	94	1,397	67.8
Noordbrabant	208	2,550	81.6
Limburg	104	1,512	68.8
NORWAY	762	8,951	85.1
Østfold	87	827	44.7
Akershus	50	902	55.4
Hedmark	60	852	70.4
Opland	72	789	97.4
Buskerud	89	820	75.0
Vestfold	25	529	47.8
Telemark	80	839	86.5
Aust-Agder	19	182	104.4
Vest-Agder	27	224	120.5
Rogaland	50	448	111.6
Hordaland	61	404	151.0
Sogn og Fjordane	53	835	158.2
Møre	59	498	119.7
Sør-Trøndelag	54	669	80.7
Nord-Trøndelag	47	646	72.8
Nordland	51	505	101.0
Troms	23	242	95.0
Finnmark	5	57	87.7

TABLE 1 (continued)

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Agricultural Land in KM ²	Density per KM ²
POLAND	19,847	222,698	86.9
Central	7,888	86,096	85.8
East	4,861	58,040	75.1
South	5,892	47,986	122.8
West	1,705	30,576	55.6
PORTUGAL	2,954	59,672	49.5
ROUMANIA	18,069	164,010	79.7
Old Kingdom	6,868	79,686	79.9
Bessarabia	2,466	35,391	69.7
Bukovina	595	4,078	145.9
Transylvania	8,645	44,857	81.8
SPAIN	11,864	849,211	84.0
Galicia-Asturias	1,697	16,628	102.0
Vascongadas y Nav	461	8,879	51.9
Castilla la Vieja	806	24,861	32.4
Aragón	576	24,767	28.3
Cataluña	908	27,456	32.9
Valencia	941	25,248	37.3
Murcia	497	22,451	22.2
Andalucía	2,784	74,630	36.6
Extremadura	718	28,245	25.4
Castilla la Nueva	1,238	57,929	21.8
León	948	31,082	30.5
Balearcs	158	4,765	33.3
Canarias	192	2,275	84.4
SWEDEN	1,906	41,982	45.4
Stockholms stad.	4	23	178.9
Stockholms län	66	1,727	33.2
Uppsala län	49	1,637	29.9
Södermanlands län	70	1,923	36.4
Östergötlands län	106	2,811	37.7
Jönköpings län	69	1,678	53.0
Kronobergs län	73	1,263	57.8
Kalmar län	93	2,181	42.6
Gotlands län	29	940	30.9
Blekinge län	42	712	59.0
Kristianstads län	106	2,559	41.4
Malmöhus län	123	3,543	34.4
Hallands län	67	1,518	44.1
Göteborgs o. Bohus län	64	1,030	62.1
Älvsborgs län	123	2,282	53.9
Skaraborgs län	122	3,433	35.5

TABLE 1 (continued)

Density of Population Dependent on Agriculture per Square Kilometer of Arable-Equivalent Agricultural Land, European Countries, around 1930

Country and Province	Population Dependent on Agriculture ¹ (in thousands)	Arable-Equivalent Agricultural Land in KM ² ²	Density per KM ²
SWEDEN (continued)			
Värmlands län	99	2,081	47.6
Örebro län	66	1,721	38.8
Västmanlands län	53	1,731	30.6
Kopparbergs län	77	1,812	58.7
Gävleborgs län	71	1,267	56.0
Västernorrlands län	80	1,174	68.1
Jämtlands län	57	794	71.8
Västerbottens län	103	1,417	72.7
Norrbottnens län	74	1,225	60.4
SWITZERLAND			
Zürich, Schaffhausen and Thurgau	901	8,405	107.1
Bern	122	874	139.6
Luzern, Uri, Schwyz, Obwalden, Nidwalden and Zug	172	1,562	110.1
Fribourg	110	800	137.5
Solothurn, Basel-Stadt, Basel-Land and Aargau	68	514	122.6
Appenzell-A-Rh., Appenzell-I-Rh., St. Gallen and Glarus	98	767	127.8
Graubünden	82	602	136.2
Ticino	42	952	44.1
Vaud, Neuchâtel and Genève	40	434	92.2
Valais	105	1,196	87.8
	67	705	95.0
YUGOSLAVIA			
	10,629	106,186	100.1
Dravska	686	6,190	110.8
Drinska	1,258	12,078	104.2
Dunavska	1,779	26,090	68.2
Moravska	1,230	10,826	118.6
Primorska	747	6,286	118.8
Savska	2,026	11,798	171.7
Vardarska	1,226	11,668	105.1
Vrbaska	910	8,971	101.4
Zetska	756	6,088	125.2
Beograd	10	202	49.5

¹ The agricultural populations represent the situation around 1930. The data are mainly from official sources, but some estimates have been necessary. Some national statistics give only data on persons gainfully occupied in agriculture. In these cases the total agricultural population (active and passive) has been estimated from the ratio prevailing in those countries where both figures are known.

² Orchards and gardens computed as 8.00 hectares arable, meadows as 0.40 hectare and pastures as approximately 0.20 hectare, varied by type of pastures. See note at beginning of this Appendix.

TABLE 2

"Standard" and "Surplus" Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming Existing Production and French Per Capita Level¹

Country and Province	Standard Population, Assuming French Per Capita Level ² 000's omitted (1)	Surplus Population	
		Numbers 000's omitted (2)	Per Cent (3)
Albania	101	699	87.4
Bulgaria	1,091	2,997	78.8
Czechoslovakia	2,868	1,949	40.5
Bohemia	1,480	197	12.1
Moravia-Silesia	712	256	26.4
Slovakia	621	1,176	65.4
Sub-Carpathian Russia	99	820	76.4
Estonia	354	272	48.5
Greece	798	2,081	71.8
Central Greece and Eubœa	124	285	69.7
Peloponnesos	172	439	71.8
Cyclades	9	42	82.4
Ionian Islands	21	95	81.9
Thessaly	80	195	70.9
Macedonia	208	505	71.8
Epirus	87	187	78.7
Crete	64	160	71.4
Aegean Islands	84	71	67.6
Western Thrace	53	180	71.0
Hungary	1,972	2,500	55.9
Transdanubia	863	778	47.4
Great Plain	860	1,825	60.6
North	249	897	61.5
Italy	7,440	10,518	58.6
Piemonte	766	644	45.7
Liguria	136	160	54.1
Lombardia	879	768	46.6
Venezia Tridentina	121	202	62.5
Veneto	748	1,248	62.5
Venezia Giulia e Zara	91	282	71.8
Emilia	958	785	45.2
Toscana	541	689	54.2
Marche	297	418	58.2
Umbria	175	235	57.8
Lazio	298	558	65.6
Abruzzi e Molise	287	705	71.1
Campania	456	884	64.7
Puglie	875	918	71.0
Lucania	181	145	44.5
Calabria	282	669	70.8
Sicilia	666	1,224	64.8
Sardegna	194	862	65.1
Latvia	658	888	87.0

TABLE 2 (continued)

"Standard" and "Surplus" Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming Existing Production and French Per Capita Level¹

Country and Province	Standard Population, Assuming French Per Capita Level ² 000's omitted (1)	Surplus Population	
		Numbers ³ 000's omitted (2)	Per Cent (3)
Lithuania	685	972	55.7
Poland	5,355	18,992	72.8
Central	2,092	5,296	71.7
East	1,063	3,298	75.6
South	1,268	4,624	78.5
West	933	772	45.8
Portugal	891	2,063	69.8
Entre Minho e Douro	168	416	71.2
Tras os Montes	73	210	74.2
Beira	215	719	77.0
Estremadura	255	394	60.7
Alentejo and Algarve	180	324	64.8
Roumania	3,607	9,462	72.4
Old Kingdom	1,756	4,607	72.4
Bessarabia	635	1,831	74.2
Bukovina	153	442	74.8
Transylvania	1,063	2,582	70.8
Spain	5,936	5,928	50.0
Galasico-Asturica	763	934	55.0
Vascongadas y Navarra	257	204	44.8
Castilla la Vieja	459	347	43.1
Aragón	373	203	35.2
Cataluña	566	337	37.3
Valencia	503	438	46.5
Murcia	262	235	47.3
Andalucia	1,028	1,706	62.4
Extremadura	321	397	55.3
Castilla la Nueva	647	586	47.5
León	550	398	42.0
Balears	87	71	44.9
Canarias	119	73	38.0
Yugoslavia	2,328	3,301	78.1
Dravska	133	353	80.6
Drinska	251	1,007	80.0
Dunavska	702	1,077	60.5
Moravska	232	998	81.1
Primorska	92	655	87.7
Savska	448	1,578	77.9
Vardarska	197	1,029	83.9
Vrbaska	162	748	82.2
Zetska	104	652	86.2
Beograd	6	4	40.0

¹ The population dependent on agriculture and the value of agricultural production are given in Table 6, text, and not repeated here.

² This column represents the index values of agricultural production divided by 75.5, which represents the French per capita index value. See Appendix I, Table 18.

³ This column represents the remainder after the "standard population," as given in column 1, is subtracted from the actual agricultural population as given in Table 6 of the text.

TABLE 3

“Standard” and “Surplus” Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming French Productivity per Hectare of Arable-Equivalent Agricultural Land and French Per Capita Level¹

Country and Province	Standard Pop. with Standard Production, Assuming French Per Capita Level ² (000's omitted) (1)	Surplus Population	
		Numbers ² (000's omitted) (2)	Per Cent (3)
Albania	158	642	80.8
Bulgaria	1,498	2,595	63.5
Czechoslovakia	2,414	2,398	49.8
Bohemia	998	629	38.7
Moravia-Silesia	550	418	43.2
Slovakia	740	1,057	58.8
Sub-Carpathian Russia	125	294	70.2
Estonia	564	62	9.9
Greece	1,187	1,692	59.8
Central Greece and Eubœa	191	218	53.8
Peloponnesos	195	416	68.1
Cyclades	19	82	62.7
Ionian Islands	19	97	83.6
Thessaly	164	111	40.4
Macedonia	825	888	54.1
Epirus	54	120	69.0
Crete	55	169	75.4
Aegean Islands	80	75	71.4
Western Thrace	85	98	53.6
Hungary	2,467	2,005	44.8
Transdanubia	927	714	43.5
Great Plain	1,216	969	44.8
North	324	322	49.8
Italy	11,709	6,244	34.8
Piemonte	1,027	383	27.2
Liguria	331	-85	-11.8
Lombardia	825	822	49.9
Venezia Tridentina	700	-377	-116.7
Veneto	864	1,182	56.7
Venezia Giulia e Zara	374	-51	-15.8
Emilia	860	878	50.5
Toscana	1,248	-68	-5.8
Marche	351	359	50.6
Umbria	394	16	3.9
Lazio	780	121	14.2
Abruzzi e Molise	590	402	40.5
Campania	561	729	56.5
Puglie	590	708	54.4
Lucania	328	8	.9
Calabrie	674	277	29.1
Sicilia	808	1,087	57.5
Sardegna	468	93	16.7

TABLE 3 (continued)

"Standard" and "Surplus" Agricultural Populations, Eastern and Southern Europe, around 1930, Assuming French Productivity per Hectare of Arable-Equivalent Agricultural Land and French Per Capita Level¹

Country and Province	Standard Pop. with Standard Production, Assuming French Per Capita Level ² (000's omitted) (1)	Surplus Population	
		Number ³ (000's omitted) (2)	Per Cent (3)
Latvia	571	465	44.9
Lithuania	1,085	572	34.5
Poland	7,758	11,589	59.9
Central	2,999	4,889	59.4
East	2,022	2,339	58.6
South	1,672	4,220	71.6
West	1,065	640	37.5
Portugal	2,079	875	29.6
Roumania	5,713	7,356	56.3
Old Kingdom	2,776	3,587	56.4
Bessarabia	1,233	1,233	50.0
Bukovina	142	453	76.1
Transylvania	1,568	2,082	57.1
Spain	12,165	-801	-2.5
Galicio-Asturica	579	1,118	65.9
Vascongadas y Navarra	309	152	33.0
Castilla la Vieja	866	-60	-7.4
Aragón	863	-287	-49.8
Cataluña	957	-54	-6.0
Valencia	879	62	6.6
Murcia	782	-285	-57.3
Andalucía	2,600	134	4.9
Extremadura	984	-266	-37.0
Castilla la Nueva	2,018	-785	-63.7
León	1,088	-135	-14.2
Balears	166	-8	-5.1
Canarias	79	118	58.9
Yugoslavia	3,697	6,932	65.2
Dravska	216	470	68.5
Drinska	420	838	66.6
Dunavska	909	870	48.9
Moravska	877	853	69.3
Primorska	219	528	70.7
Savska	411	1,615	79.7
Vardarska	406	820	66.9
Vrbaska	312	598	65.7
Zetska	210	546	72.2
Beograd	7	8	30.0

¹ The total agricultural area in arable-equivalents and the standard agricultural production (assuming the French productivity per hectare) are given in Table 7, text, and not repeated here.

² This column represents the standard index value of agricultural production (as given in Table 7 of the text), divided by 75.5, which represents the French per capita index value. See Appendix I, Table 18.

³ This column represents the remainder after the "standard population," as given in column 1, is subtracted from the actual population dependent on agriculture, as given in Table 6 of the text and Table 1 of this appendix.

TABLE 4

Population Projections, Eastern and Southern Europe, 1940 to
1970, Total Population and Ages 15-64¹
(Carried to 3 Significant Numbers and 000's Omitted)

Regions	1940	1945	1950	1955	1960	1965	1970
Eastern Europe^a							
Total	115,000	120,000	123,000	127,000	130,000	131,000	132,000
Ages 15-64	72,700	78,400	83,400	87,500	90,400	92,200	92,900
Southern Europe^b							
Total	77,500	80,100	82,300	84,100	85,500	86,300	86,500
Ages 15-64	49,300	52,600	55,800	58,100	59,800	60,800	61,200

^a Includes Albania, Bulgaria, Czechoslovakia, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Roumania, and Yugoslavia.

^b Includes Italy, Portugal, and Spain.

¹ From Frank W. Notestein and Others, *The Future Population of Europe and the Soviet Union* (League of Nations; Agents: Columbia University Press, 1944), Appendix IV.

APPENDIX III

SURVEY OF LAND TENURE AND AGRICULTURAL LABOR SYSTEMS IN EASTERN AND SOUTHERN EUROPE

THIS Appendix is designed as a supplement to the second section of Chapter III, where the property and labor systems of Eastern and Southern Europe are discussed in general terms. Table 8 and Figures 17, 18, and 19 in the text summarize some of the statistical material with respect to the distribution of agricultural holdings and the proportions of land holders and landless workers. The present rather detailed survey is added in view of the great importance of land tenure and distribution for the economic and demographic characteristics of the agrarian regions. Tenure arrangements especially are relevant to such questions as the ease or difficulty of accumulating liquid capital, the economic well-being of the cultivator, the sensitivity of productive organization to changing market possibilities, and the economic opportunities for growing rural populations. The great variation in land tenures within the regions here considered, and the scattered and unsystematic character of materials hitherto available, prompts a review with attention to differences within as well as between countries.

A Classificatory Scheme for Land Tenures and Division of Labor in Agriculture

The distribution of rights in land is one of the most complex features of property institutions in human society. That this should be so is to be explained in terms of the universality of land as a source of economic wealth, and its consequent scarcity or differential value in view of the prevailing technology. Even in sparsely settled primitive areas, with communal internal distribution of rights, the group will be prepared to protect its area from outside encroachments. Whatever has economic value is also the object of rules defining the relative rights of potential claimants. The constancy of land as an economic good and the high variability of the groups that define the rules for its use combine to provide a seemingly infinite variety of modes of property and tenure.

The modes of land tenure in Eastern and Southern Europe are sufficiently heterogeneous to warrant a general summary of types of property and labor systems, with particular reference to rights in land. For this purpose a polar case of completely "private" property with individual operation may be used as a starting-point. In this polar case the cultivator of the land would hold all rights in the land: occupancy, use, appropriation of product, unlimited power of alienation, possibly advantageous non-use, and so on. The cultivation of the land would be carried on exclusively by the owner, or at most by his immediate family. Existing modes of land tenure and the division of labor would thus represent major or minor

modifications of the polar case. The types and sources of those modifications provide a convenient classificatory device for the great variety of actual situations. Such a classification is presented in the following outline:

Sources and Types of Modification in "Purely" Private Land Ownership¹

- I. Legal Authority (omnipresent and only unimportant in instances where legal authority and property holder are the same)
- II. Hierarchical Division of Rights
 - A. Subinfeudation
 1. Types of tenures
 2. Types of servitudes
 - B. Tenancy
 1. Share tenancies with varying degrees of capitalization and management by landlord, and varying degrees of security of tenure
 2. Fixed rentals in cash or kind, with varying degrees of security of tenure
 - C. Employment
 1. Deputatists: payment in land use and kind, relative security
 2. Annual or semi-permanent workers
 3. Temporary or seasonal workers
- III. Equalitarian Division of Rights
 - A. Familial or Communal Rights
 1. Contemporaries
 - a. Devices for determining membership and insuring continuity
 - b. Devices for apportioning capital and product
 - c. Devices for centralized control
 2. Successive generations
 - a. Inheritance provisions
 - (1) Entailment
 - (2) Division in kind
 - (3) Undivided inheritance with cash settlement
 - (4) Mortmain
 - b. Other controls on alienation
 - B. Debt Structure
 - C. Incorporation
 - D. Cooperation and Mutual Aid

¹ Certain features of the present classification are derived from the highly suggestive discussion by Carl Brinkmann, "Land Tenure: Introduction," *Encyclopedia of the Social Sciences* (New York: The Macmillan Co., 1931-1934, 15 vols.), 9:78-76. For a general discussion of the classes of agricultural laborers, see International Labour Office, *The Representation and Organisation of Agricultural Workers*, Studies and Reports, Series K, No. 8 (Geneva: 1928); Adam Rose, "Agricultural Workers and the Agrarian Reform in Central Europe," *International Labour Review*, 18:807-838, September, 1938.

The first limitation, that of the rights retained by the legal authority, is inherent in any property system. This means that the polar case is also an abstract case: no such completely private property does or could exist. The existence of rights presupposes potential challengers to those rights, and their protection by competent authority. Moreover, the rights of a single property holder must always be limited by the legal authority in view of the equally legitimate rights of others. Thus, a farmer may be prevented from damming up a stream for purposes of irrigating his land but at the expense of the water supply of his neighbor; he cannot be allowed to burn off the stubble in his fields if such action endangers the unharvested crops or the buildings of his neighbor. The limitations enforced by legal authority extend beyond the protection of other individual rights, however. The power of taxation, the right of eminent domain, and those rights associated with the police power of the state—narrowly or broadly conceived—comprise the minimum modifications imposed on individual property rights. Stated in another way, there is always a minimum division of rights in land, that between the individual property holder and the legal authority. In the cases of further divisions of rights, the state always has the role of the more or less concealed "third party." As noted in the outline above, the only case in which the relationship of the legal authority to the property holder entails no limitations upon property rights is the case of governmental ownership. Accordingly, in the sense of unlimited control of economic goods, governmental ownership is more "private" than individual ownership.

The "hierarchical" division of rights is very common, in one form or another, in land tenure. Although any property system implies a potential power relationship between the holder of rights and challengers to those rights, such a power relationship depends on the intervention of legal authority in behalf of the property holder. On the other hand, the control of capital means also the control of employment in its broadest sense. Where land is the primary source of livelihood and virtually no monetary system prevails, some form of communal or feudal tenure is likely to prevail. The latter is the more likely where land is scarce and economic insecurity common. Although in recent times the customary emphasis is on the lack of freedom of the feudal tenant, actually the advantages and disadvantages of the relationship are highly variable for all parties concerned. An assured labor supply is of advantage to the landlord if other opportunities for labor are available to the tenant. On the other hand, an assured tenure of land is of advantage to the cultivator if other means of livelihood are not available and he is in a poor bargaining position for his labor.

Share tenancy, fixed rentals, or various types of direct employment by the landlord represent types of division of property rights more on the modern commercial pattern. Under a contractual system the authority of the landlord is both more and less extensive than under a feudal one. It is more extensive in that it is less limited by reciprocal duties to the tenant

or worker and by long-standing custom with respect to techniques and products. On the other hand, the tenant or worker retains the nominal right to sever the relation and accept a more advantageous arrangement elsewhere, and he retains an official personal equality with the owner in contrast to the personal dependency of the feudal serf. In fact, a contractual system allows greater variation in the relation of owners and cultivators, since the relation is more sensitive to short-run changes in bargaining power. Even a contractual system allows some degree of division of rights in land. This is clearest in the cases of tenancy and the more permanent agricultural workers, and at a minimum in the case of temporary wage laborers whose rights in the land are only rights to a wage from the product of their labor. It follows, however, that any increase in security of employment—whether by governmental protection or by collective bargaining—correspondingly decreases the unlimited authority of the employer.

A division of rights in land without appreciable direct authority of some holders of rights over others may be called equalitarian. As indicated in the outline above, such a division of rights is common and takes many forms. The most widespread appearance of this general class of property arrangements is to be found in the relationship between kinship systems and control of means of production. Although unified operation of holdings will ordinarily require some device for centralized control, the control is determined by considerations other than differential property rights. Even if the rights of the family are asserted only in the form of inheritance provisions and other restrictions on alienation, those provisions limit the power of the operator of any given generation, and essentially place him in the position of trustee.

Other "horizontal" divisions of rights in land represent various modifications of purely individual and private control and management. A debt structure, involving mortgages or some other claims against the land by the creditor, limits alienation except with the permission or under the foreclosure of the creditor, and engages part of the product for payment of principal and interest. Cooperation and mutual aid, although ordinarily involving a minimum of legal division of rights, have the effect of modifying a purely individualistic property arrangement. Incorporation, although rare as a form of land tenure, may provide a convenient form for large-scale private capitalization. The effect is a unification of control through the legal fiction of corporate personality, with a division of benefits very like that of an ordinary small-scale debt structure.

It may be noted that all forms of division of rights in land tenure tend toward (a) spreading the benefits of land use beyond a single owner or his immediate family, (b) spreading some degree of control among those who have some recognizable rights, and thus (c) ordinarily allowing the operation of land in larger effective units than would be possible in our polar case.

Land Holdings and Labor in Eastern and Southern Europe

In order to give some uniformity to a descriptive summary of agricultural property and labor systems by country, the following outline and symbols will be used:

1. Tenure and Property System
2. Land Reforms: Character and General Extent
3. Classes of Agricultural Workers and Nature of Labor Relations
4. Social Legislation for Agricultural Workers, Unemployment, Wage Scales, and Kindred Problems

The systematic character of the survey is further enhanced by an arrangement of the materials under Topic 1 to follow the general classification of property systems given above. Obviously, the importance of the other topics will vary from one country to another.

It is to be particularly noted that the descriptions of tenure and labor arrangements, as well as the data on size and distribution of holdings, refer to the situation around 1938-1939 or earlier. Substantial political and economic changes have occurred in some of the areas here considered, but it is still impossible to record those changes accurately.

ESTONIA

1. The varieties of land ownership and tenure in Estonia have been greatly influenced by the changes accompanying political freedom from the Russian Empire and economic freedom from the Baltic German landlords. Medium-sized independent family holdings predominated.² Feudal tenures were entirely abolished by the agrarian reforms, but several types of tenancy prevailed in the interwar period. Although short-term cash rentals were the most frequent of these, there were some hereditary leases from the state, and a few share tenants. In view of the predominance of family farms, the number of units large enough to require hired laborers was small.

Communal ownership in pastures and woodlands prevailed. Communal ownership of all productive land occurred in a few instances, following the Russian *mir* pattern. Undivided inheritance with cash payments to remaining heirs was practiced in the richer areas, but division in kind continued in the eastern part of the country. The law forbade subdivision of holdings containing less than 3.3 hectares of arable land. Further limitations on alienability arose from mortgages, many of them representing

² See Estonian Institute of Economic Research, "Analysing the Estonian Agricultural Census, 1939: Farm Holdings in Estonia; Farm Tenure," *Konjunktuur*, 64/65:103-139, April 30, 1940; (Estonian Minister of Agriculture), "The Agrarian Reform in Estonia from 1919 to 1930," *International Review of Agriculture*, 23:119E-135E, 155E-168E, 249E-262E, May, June, and August, 1932; Albert Puljerits, ed., *Estonia: Population, Cultural and Economic Life* (Tallinn: 1937), pp. 65-66. See also International Institute of Agriculture, *The Land Tenure Systems in Europe*, League of Nations, European Conference on Rural Life, 1939, Publication No. 4 (Geneva: 1939), pp. 46-51. (Hereafter cited as ECRL No. 4.)

long-term indebtedness to the state for lands distributed by the agrarian reform.

2. Before gaining independence in 1918, Estonia's economic life was largely dominated by the Baltic Germans. The German landlords and commercial enterprisers served the general political aims of the Russian Empire, in return for a relatively free hand in the operation of their own feudal estates. Although the freeing of the serfs had occurred in 1860, and thereafter the official property relationship was one of tenancy, many elements of feudalism remained. The rents of tenants were customarily in goods and services, which were closely analogous to feudal servitudes. Peasants were allowed to buy land, if they could afford the high prices asked, but even in case of "sale" the landlord retained hunting, fishing, milling, and similar rights. Large properties predominated, with some independent peasant farms in the poorer areas.

The agrarian reform following the successful revolt for independence in 1918 introduced radical changes in land distribution. Although large estates were nominally expropriated with compensation to the former landlords, the exceptions—lands belonging to traitors, to the Russian government, or left without owners—were probably more numerous than those covered by the rule. Of the estates held by the nobility, some were accordingly expropriated completely except for communal pastures and woodlots. Other landlords were allowed to keep a residual estate; in these cases livestock and equipment were not expropriated. Churches and other religious organizations were allowed to keep only those lands used for definitely religious purposes.³

In view of the nationalistic as well as economic motives prompting land reform, it is not surprising that first consideration in the distribution of expropriated lands was given to military "heroes" and disabled veterans. Of these favored persons, those who had been previously landless agricultural tenants or workers were cared for first. Any remaining lands available for settlement were distributed to those who had formerly worked the land, or to increase the holdings of those with very small plots.

Lands were distributed by the state in several ways: hereditary lease, temporary lease, and sale on a long-term mortgage. Loans with low interest rates were made for farm equipment and livestock. Newly settled lands were distributed as consolidated, single-family farms. Where lands were simply added to existing holdings, the village pattern was retained.

Although the Estonian land reform is usually classified as radical and precipitous, several features of the program offset any possible disadvantages from such a fundamental change.⁴ For the most part, the "divi-

³ See especially Estonian Minister of Agriculture, *loc. cit.*

⁴ The radical character of the reforms, and the fact that they were undertaken very rapidly, have led some writers to the erroneous conclusion that their effects upon agricultural production and economic organization were necessarily unfavorable. See, for example, Hans Jurgen-Seraphim, "La production agricole à l'est et au sud-est de l'Europe," *Revue économique internationale*, 26:457-475, December, 1934. For a much more accurate analysis of the relevant factors, see Karl

sion" of estates was a question of transfer of property rights, and not a question of breaking up effective economic units. The previously developed tenancy system had already established medium-sized holdings to a large extent. Moreover, the reform brought into more effective use areas of land previously held by the Russian government or religious organizations and farmed extensively, if at all. The new properties established on these and similar lands were not minute plots, but substantial family farms averaging some 18 hectares in extent.⁵ The whole tendency of the reforms favored medium-sized holdings with a minimum of tenancy and hired labor.

3. Agrarian reform usually works to the temporary and possibly permanent disadvantage of hired agricultural laborers. The hardship is occasioned by the breaking up of large estates, which naturally provide most of the employment, without a commensurate allocation of land to former employees.⁶ Estonian land reform provided no exception to this tendency. As a result of breaking up the bulk of the large estates, workers might (a) seek an independent holding, (b) attempt to secure employment on smaller farms, or (c) remain totally or partially unemployed until industrial or other steady employment could be secured. Actually, former tenants and owners of very small farms were favored in the land distribution. Those with medium-sized holdings attempted to get along with as little hired labor as possible. In any event, the change from employment on a large farm to that on a small farm is almost always a reduction in status and real income for the laborer. Moreover, in seeking employment in agriculture or industry the displaced laborer had to compete with small holders having insufficient land to support a family, as well as with members of artisan families seeking employment. However, the problem gradually became less acute, with the achievement of economic stability and subsequent expansion of employment opportunities.

Shepherds and other annual workers constituted a majority of hired laborers in Estonia, although a number of summer and casual workers were also hired. Wages might be paid partly in kind, so that some of the more permanent workers approached the position of "deputatists." The number of workers of various classes is shown in Table 1.

Some attempt was made in legislation to distinguish "grades" of labor according to the physical demands of the work. Thus, children 12-16 years of age and persons over 60 were classified as workers of the third grade, and had to be given light work.⁷

Ihrig, "Les résultats des reformes agraires d'après-guerre," *Journal de la société hongroise de statistique*, 12:405-466, 1934. The economics of agrarian reform is discussed in Chapter IV.

⁵ Ihrig, *loc. cit.*, p. 417. See also International Labour Office, "Statistics of Land Reform in Estonia," *International Labour Review*, 12:676-684, November, 1925; M. Martna, "Social Aspects of Land Reform in Esthonia," *International Labour Review*, 13:21-47, January, 1926.

⁶ See Adam Rose, "Agricultural Workers and the Agrarian Reform in Central Europe," *International Labour Review*, 18:307-338, September, 1938.

⁷ W. Martna, "The Position of Agricultural Labour in Esthonia," *International Labour Review*, 5:731-738, May, 1922.

TABLE 1

Number and Percentage Distribution of Farm Workers of Various Classes in Estonia, 1939¹

Classes of Workers	Number	Per Cent
Members of the Farmer's Family	432,512	87.4
Permanent workers	842,059	69.1
Temporary workers	90,458	18.3
Hired Laborers	62,619	12.6
Annual workers	21,486	4.3
Summer workers	22,778	4.6
Monthly workers	1,528	0.3
Shepherds	15,999	3.2
Managing and technical staff	833	0.2
Total	495,131	100.0

¹ Based upon data in Estonian Institute of Economic Research, "Analysing the Estonian Agricultural Census, 1939: The Farm Population," *Konjunktuur*, 64/65: 200-226, April 30, 1940.

Although the Estonian constitution secured both the right of association and the right to strike, the provisions of the Russian Penal Code were also adopted. Thus, the right to strike was limited in undertakings having "public utility," including agriculture. The effect of the rulings was to impose penalties for such offenses as incitement to strike, attendance at a meeting in support of a strike, and the like. Nevertheless, a small organization of agricultural workers—the Association of the Rural Working Population—was formed on trade union lines. In addition, the newly established small holders formed an organization, which operated also as a political party.²

4. The wages and hours legislation in Estonia was extended to agricultural workers, but administration of the provisions ran into the usual difficulties. The eight-hour day had to be regarded as more of a theoretical average than as an actual maximum, in view of the seasonal necessity of long hours in agriculture. Similarly, wage provisions had to be interpreted in view of food, lodging, and payments in kind comprising part of the farm worker's income. Children under 12 were not supposed to work (except, presumably, as unpaid family workers).

Estonian agricultural workers were given special consideration in legislation attempting to improve their housing. Accident compensation was made on the same basis as that provided for industrial workers. On the other hand, sickness and similar insurance provisions did not apply to

² International Labour Office, *The Representation and Organisation of Agricultural Workers*, Studies and Reports, Series K, No. 8 (Geneva: 1928), pp. 113-115.

farm workers. Unemployment ceased to be a serious problem after the initial readjustments forced by the agrarian reform, although seasonal and other "hidden" types of unemployment peculiar to agriculture continued throughout the interwar period.⁹

LATVIA

The property and labor systems of Latvia, like those of Estonia, underwent major transformations as a result of the nationalistic movement culminating in independence after the First World War.

1. Feudal tenures were extensive until the time of the land reforms following Latvian independence. The reforms transformed the predominant property system to one of independent ownership. Only 7.4 per cent of the total number of undertakings (12.0 per cent of the farm area) were farmed under cash rentals, and an additional 1.5 per cent of the holdings (2.6 per cent of the area) were held in share tenancy.¹⁰

Communal ownership still prevailed during the interwar period in the East (Latgale province), but in other areas the older village structure had given way to dispersed family farms. Strip farming in Latgale was gradually replaced by communal cultivation in large consolidated areas.

Although the ideal of the medium-sized holding was approximated in fact, there remained a substantial number of small holdings (some of them plots for part-time farming), and enough larger holdings to require hired labor in addition to the farmer's family.

Division in kind was the rule of inheritance in all provinces except Latgale, but the postwar laws set a legal maximum of 50 hectares per farm and forbade subdivision under 10 hectares. It is not apparent from available evidence whether the latter provision was carried out more completely than the former,¹¹ but the trend away from "land hunger" toward a labor shortage no doubt gave support to undivided inheritance. Aside from limitations on inheritance and maximum size, farms could be alienated and mortgaged.

2. As in Estonia, the prevailing land tenure system in Latvia before the agrarian reform was a type of modified feudalism. With the exception of Latgale province, which closely followed Russian developments, the Latvian rural economy was dominated by German "nobles." The "freeing" of the peasants was gradual throughout the last century. For the most part, freedom meant only the relaxation of direct personal domination by the feudal lord, but not a complete independence of land tenure. Although in the latter part of the century cash rentals were introduced, and lands

⁹ W. Martna, *loc. cit.*

¹⁰ International Institute of Agriculture, *The First World Agricultural Census (1950)* (Rome: 1939, 5 vols.), Vol. III, p. 244. (Hereafter cited as *World Agricultural Census*.)

¹¹ Although the legal maximum was established in 1920, the census of 1935 shows 1,071 undertakings exceeding 100 hectares. See League of Nations, *European Conference on Rural Life, Latvia* (in series, National Monographs drawn up by Governments), Publication No. 11 (Geneva: 1939), pp. 14-20.

were made available for sale if the peasants could afford to buy, the "free" peasants for the most part continued as tenants paying in labor and kind for use of the soil. Independent peasant properties did develop, but only by virtue of occasional cash purchases and not by virtue of land distributed to liberated serfs.¹²

Before the reforms, almost half (48.1 per cent) of the land area of Latvia was held by members of the nobility, estimates of the average size of these estates ranging from 1050 hectares to 2000 hectares. All private properties in excess of 100 hectares were expropriated, and frequently only the "irreducible" area of 50 hectares was left to the estate owners.¹³ The expropriated areas were added to state lands, lands taken over from public institutions run by the nobility, and church lands in excess of 50 hectares, and made available for redistribution. Servitudes of various sorts were abolished both for the expropriated lands and for the areas retained by private holders and various institutions.

The first concern of the Latvian reforms, unlike those in most other countries, was the allocation of land to governmental bodies and various public organizations, the enlargement of small holdings, and the regularization of boundaries. Holdings under 15 hectares could be enlarged to the maximum of 80 hectares (22 hectares agricultural land) allowed to new holdings, either by direct addition of adjacent state lands or by assignment of holdings to the state in return for a new settlement.

The remaining available lands were distributed to landless workers, with first preference to ex-servicemen in order of military merit, and second preference to those having the necessary agricultural equipment and capital. Lands granted by the reform required the payment of a moderate redemption price, which could be abated in the case of ex-servicemen. Loans were granted for buildings and equipment, and timber from the state forests was made available at a reduced price. Except for the limitation on subdivision previously noted, tenure and alienability were not restricted.

As in Estonia, the Latvian land reforms were "radical" from the point of view of areas affected, the treatment of large properties, the number of new holdings, and the number of new enterprises without capital. But likewise as in Estonia, the substantial areas granted and the policy with respect to capitalization eased the transition and contributed to a substantial increase in agricultural production.¹⁴

8. The inevitably unfavorable effects of agrarian reform on labor

¹² See European Conference on Rural Life, *Latvia*, pp. 14-20; F. W. v. Billow, "Social Aspects of Agrarian Reform in Latvia," *International Labour Review*, 20:85-66, July, 1929; (Latvian Ministry of Agriculture), "Agrarian Reform and the Recent Evolution of Latvian Agriculture," *International Review of Agriculture*, 80:22E-30E, January, 1939.

¹³ See references cited in previous note and International Institute of Agriculture, *Agricultural Problems in Their International Aspect*, Documentation for League of Nations, International Economic Conference, Geneva, May, 1927 (Geneva: 1926), pp. 860-862.

¹⁴ See Ihrig, *loc. cit.*

demand through the breaking up of large estates were not appreciably offset in Latvia by land distribution to landless workers, but were offset by the fairly substantial size of the post-reform holdings, by employment in gradually re-established industrial enterprises, some migration abroad, and subsequently by declining size of families. At least one source maintains that the demand for labor was actually greater after than before the reforms.¹⁵ In any event, it is certainly true that the demand relative to the supply was greater, since a shortage of agricultural laborers developed in the interwar period. Despite efforts of the Latvian government to halt the "rural exodus," and to encourage students and others to work seasonally in agriculture, it became necessary to bring in Polish and Lithuanian workers during periods of peak demand.¹⁶

Only 16.3 per cent of those occupied in agriculture in 1929 were hired laborers, and well over half of these laborers were in the two semi-permanent categories of "annual labor" and stockmen. The number and percentage of agricultural workers of various types are shown in Table 2.

TABLE 2

Number and Percentage Distribution of Farm Workers of Various Classes in Holdings of One Hectare and Over in Latvia, 1929¹

Classes of Workers	Number	Per Cent
Members of Holder's Family	785,483	83.7
Persons permanently occupied	749,816	79.8
Persons temporarily occupied	36,167	8.9
Wage Labor	153,030	16.3
Managing and technical staff	4,249	0.4
Annual labor	43,797	4.7
Seasonal labor	29,718	3.2
Stockmen	41,189	4.4
Monthly labor	12,160	1.3
Day labor	21,917	2.3
Total	938,513	100.0

¹ Based upon data in International Institute of Agriculture, *The First World Agricultural Census (1930)* (Rome: 1939, 5 vols.), Vol. III, p. 257.

The annual laborers comprised both farm servants and "deputatists." Aside from the latter group, wages were paid mostly in cash, and owing to the farm labor shortage the wages paid to farm workers occasionally exceeded industrial wages. The high wages, in fact, were due more to labor

¹⁵ European Conference on Rural Life, *Latvia*, p. 20.

¹⁶ Peteris Starcs, "The Shortage of Agricultural Labour in Latvia," *International Labour Review*, 40:768-778, December, 1940.

shortage than to any effective unionism. Collective contracts, however, were common.¹⁷

4. The Latvian farm workers were less protected by social legislation than were industrial workers—a circumstance usually prevailing in other countries. Seasonality of employment, long hours, and poor housing were the other chief disadvantages felt by agricultural workers, but all of these conditions were changed somewhat in the competition for workers.¹⁸

LITHUANIA

Both in its history and in its more recent economy, Lithuania is much more a part of the Eastern European development than are the two northern Baltic States. With the exception of Memel, an area over which its sovereignty was limited throughout the interwar period, Lithuanian territory was largely by-passed by the Teutonic Knights and their Baltic German successors. Lacking Scandinavian and German influence, its economic institutions are more nearly Slavic in origin and type.

1. Feudal tenures were abolished in Lithuania by the agrarian reforms and the abolition of the large estates, most of which had been controlled by Germans (around the Memel area), Poles, and Russians. The transformation of these estates into private holdings, and the breaking up of communal lands into consolidated holdings, produced a tenure system predominantly characterized by peasant ownership of small holdings.

Only 7.8 per cent of the holdings over one hectare (9.2 per cent of the area) were farmed by tenants, and a small additional number and area by hired bailiffs and other agents.¹⁹ Share tenancy was less common than cash rentals.

As already noted, the village commune type of tenure, with allocation of strips of arable land and joint use of forests and pastures, was largely abolished in favor of isolated consolidated holdings. Even forest and pasture land was partly divided, but some was still controlled by villages or, in the case of forests, by the state.

Equal inheritance prevailed, but division in kind might be avoided by cash settlements or even by joint control. Holdings were in general smaller than in Estonia and Latvia, with a substantial proportion of the total number (18.6 per cent) of the holdings over one hectare falling under five hectares of area.²⁰ For the most part these did not represent plots for part-time farming, but were the sole means of livelihood of the cultivators.

2. Before the agrarian reforms some 40 per cent of the total area of Lithuania was held in large estates of over 100 hectares, an additional 10 per cent by the state and clergy, and the remainder by peasants—either

¹⁷ See F. W. v. Bülow, *loc. cit.*; International Labour Office, *The Representation and Organisation of Agricultural Workers*, pp. 175-176.

¹⁸ F. W. v. Bülow, *loc. cit.*

¹⁹ *World Agricultural Census*, Vol. III, pp. 805-806.

²⁰ *Ibid.*, p. 804.

communally or individually.²¹ A large number of these were very small. Some 17 per cent of the rural population were landless.

Communal lands were expropriated only for the sake of forming independent holdings by members of the villages. The state expropriated areas of estates in excess of 150 hectares, and later in excess of 80 hectares, apparently without compensation. These lands, together with some areas already controlled by the state, were made available for distribution in small holdings.

In allocating areas available for farms, landless persons were given preference over small holders. Among the former group, ex-servicemen who had fought for Lithuanian independence were first considered. Any additional lands available could be assigned to those having very small holdings. Tenure on lands affected by the reform was designed to be freehold, although the state leased lands not yet assigned in the process of carrying through the redistribution. It was subsequently decided (1934) that those who had benefited from the land distribution should pay a purchase price to the state on a long-term basis.

The great difficulty of the agrarian reform in Lithuania, as compared with Estonia and Latvia, was that in the former country the lands available for distribution were far short of the amount necessary to satisfy the legally allowable demand. Without extensive development of other means of livelihood, and with a rapidly growing rural population, it was impossible to avoid division of the agricultural land into fairly small holdings, leaving landless workers with very little local demand for their labor.

3 and 4. The agrarian reforms improved the position of part of the landless workers and small holders, but even a more extensive "leveling" would scarcely have provided family holdings for all of those dependent on agriculture. Seasonal migration of landless workers to Latvia and Germany provided some additional employment. As shown by the accompanying table (Table 3), some 15 per cent of the population occupied in agriculture were employed persons.

TABLE 3

Number and Percentage Distribution of Farm Workers of Various Classes in Holdings of One Hectare and Over in Lithuania, 1930¹

Classes of Workers	Number	Per Cent
Members of Holder's Family	837,519	84.5
Employed Persons	153,764	15.5
Total	991,283	100.0

¹ Based upon data in International Institute of Agriculture, *The First World Agricultural Census (1930)* (Rome: 1939, 5 vols.), Vol. III, p. 815.

²¹ ECRL, No. 4, pp. 46-51; International Institute of Agriculture, *Agricultural Problems in Their International Aspect*, p. 363.

Lithuanian agricultural workers, comprising the bulk of the wage-earning population, formed a small organization on trade-union lines, and admitted small holders who employed no outside labor. Its influence on working conditions and labor relations was apparently negligible.²²

POLAND

The property situation in Poland reflects the troubled political history of the area, and especially the different institutions of the neighboring powers that ruled the several sections of the country until the First World War.

1. Modified feudal tenures were still in existence in Poland after the First World War, and indeed various servitudes were only gradually abolished in the East as a result of the agrarian reforms. Tenancy was not widely developed, since large estates were generally farmed by various classes of hired laborers. In 1921 only 2.7 per cent of all holdings were farmed exclusively by tenants, although the percentage rose to 15.8 per cent of those holdings over 100 hectares, and an additional 7.3 per cent of the holdings were made up of partly owned, partly leased land.²³ Comparable evidence of more recent date is not available, but since the agrarian reform was very little concerned with the transformation of tenancies into freehold property, it is reasonable to assume that the importance of tenancy had neither increased nor diminished in marked degree by the end of the interwar period.

The large estates, particularly in Western Poland, depended upon hired laborers, both temporary and permanent. As in East Prussia, the "deputat" system of agricultural employment was highly developed, so that substantial areas of farm land were actually farmed neither by owners nor by tenants, but by workers in lieu of wages.

Communal ownership still prevailed in the formerly Russian areas of Poland, but the agrarian reforms attempted consolidation of the annually apportioned strips in this area, and the division of part of the forest and pasture areas.

For the most part, inheritance was undivided in the West, with cash settlements to other heirs. In the South, and to a lesser extent in the East, the already minute holdings were further subdivided among heirs. Owing both to this mode of inheritance and, particularly in the East, to communally controlled strip farming, Poland has provided one of the extreme cases in Europe of parcellation and dispersion of small plots.

Lands acquired by virtue of the agrarian reform were inalienable, indivisible, and not to be mortgaged until long-time loans had been repaid.

2. In sharp contrast to the agrarian reforms in the Baltic States, the initial and radical reforms proposed in Poland had no effect, and definite

²² International Labour Office, *The Representation and Organisation of Agricultural Workers*, pp. 178-179.

²³ International Institute of Agriculture, *Agricultural Problems in Their International Aspect*, p. 870.

modification of land tenure only got under way after 1925. The reforms then established and thenceforth carried out contemplated a very long-range and semi-voluntary redistribution of land rights, to be accompanied by land reclamation, consolidation of holdings, and abolition of servitudes. The law established a maximum size of holdings by individuals and corporations ranging from 60 to 300 hectares. Areas in excess of that were to be transferred by private arrangement to landless persons, who could borrow money for the purchase from the state or the State Agrarian Bank. Some 200,000 hectares per year were to be listed for compulsory division, or voluntary division within a year. In practice, the areas so divided fell considerably short of 200,000 hectares in some years,²⁴ but only rarely was resort had to expropriation. Compensation was paid to estate owners, partly in cash and partly in state land bonds.

Lands were to be distributed to landless workers and to holders of very small plots. Smaller amounts were made available as building lots for workers and artisans.²⁵

The agrarian reforms in Poland did not abolish the large estate, nor solve the problem of extreme subdivision of holdings. On the other hand, the reforms pushed both of these characteristics toward independent peasant proprietorships. Moreover, the proportion of the total agricultural land held in large units was not so large as the proportion of the total area, since forests comprised a large part of the area controlled by the big estates.

3. Poland has been one of the outstanding examples in Eastern Europe of an agrarian economy unable to provide employment for many persons whose livelihood depends on agriculture. The parcellation of large estates among agricultural workers had no appreciable effect on the over-all character of employment opportunities. On the other hand, the problems of agricultural unemployment were not aggravated by a sudden abolition of the estates employing workers.

The types of farm labor, methods of payment, and considerations of labor relations and relative status all show remarkable heterogeneity in Poland. This is due not only to the divergent institutional developments in the several sections of the country as they were molded along German, Austrian, or Russian lines, but also to the unequal economic organization and opportunities for employment. Despite this diversity, one type of labor arrangement was surprisingly common: that of the deputat worker. In both the formerly Russian and the formerly German sections the large estates depended primarily upon these fairly permanent workers for the bulk of their year-round labor supply. They usually received a small cash wage, but the larger amount of their income was derived from the dwelling furnished by the employer, a plot of land (usually for potatoes in the east), pasture for one or two cows, and allotments of cereals or possibly other

²⁴ See Poland, Chief Bureau of Statistics, *Concise Statistical Year-Book of Poland, 1938* (Warsaw: 1938), p. 65.

²⁵ ECRL, No. 4, pp. 54-55.

foodstuffs. This general pattern was subject to many modifications, depending upon particular regions, size of estates, and so on. The situation in the former Russian areas has been summarized as follows:

On the small farms only unmarried workers are engaged, who are lodged and boarded by the farmer and who receive, in addition, some wages in kind. This group exists also on the large estates, but is not very important. . . . It is stated that this class is disappearing, because the employers prefer married workers who have their own household and who are mostly paid in kind. This class, the "deputatists," forms the most important group of agricultural workers. They receive, as part of their wages in kind, a dwelling (sometimes in a block-building), a plot of land for potatoes, and the right of keeping one or two cows. They are engaged per year. The members of their family [*sic*] working on the estates are paid per day.

Another group are the "kormorniks," who receive a dwelling, half as much potato land, and half the amount of other wages in kind received by the "deputatists"; on the other hand, they receive a higher cash wage.

The day-labourers proper, sometimes called "free workers," are mostly smallholders, whose families are not able to live from the produce of their holding. They are mostly employed in forestry work and for harvest work. Besides this type of cheap labor there is a group of seasonal workers engaged from April to October. These workers are lodged by the employer, often in block-buildings, but not boarded by him; they receive part of their wages in kind. They are mostly migratory workers, coming from the mountainous parts of the country.

The wages and allowances of all groups are covered by collective agreements.²⁶

Since the independent proprietors of very small holdings had to seek wage labor to supplement the income from their cultivation, their position was very close to that of the deputatists. This similarity was especially marked when the small holders entered into contracts for annual employment, less sufficient time for cultivation of their own plots. Their independence owing to property rights in a small plot of ground was scarcely greater than that of the deputatist, and their security might be smaller.²⁷

The following table, although inadequate in detail, indicates something of the number of workers who lived on the employers' farms and those who had small holdings but worked for wages in addition.

Although the source quoted above indicated that all farm labor in Poland was governed by collective agreements, this was only nominally true. These agreements applied most directly to employers and employees on

²⁶ International Labour Office, *The Representation and Organisation of Agricultural Workers*, pp. 189-190.

²⁷ See *ibid.*, pp. 188-189; Z. Ludkiewicz, "Land Reform in Poland," *The Slavonic Review*, 8:315-330, December, 1929; Waclaw Ponikowski, "Polish Agricultural Land Organization Since the World War," *Annals of the American Academy of Political and Social Science*, 150:288-293, July, 1930.

TABLE 4

Number and Percentage Distribution of Farm Workers of Various Classes in Poland, 1931¹

Classes of Workers	Number (in thousands)	Per Cent
Owners and Their Families	7,900.8 ^a	85.2
Wage and Salary Earners ^b	1,367.7	14.8
Craftsmen	20.5	0.2
Laborers housed by employer	358.2	3.9
Laborers housed with employer	382.1	4.1
Laborers housed in own home	245.7	2.7
Laborers, type of work unknown	346.7	3.7
Salaried workers	14.5	0.2
Total	9,268.5	100.0

^a This represents 47.9 per cent of the total (active and passive) independent agricultural population, given in the *Year-Book*, p. 30. The ratio was established on the basis of ratios between active and total populations for agricultural employees (pp. 238 and 30, respectively).

^b Includes only those domiciled in rural areas.

¹ Based upon data in Poland, Chief Bureau of Statistics, *Concise Statistical Year-Book of Poland, 1938* (Warsaw: 1938), pp. 30 and 238.

large estates; how extensively they were applied to other workers in the appropriate regions covered by the agreements depended partly on the effectiveness of organization among other workers.²⁸

The policy of determining labor relations and conditions of employment by collective agreement dates almost from the time of Polish independence following the First World War. The initial agreements were fostered by government officials in view of extensive labor disputes, and subsequently were further generalized and supported by legislation.²⁹

4. Social insurance provisions for agricultural workers were compulsory only in the western provinces, formerly under German rule. In those areas health and accident insurance, provisions for invalids, and old age pensions were in force.³⁰ On the other hand, the collective agreements were in force in all areas of the country and thereby extended various security provisions into areas not affected by formal legislation.

The Polish collective agreements were usually drawn up for various classes of workers separately. Casual workers were generally not covered. Hours of work were specified in great detail (although not generally enforced in the same detail). The housing of deputat workers was also speci-

²⁸ See International Labour Office, *Collective Agreements in Agriculture*, Studies and Reports, Series K, No. 11 (Geneva: 1933), pp. 51-54.

²⁹ *Ibid.*

³⁰ See Ponikowski, *loc. cit.*

fied, as were sickness and death benefits, accident compensation, and the like.³¹

The Polish workers certainly had greater security and economic stability by virtue of the collective agreements than they would have had without such protection. On the other hand, the position of the laborers was under constant threat in view of the large number of landless workers and holders of minute plots seeking employment in agriculture. So long as considerable portions of their number remained unemployed the Polish farm workers had little hope of greatly improving their relative bargaining power in dealing with estate owners.

CZECHOSLOVAKIA

Like other succession states formerly divided between two or more ruling governments, Czechoslovakia exhibits divergent institutional developments in different regions. Although other internal distinctions are present, the two major divisions in Czechoslovakia are the Czech regions (Bohemia, Moravia, and Silesia) formerly under Austrian rule, and the eastern provinces (Slovakia and Sub-Carpathian Russia) under Hungarian rule. Although the Austro-Hungarian dual monarchy formed a united state for some purposes, the internal institutional structures of Austria and Hungary differed considerably.

1. The land tenure systems in the east and west of Czechoslovakia during the interwar period reflected not only the divergent legislative influences of the Hungarian and Austrian governments, but also the unequal economic development of the several regions. Thus the eastern provinces were largely unaffected by Western European industrial and commercial developments, and represented a breakdown of feudalism along almost purely agrarian lines. Former serfs became for the most part share tenants or small holders. Indeed, the share tenants, particularly in Slovakia, were before Czechoslovak independence scarcely distinguishable from feudal serfs, except with regard to personal liberty. In the Czech regions the vestiges of feudalism took a somewhat different form: vast latifundias, entailed in hereditary usufruct (*fideicomis*), with ultimate title theoretically retained by the Hapsburg dynasty. The local management of these estates, however, was more capitalistic in type, with cash or other fixed rentals of part of the area, and farming with hired labor (including deputists) for those portions of the estates not leased.

Although the agrarian reforms following Czechoslovak independence reduced the number and extent of large estates, and established some former tenants and laborers as independent owners, some fairly large estates remained both in the Czech provinces and in Slovakia. More than 90 per cent of the agricultural and forest area was owned by the holders, various types of tenancy accounting for most of the remainder. (About 1

³¹ International Labour Office, *Collective Agreements in Agriculture*, pp. 77-97, *passim*.

per cent of the area was held by deputatists, church officials with prebendary allotments, and under other modes of tenure.)³²

Communal lands, especially forests and pastures in the eastern regions, were not abolished by the agrarian reforms. On the contrary, some lands were given to communes and to cooperative societies for joint cultivation.³³

Although the entailment of the large estates in the Czech regions was abolished in 1924, the agrarian reforms set up a new category of "family properties" of from 6 to 15 hectares which were entailed and non-mortgageable. None of the lands distributed as a result of the reforms could be divided or alienated without official approval. These provisions introduced very little novelty into the principles of succession in the Czech provinces, where undivided inheritance has prevailed (by law in Bohemia, and by custom in Silesia and most of Moravia). They were, however, in contrast to the normal division of property among heirs practiced in parts of Moravia, and in Slovakia and Sub-Carpathian Russia. Mortmain estates held by the church, especially in Slovakia, fell under the same provisions for maximum size as those applied to private domains. Some such estates of reduced size remained and were farmed for the benefit of clergymen or the support of the church.

2. As already indicated, the property distribution in the regions that constituted the territory of Czechoslovakia in the interwar period was marked by estates of tremendous size and very small peasant holdings. In the Czech provinces 37 per cent of the area of rural landed property was held in estates exceeding 100 hectares (27.71 per cent of the total in domains exceeding 2,000 hectares). In Slovakia almost exactly half (49.9 per cent) of the farm area was held in units exceeding 200 arpents (approximately 116 hectares) and 36.2 per cent in units exceeding 1,000 arpents (580 hectares). For Ruthenia the respective percentages were 41.6 and 33.1.³⁴ It should be especially noted that the percentages given refer to actual holdings, regardless of ownership, in the formerly Hungarian areas, whereas the percentages for Bohemia, Moravia, and Silesia refer to properties. In the latter case, many of the large estates actually were not farmed as such, but rather substantial portions were farmed under some form of tenancy. It should also be noted that the distribution of actual agricultural land was not so unequal as the foregoing figures

³² *World Agricultural Census*, Vol. II, p. 167.

³³ For details concerning modes of property and tenure, especially as affected by the agrarian reforms, see H. Böker and F. W. von Bülow, *The Rural Exodus in Czechoslovakia*, International Labour Office, Studies and Reports, Series K, No. 18 (Geneva: 1935), pp. 38-67; Vladislav Brdlík, "Les conditions de production, l'organisation et les résultats de l'entreprise agricole," in Vladislav Brdlík, ed., *Agriculture*, Encyclopédie Tchecoslovaque (Paris: Editions Bossard; Prague: Editions Orbis, 1928), pp. 1-91, especially pp. 17-21; Charles Viškovský and Antoine Pavel, "La réforme foncière," in *ibid.*, pp. 815-846; Antonín Pavel, "Public Guidance in Land Utilization in Czechoslovakia," *Annals of the American Academy of Political and Social Science*, 150:262-272, July, 1930. See also ECRL, No. 4, pp. 52-64.

³⁴ International Institute of Agriculture, *Agricultural Problems in Their International Aspect*, pp. 385-387.

would seem to imply, since forest lands represented a substantial proportion of the area of the largest estates.

The agrarian reforms, initiated in 1919 and supplemented in the early 1920's, aimed at the seizure of large estates and their redistribution to laborers, tenants, and small holders.⁸⁵ Areas in excess of 150 hectares of agricultural land and a total area of 250 hectares were subject to seizure. In some cases the latter amount could be increased to 500 hectares. The "residual estates" were retained by their owners in most cases, although in some cases of large estates held as feudal grants from the Hapsburgs by foreigners, the residual estates were also made available to other individuals, or for cooperative enterprises. Compensation was paid for all lands seized, according to prewar market prices in the case of estates over 100 hectares, and according to the "cadastral yield" for smaller properties taken over for one reason or another. Although the compensation paid was likely less than the current values of the lands, it is claimed that an imposition of a land tax on formerly tax-free entailed estates would have caused even greater loss.⁸⁶

Not all of the seized lands were redistributed, since much of the area comprised timber lands, part of which was retained by the state. Other lands were distributed for building lots, cooperative ventures, for communal use, and so on. Approximately half of the total lands distributed went to small holders—including former tenants, landless workers, and those with very small holdings. The land available for distribution being less than the claims, preference was given to veterans of the various Czech units fighting with the Allied armies.

The Czechoslovak land reforms were radical neither in their treatment of large holdings nor in the rapidity with which they were carried out. On the other hand, they did succeed in placing the center of gravity in agricultural organization in the small and medium-sized holdings.⁸⁷

The land reform legislation contemplated consolidation of holdings as part of the general program of rehabilitating the peasant farm, but this aspect of the program did not meet with marked success in view of the persistence in the eastern areas of inheritance by subdivision and the lack of other employment opportunities for workers who might have been displaced by a more rational size and use of cultivated land.

8. The Czechoslovak land reform was exceptional in its provisions for displaced employees upon the seizure or breaking up of estates. The law required the Land Office to provide for those employees who had worked on the estates for two years or more and who were Czech nationals 18 years of age and over. The provision might be allocation of land, continued

⁸⁵ In addition to the references cited in note 83, above, see Lucy Elizabeth Texor, *Land Reform in Czechoslovakia* (London: George Allen and Unwin, 1923).

⁸⁶ ECRL, No. 4, p. 53.

⁸⁷ In 1930, throughout the country, only 18.8 per cent of the strictly agricultural area was held in units exceeding 100 hectares in size. (See *World Agricultural Census*, Vol. II, p. 165.) Although direct evidence is not available, it does not appear that the proportion of the agricultural area *owned* in large units would be much larger.

employment, retirement or disability pensions, or cash settlements. Since only slightly more than one-fourth of the eligible employees were given land allotments, and an additional one-fifth retained employment, pensions or cash settlements had to be provided for the majority of the workers.³⁸

In the industrialized sections of the west, where the largest latifundias also were located, displaced agricultural workers could ordinarily find industrial employment after a shorter or longer period of unemployment. In the eastern provinces the transition was somewhat more difficult, and ordinarily required migration to the Czech provinces. Actually, there were opportunities in the Czech provinces for both industrial and agricultural employment, since the lower wage scales in agriculture coupled with less comprehensive social protection and poorer living conditions contributed to a shortage of agricultural workers in the region.³⁹

The agricultural labor force not only was composed of permanent landless workers, but to a marked degree comprised small holders whose plots were too small to support a family. These small holders sought employment not only on other farms but also as rural craftsmen and artisans.⁴⁰ For the most part the workers employed on the smaller farms were farm servants engaged by the year. The larger holders hired deputatists and day laborers as well as a technical staff. Table 5 indicates the percentage distribution of various workers in agriculture.

Labor relations in Czechoslovak agriculture were governed not only by local collective agreements, but more importantly by the "guiding principles" established by central federations and the public authorities. Agricultural workers as well as small holders and employers were highly organized in Czechoslovakia. The organizations were partly along trade union lines, and partly constituted politico-economic groups. Although there was no legal compulsion upon either employers or employees to accept the guiding principles, their acceptance by regional federations assured fairly wide local application.⁴¹

4. The legislation governing the position and protection of agricultural labor in Czechoslovakia was a rather heterogeneous mixture of former Austrian and Hungarian legislation and modern Czechoslovak enactments. The legal eight-hour day applied to agriculture, with the necessary exceptions for some types of seasonal work. Social insurance for agricultural workers had less coverage in the Czech provinces than in Slovakia and Sub-Carpathian Russia. In the former provinces, for example, accident compensation applied only if the accidents occurred in the use of machinery. Likewise sickness insurance was less extensive under Austrian

³⁸ Böker and Bülow, *op. cit.*, p. 63; International Labour Office, "Social Aspects of Land Reform in Czechoslovakia," *International Labour Review*, 12:46-64, 225-244, July and August, 1925.

³⁹ See International Labour Office, "An Enquiry into Conditions of Work and Wages of Agricultural Workers in Czechoslovakia," *International Labour Review*, 21:855-867, June, 1930.

⁴⁰ See International Labour Office, *The Representation and Organisation of Agricultural Workers*, p. 103.

⁴¹ International Labour Office, *Collective Agreements in Agriculture*, pp. 29-31.

TABLE 5

Number and Percentage Distribution of Farm Workers of Various Classes in Czechoslovakia, 1930¹

Classes of Workers	Number	Per Cent
Owners, etc.	3,330,768	85.4
Owners, co-proprietors and tenants	1,505,682	38.6
Members of holders' families	1,825,086	46.8
Wage Labor	566,789	14.6
Having agricultural instruction	8,330	0.2
Overseers, stewards, etc.	25,662	0.7
Farm servants boarded	229,597	5.9
Deputat laborers	67,412	1.7
Other contractual labor	86,521	2.2
Craftsmen	3,888	0.1
Permanent day laborers	57,347	1.5
Seasonal laborers	88,032	2.3
Total	3,897,557	100.0

¹ Based upon data from International Institute of Agriculture, *The First World Agricultural Census (1930)* (Rome: 1939, 5 vols.), Vol. II, p. 179.

legislation than under Hungarian.⁴² However, certain classes of agricultural workers were given more extensive insurance coverage, either of an obligatory sort in conformity with special legislation or through membership in various associations. These insurance provisions included pensions and unemployment insurance. Moreover, a fluid labor market was facilitated by provincial employment bureaus.

The housing for deputat workers was governed by the "guiding principles" in Czechoslovakia. In general, the housing conditions on small farms were considerably less satisfactory than on the larger estates.

The problem of employment for landless workers was considerably more acute in the eastern provinces than in the western, and was partially offset by the possibility of internal migration from the agricultural to the industrial regions.

HUNGARY

Of the larger Eastern European states, only Hungary remained relatively unaffected by agrarian reforms in the interwar period. The traces of feudalism remained quite apparent, and the economic and political dominance of the agrarian landlord was scarcely challenged after the few years of instability following the First World War. The loss of extended territories formerly ruled by the Hungarian half of the Austro-Hungarian dual monarchy tended to accentuate the concentration of land in large

⁴² The situation with respect to legislation and labor conditions in Czechoslovakia is summarized in International Labour Office, *Collective Agreements in Agriculture*, pp. 64-108; Böker and Bülow, *op. cit.*, pp. 120-141; François Kubec, "L'agriculture et les pouvoirs publics," in Brdlik, *op. cit.*, pp. 707-725.

estates, since many of the areas incorporated into the succession states were already characterized by fairly extensive peasant proprietorship.

1. Land distribution in Hungary was characterized by a relatively small number of very large estates and a large number of extremely small plots. The independent owner of a family-size farm, or the holder of a medium-size area requiring perhaps one or two additional workers was a rarity in Hungarian agricultural organization. It was in the exploitation of the very large concentrations of landholdings that the Hungarian pattern of post-feudal developments was most marked.

Somewhat less than four-tenths of one per cent (.004) of the total number of land owners in Hungary owned 43 per cent of the total land area.⁴³ These were the owners of estates ranging in size from 200 arpents (approximately 115 hectares) to over 100,000 arpents (over 57,500 hectares). Part of these estates were held by corporations, communes, and churches. A considerable part of the area, whether "privately" or "publicly" owned, was farmed by tenants of one type or another.

Part of the area of one of the larger property holdings was usually managed by the owner, mainly through hired labor (including deputatists). Other properties might be leased entire as a large holding, and managed by the lessee in much the same way as the owner managed the estate upon which he lived. Thus, cash rentals were chiefly confined to large-scale tenants of high economic position, and the much less important share tenancies provided part of the labor necessary for farming large holdings. Only 8.9 per cent of the total number of farm properties were leased wholly or in part, but this figure rises to 52.2 per cent in the case of "large" properties over 1,000 arpents. Of the total farm area, 17.4 per cent was leased (24.5 per cent of the large properties). A larger proportion of the total arable area (22.2 per cent) was under tenancy, and in the case of large estates the proportion was 44.7 per cent.⁴⁴

Personal dependency relations accentuated the marked hiatus in status between agricultural workers (domestic servants, deputatists, annual employees, seasonal employees) and share tenants on the one hand and land-owners or entrepreneurial renters on the other.

Communal ownership of village pasture and woodlands, and even of crop land, prevailed to some extent, especially in the north. Small properties were generally alienable and divided in kind among heirs. Many of the larger estates were entailed, held in mortmain as church lands, or by corporations. Although only slightly more than one per cent (1.19) of all properties were under entail or similar restrictions on alienability (27.1 per cent of the total area), 84.1 per cent of the number and 59.8 per cent of the area of the large estates were so restricted.⁴⁵

⁴³ Michael Kerék, "Agricultural Land Reform in Hungary," *Hungarian Quarterly*, 6:471-480, Autumn, 1940, p. 472.

⁴⁴ Jules de Konkoly Thege, "L'extension et l'importance des baux ruraux dans la Hongrie de Trianon," *Journal de la société hongroise de statistique*, 18:149-164, 1940.

⁴⁵ Computed from data in *ibid.*

The division of holdings not under entail accordingly most seriously affected those properties which were already small. In some areas, particularly in the north, the subdivision of property, added to the traditional village structure with surrounding "checker-board" plots, resulted in extensive parcellation and dispersion of small holdings. In other regions, particularly on the Great Plain, the separate family farm or estate was more common, although even here the development of the extensive "agricultural cities" in which property owners lived for part of the year modified the pattern somewhat.

2. Agrarian reforms of an extensive character were contemplated by the first postwar government of Hungary, but the counter-revolution successfully maintained the dominance of the land-owning nobility. In response to the continued clamor for land on the part of large numbers of landless (and frequently unemployed) farm laborers, however, a redistribution of land of very minor proportions was undertaken. The reform legislation envisaged purchases of land by the state and re-sale to those deserving land. In some cases expropriation was provided for. In practice very little land was directly expropriated, and that chiefly estates owned by foreigners living abroad. Land taxes contributed to the parcellation of some estates, although it should be noted that this had little effect on the largest estates, which for the most part are under entail and relatively tax-free.⁴⁶

The land affected by the reform was to be distributed to disabled war veterans, widows of veterans, and farm workers. Additional lands could be granted to increase the size of small holdings, to provide building and garden plots for landless artisans, to public officials, to communes and farming societies, and to institutions. Actually, the lands distributed were almost exclusively small building plots, and small agricultural plots for landless agricultural workers. The total area of land so distributed was very small. Only about 604,000 hectares of land were given to some 686,000 new proprietors;⁴⁷ the area amounted to about 6.5 per cent of the total area of the country. When it is recalled that a substantial part of this

⁴⁶ For details concerning the reform legislation and its effects, see M. Arnold Dániel, "Land Reform in Hungary," *The Advancement of Science*, 6:149-150, July, 1942; Karl Ihrig, "Agrarian Reform in Hungary," *International Review of Agriculture*, 22:341E-354E, 869E-882E, November and December, 1931; International Institute of Agriculture, *Agricultural Problems in Their International Aspect*, pp. 355-358; Kerék, *loc. cit.*; A. Körmendy-Ekes, "Big Estates in Hungary," *Hungarian Quarterly*, 3:43-58, Spring, 1937; League of Nations, European Conference on Rural Life, *Hungary* (in series, National Monographs drawn up by Governments), Publication No. 27 (Geneva: 1939), pp. 51-54. The interpretations of the effects of the agrarian reforms in the last of the foregoing references must be viewed with considerable reservation. An even more questionable discussion is that of Iván Edgar Nagy, "Agriculture and the Agricultural Economic Policy of Hungary," in O. S. Morgan, ed., *Agricultural Systems of Middle Europe* (New York: The Macmillan Co., 1933), Chap. V.

⁴⁷ An additional 90,000 hectares were distributed as small tenancies, presumably to agricultural laborers. Computed from data in Hungary, Office Central Royal Hongrois de Statistique, *Annuaire Statistique Hongrois*, 1931 (Budapest: 1933), pp. 74-75.

division did not affect agricultural land at all, the minor character of the reform becomes evident.

3. Hungarian agricultural organization departs sharply from the Eastern European pattern common in the interwar period of small peasant proprietorship. The Hungarian land was worked for the most part by landless workers and by small holders who had plots too small to support a family, and who therefore had to seek employment on the large estates. This pattern was not appreciably altered by the agrarian reforms.

The development of agriculture in the direction of large-scale enterprises naturally resulted in a greater division of labor in Hungary than was common in Eastern Europe. Estates normally employed technically trained managers, field supervisors, personal servants, farm servants, harvesting gangs under collective agreement, and various types of day laborers. The latter two groups might be mainly composed of holders of minute plots of land, although landless migratory workers were also included. As shown in Table 6, almost 40 per cent of those actively en-

TABLE 6

Number and Percentage Distribution of Farm Workers of Various Classes in Hungary, 1930¹

Classes of Workers	Number	Per Cent
Holdings and Their Families	1,237,454	60.91
Independents	700,466	84.48
Members of the family	536,988	26.43
Employees and Auxiliaries	793,997	39.09
Functionaries and employees	5,611	0.28
Supervisors	868	0.04
Clerks, workers, day laborers	565,055	27.82
Apprentices	857	0.02
Other auxiliary persons	222,106	10.98
Total	2,031,451	100.00

¹ Based upon data from Hungary, Office Central Royal Hongrois de Statistique, *Annuaire Statistique Hongrois, 1938* (Budapest: 1940), p. 17.

gaged in agriculture were neither property holders nor members of their families.⁴⁸

Labor relations, and the conditions of labor over which disputes might

⁴⁸ The statistics unfortunately do not indicate how many of the agricultural employees may hold small plots of land. In any event, the economic and social position of such employees would not differ greatly (except possibly in the direction of less security) from that of the deputat workers who are given small plots of land as part of their remuneration. For somewhat comparable statistics for 1910 and 1920, see Louis G. Michael, *Agricultural Survey of Europe: Hungary*, United States Department of Agriculture, Technical Bulletin No. 160 (Washington: 1930), p. 11.

arise, were regulated in detail by legislation. The Hungarian state did not look with favor upon independent organization for collective action, except within the rather rigid framework prescribed by law. Yet the dependence of estate owners on agricultural laborers was so great, and so crucial at the time of the grain harvests, that considerable bargaining power remained with the farm workers. This bargaining was naturally enhanced during periods of industrial expansion when alternative opportunities for employment were present, and conversely diminished when opportunities for industrial and/or agricultural employment were falling off.

Deputat workers, in Hungary as elsewhere, were paid mainly in kind, including food, shelter, fodder for livestock, and an allotment of ground. The law required that the employer allot land of quality comparable to the average of the employer's land for the same crop. The employer furnished the work of horses sufficient to cultivate the land, tools, and cartage to the nearest mill for that part of the wage paid in grain. The grain paid as wages had to be of the same quality as the first-class crop intended for sale. Products that formed part of the payment in kind and that should by their nature be delivered daily, such as milk and fodder, had to be so delivered. Other payments, including any cash payments, were to be made promptly. For his part, the deputatist was required to cultivate his land satisfactorily, as well as perform other duties as required.⁴⁹

Farm servants, including deputatists, might in emergencies be required to do any type of work, but in ordinary circumstances only that work for which they were engaged. Servants were ordinarily under annual contract, although they might be engaged for as short a time as one month. The law specified in detail the circumstances under which either the employer or employee could terminate the contract, and the notice required under various circumstances. Farm servants had a service book, in which the employer was to enter the servant's employment record, without comment on qualifications, at the expiration of a contract.

Other laborers, including more or less permanent estate employees, could be paid mainly or entirely in kind. This even applied to harvest workers under collective contract (part of the terms of which were not subject to bargaining, but were specified by law). In periods of rising prices, the employer might prefer to pay his workers in cash; in periods of falling prices, payments in kind might constitute the total payment, the workers thereby constituting part of the consumers.⁵⁰

4. The legislation regulating the conditions of farm labor mainly

⁴⁹ This summary is chiefly based on International Labour Office, *The Law on the Contract of Employment of Agricultural Workers in Austria, Germany and Hungary*, Studies and Reports, Series K, No. 10 (Geneva: 1930). See also International Labour Office, "The Agricultural Labour Situation in Hungary," *International Labour Review*, 25:678-678, May, 1932; International Labour Office, *The Representation and Organisation of Agricultural Workers*, pp. 151-157; Miklós Móricz, "Landless Agricultural Workers in Hungary," *International Labour Review*, 28:518-530, October, 1933.

⁵⁰ Móricz, *loc. cit.*, p. 527.

originated from periods before the First World War, some of the provisions dating from the nineteenth century. On the one hand, their effect—and indeed their intent—was to ensure a relatively permanent and tractable labor supply, with little opportunity for the workers materially to improve their economic or social position. On the other hand, the prevention of independent action upon the part of landless workers and small holders necessitated a modicum of protection and regulation of working conditions. Even this protection, however, emphasized personal dependency relations. Thus, sickness insurance was not provided by the state, but rather the employer of a farm servant was required to provide medical care and hospitalization. Other employees had to be given temporary medical treatment if their normal residence was in another commune.⁵¹ Agricultural workers using machinery were provided with accident insurance, the cost of which was paid by the employer. More recently, disability and old-age pensions were established for male workers on a state-wide compulsory basis. These were the first major inroads upon the principle of personal responsibility of employers. These provisions did not apply to women, who were likewise unprotected by other special legislation with respect to labor conditions.⁵²

The number of workers and small holders who had to depend upon employment in agriculture ensured seasonal unemployment of substantial proportions. The number of days of employment during the year might vary from 80 to 220, depending on the year and the area. When industrial curtailment coincided with a poor agricultural market (as it normally did), the ranks of unemployed farm workers were swelled by industrial employees returning to their native villages in search of employment or support.⁵³

ROUMANIA

Perhaps more than any other of the Eastern European succession states, or countries experiencing major territorial changes as a result of the First World War, Roumania during the interwar period exhibited a diversity of property and tenure systems in its several regions. Certainly the diversity was greater than that prevailing in Poland and Czechoslovakia, which also incorporated territories previously ruled by different governments and influenced by divergent institutional systems. Perhaps the closest approximation to the diversity of Roumanian economic institutions was to be found in Yugoslavia.

It may be useful to recall that to the Old Kingdom of Roumania (Moldavia and Walachia or Muntenia) the peace settlements added Bessarabia from Russia, Bukovina from Austria, Transylvania (including Crisana,

⁵¹ See *The Law on the Contract of Employment of Agricultural Workers . . .*, pp. 37-43.

⁵² See European Conference on Rural Life, *Hungary*, pp. 72-74.

⁵³ International Labour Office, "The Agricultural Labour Situation in Hungary," *loc. cit.*; Janós Szeibert, "Le chômage agricole en Hongrie," *Magyar Statisztikai Szemle*, 17:365-381, April, 1939.

Maramures, and the Banat) from Hungary. Moreover, the southern part of Dobrudja had been acquired from Bulgaria on the eve of the First World War, and was not fully integrated into the national structure until after the war. These areas not only had varied institutional arrangements before becoming a part of Roumania, but that variation was regarded as so great as to prevent uniform land reform legislation after the war. Thus, it is impossible to outline a property and tenure system that would be uniformly accurate for all sections of the country. Indeed, even the differences in area measures were perforce preserved in the distribution of land, the former Hungarian areas using arpents (that is, cadastral jochs) rather than hectares. The review of property, tenure, and labor systems must accordingly proceed by regions.

1. Throughout Roumania the typical mode of land tenure was the private cultivation of small holdings. Large estates were few in number, and of small consequence with reference to the total cultivable land. Within this common pattern, however, the detailed regulation of size, alienability, succession, and the like varied greatly by region.

The land reforms effectively abolished feudal tenures, which had persisted in various modified forms until the First World War, but did not abolish tenancy. In some cases a nominally cash rental actually paid by annual labor contracts continued to be the practice. Although exact data on forms of tenancy and classes of tenants are not available, it is claimed that the bulk of the tenant farming on the large estates was contributed by peasant share cultivators, and not, as before the reform, by entrepreneurs renting whole estates and operating them through sub-tenants or hired workers. Statistics for 1927 indicate the following percentages of the arable land held in tenancy in the several regions: Old Kingdom, 8.4 per cent; Transylvania, 8.1 per cent; Bessarabia, 8.4 per cent; Bukovina, 7.8 per cent.⁵⁴ Since tenancy chiefly affected the cultivation of larger holdings in Roumania, it is understandable that the foregoing percentages of the arable area so held are in every case higher than the corresponding figures for the proportion of owners who let out land.⁵⁵

Share tenancy (*métayage*) was more common in the days immediately following the reforms, since many peasants subsequently granted title to lands were in the position of share tenants during the time of expropriation and resettlement. The expropriation of large areas of large estates, and the entire area of those estates held by foundations, corporations, foreigners, and those living outside the country—all served to reduce materially the tenant farming of large estates and increase the number of farms, large and small, cultivated by their owners.

The reduction in the number and extent of large estates in all regions similarly diminished the importance of hired agricultural labor.

Since the agrarian reforms primarily affected arable lands, communal

⁵⁴ David Mitrany, *The Land and the Peasant in Rumania*, Publications of the Carnegie Endowment for International Peace (London: Humphrey Milford, Oxford University Press, 1930), pp. 246-247.

⁵⁵ *Ibid.*

ownership of pastures, as well as large private holdings of forests and pastures, was little affected. However, some limitations were placed on the extensity of such areas under whatever ownership. These limitations were applied most stringently in Transylvania.

The agrarian reform laws for all regions of Greater Roumania were intended to establish and maintain peasant proprietorship. Thus, previous rules of the civil law were modified with respect to both alienability and succession. Since division in kind had been formerly practiced in nearly all regions (it was less extensive in Bessarabia), the new agrarian laws attempted to prevent continued subdivision. In the Old Kingdom and Bukovina, a non-divisible minimum of 2 hectares was established (this applied only to crop lands and not to kitchen gardens, vineyards, and the like). The new law allowed inheritance undivided in kind, but with money payments for other heirs or a single undivided inheritance up to 50 hectares. Similar laws were applied in Transylvania, but the areas affected were arpents rather than hectares.⁵⁶ This amounted to placing a minimum area of 2 hectares (or 2 arpents in Transylvania) under entail, but with an allowable entailed holding up to 50 hectares or arpents. While entailed lands were established for small holdings, the mortmain lands of the churches and various foundations were expropriated. In principle, the expropriation of arable lands under mortmain was complete, but some exceptions were made for allotments to the clergy and for similar uses. Mortmain estates had been particularly extensive in Hungary, where various churches and educational institutions had been mainly supported by rents.

Before the agrarian reforms peasant lands in most of the regions had not been protected against subdivision, but had been inalienable. The inevitable result was successive parcellation. The new laws reversed the restrictions, providing for an indivisible minimum but also for alienability under certain restrictions. Thus, lots could be sold only to Roumanian citizens who were already cultivators or who held agricultural degrees, in either case the prospective purchaser becoming the direct cultivator. The lands distributed under the reform were inalienable during the payment of the resettlement price and for five years after the title deed had been secured. The land could not be sold to anyone who would thereby own more than 25 hectares of arable land. In Bessarabia this maximum was reduced to 20 hectares. The state reserved the right of pre-emption in all

⁵⁶ *Ibid.*, pp. 161-162. Mitrany's work constitutes the principal source from which are drawn materials on tenure systems and the agrarian reforms in the several regions of Roumania. Considerably less detailed summaries are given by Valeriu Bercaru, *La réforme agraire en Roumanie* (Paris: Librairie Universitaire J. Gamber, 1928); Olindo Gorni, "Land Reform in Rumania," *International Labour Review*, 22:445-482, October, 1940; Louis G. Michael, *Agricultural Survey of Europe: The Danube Basin; Part 2, Rumania, Bulgaria, and Yugoslavia*, United States Department of Agriculture, Technical Bulletin No. 126 (Washington: 1929); Emile Petrin, "Land Reform in Rumania," *International Review of Agriculture*, 22:87E-107E, March, 1931. See also ECRL No. 4, pp. 52-64; C. Evciplidi, *Les états balkaniques* (Paris: Librairie Arthur Rousseau, 1930), pp. 83-87.

sales of resettlement lands, and in all sales involving areas of 50 hectares or more. Mortgageability was sharply limited on lands under 25 hectares in extent, but legislation in 1937 relaxed the restrictions on alienability and indebtedness.

It appears that for the most part the agrarian reforms did not establish absolutely uniform tenure principles even within each region, as the new rules primarily affected those areas redistributed from state and expropriated lands. Thus, small holdings held privately before the reforms and the residual areas of large estates were apparently little affected by the new legislation. The requirement in Transylvania that land not expropriated could not be leased for less than seven years, and with equal preference to cultivators and cooperative societies, provides a notable exception to the general tendency. On the other hand, the agrarian reforms affected a substantial proportion of the farm area and may be assumed to have established a general pattern in tenure principles.

2. The close geographical proximity of the revolutionary movement in Russia, a proximity fostered by the close contact between Roumanian and Russian troops on the Eastern Front during the war, made agrarian reforms in Roumania a virtual necessity to ensure social stability. It is, of course, extremely doubtful that any of the Eastern European agrarian reforms were undertaken on the "purely economic" grounds sometimes claimed for them. Yet it seems safe to say that political and nationalistic considerations figured more prominently in Roumania than in most other Eastern European countries.

Until the time of the agrarian reforms, modified forms of feudal tenures had prevailed in most regions, and were especially marked in the Old Kingdom. The "freeing" of the serfs in 1864 had been accomplished by giving them some two-thirds of the land of the estates, but usually the poorest land. The division of holdings through succession rather quickly made these plots too small to support a family. Additional arable land and, until 1907, all pasture land was therefore "rented" from the landlord. But since the peasants could not pay rents in cash, share tenancy developed to some extent. More commonly, however, the lands were rented by payments in labor on the landlord's estate by the peasant. Since he was in a poor bargaining position, the peasant frequently worked a great many days for the privilege of cultivating a small extra plot of land. The modification of feudal tenure was if anything, therefore, in the direction of increased exploitation of the peasant.

In all of the regions added to Roumania after the First World War large estates and tiny peasant holdings had prevailed. In Bukovina, the granting of lands to the peasants upon their freedom from serfdom in 1848 was conditional upon remuneration of the landlords. To pay these charges, as well as other capital additions, the peasants mortgaged their farms at usurious rates of interest, and frequently lost their plots to speculators. The debt burden and the practice of subdivision through succession placed the peasants in a precarious economic position. In Bessarabia the land re-

forms sponsored by the Russian government around 1907 had been largely subverted by minor functionaries. Although some communal cultivation continued (following the *mir* pattern), large private estates prevailed in the north, and very small peasant holdings in the south. In Transylvania, various reforms carried out after the freeing of the serfs did not seriously modify the property distribution typical of areas under Hungarian rule: a rather large number of very small holdings, and a few tremendous estates occupying about half of the total area.

In the Old Kingdom, the land reform laws totally expropriated all arable land (including meadows and pastures fit for cultivation) belonging to the state, public and private institutions, and the total extent of estates belonging to foreigners and absentees. Other large private estates were expropriated on a progressive scale, allowing a residual minimum of 100 hectares arable, and a maximum of 500 hectares. These amounts, however, originally referred to estates and not to proprietors, so that it was still possible for a single proprietor to own several estates falling within the 100-500 hectares range. This was modified by subsequent legislation, which was so interpreted as to place an absolute maximum of 500 hectares for a single proprietor. Former owners were compensated at a maximum rate of forty times the rent fixed for 1916, payable by the state on a long-term basis. Only about half of this amount was to be paid directly by the peasant, also on a long-term basis, although the additional expense to the state naturally figured in subsequent taxes paid by the new proprietors.

In Bukovina, the following types of properties were expropriated in full: those belonging to foreigners (those who were not Roumanians or citizens of the region in 1914), to absentees (living outside Greater Roumania), to individuals who had lost their civil rights, estates farmed out for nine consecutive years before 1919, and mortmain estates. The maximum to be retained by a single cultivator was fixed at 250 hectares, which could be reduced to 4 hectares if neither the owner nor his parents had been cultivators. Communal property in excess of grazing and other needs was expropriated. As in other regions, forest and unproductive land expropriated became the property of the state. Compensation provisions were similar to those for the Old Kingdom.

In Bessarabia the following were expropriated in full: former state and crown domains, estates belonging to foreigners who had not elected Roumanian citizenship, estates rented out for five consecutive years, mortmain estates, and those belonging to towns but not required for purposes of town planning. All areas in excess of 100 hectares of arable land per proprietor were expropriated without exception, and the law provided for further expropriation if necessary. Compensation was similar to that in other regions, with the state absorbing one-fourth of the cost.

In Transylvania the legislation was extremely ambiguous, and all of the central provisions were modified by numerous and imprecise exceptions. Estates that were without significant exception subjected to complete expropriation were those belonging to foreigners (that is, those who

had or would elect foreign citizenship), and those belonging to institutions not located in Roumania. Other estates subject to complete or partial expropriation, with numerous exceptions and qualifications, included: properties acquired during the war, estates over 500 arpents in size, various institutional and mortmain holdings, communal holdings beyond a per capita allowance, and estates rented out for a period of years. In fixing compensation for expropriated land in Transylvania, more latitude was allowed the commissions charged with the reforms than in the other regions. Payments and transfers were also arranged more quickly, so that interim rentals payable to the landlord or to the state were not so common there as elsewhere.

It appears that in all regions expropriated forest and unproductive land became state property, as did the subsoil of land distributed to new proprietors.

The distribution of land itself involved a complicated process of determining the order of priority for various classes of claimants to land, and the preparation of lists of such claimants in terms of their appropriate positions. For the Old Kingdom the order of preference was: those mobilized in the World War, those mobilized in the Balkan war of 1913, war widows in trust for their children, landless cultivators, cultivators with very small holdings (under 5 hectares), and war orphans. Within any one category, additional priorities were established: war invalids, peasants who had labored on the estate being divided, peasants who had stock and a settled farm, those with more children, those who were older. Others were also allowed to claim land after the foregoing claims had been satisfied: holders of agricultural degrees, rural priests, teachers, and civil functionaries. Subsequently, land allotments were allowed to decorated military heroes who previously had not been cultivators.

In Bukovina full holdings of 4-8 hectares and "colonization lots" of 5 hectares were established, with first preference to those having no land at all, and to those who ceded their previous property rights in favor of new allotments. Complementary lots were allowed to those having farms of less than 4 hectares, and lots were also granted to village priests and rural schools.

In Bessarabia the order of preference was considerably different, as is evident from the following priority list: holders of plots under 6-8 hectares to be granted supplementary plots to achieve the minimum size, full holdings to be distributed to landless peasants living on the estate to be divided, and supplementary lots to those living in the vicinity. The last group could be counted in the third group if they ceded their existing rights to the state. Additional allotments of various sizes were made to teacher-training colleges, rural schools, regiments in training, and to various establishments for experimental and similar agricultural work. Later special allotments were made to members of the provisional assembly that convened to unite the province with Roumania, and the 100 hectare

maximum was revised upward for those landowners whose daughters married officers of the Roumanian army.

In Transylvania the expropriation and resettlement were designed to proceed as a single process, permission even being given for voluntary agreements between landlords and peasant purchasers, provided that the general intention of the reform was not violated. The general order of preference was: local residents, those who suffered because of the war, and war invalids capable of working the land. Mobilized peasants received general preference. Complementary plots for those holding less than 5 arpents took precedence, followed by new plots for landless laborers and servants. The size of the holdings allotted varied by region and by the capacity (including the capital) of the new proprietors to work the land.

As already noted, lands affected by the agrarian reforms became more easily alienable than they had been under previous land laws, although some restrictions still applied. On the other hand, division through succession was limited but only by establishing a very small indivisible minimum. Since only minor attempts at consolidation of holdings were undertaken (as in the provisions for cession of previous plots in return for consolidated allotments), and complementary plots for small holders were granted in all regions, the reform did little to alleviate the serious scattering of holdings. The entirely new holdings were for the most part consolidated, but still subjected to division through succession down to the minimum of 2 hectares or 2 arpents. Some slight consolidation was begun in 1930 in Dobrudja, a region where scattering was extreme. For the most part, however, the agrarian reforms did little to modify the traditional pattern of village residence, with or without communal pastures, and scattered, mostly unfenced, plots in the surrounding area.

With respect to the area affected by the reforms, the strict limitation of large estates, the small areas given to new proprietors, the increase in parcellation, and the more or less precipitous character of the changes in tenure, the Roumanian land reforms are customarily classified as "radical." Such a classification is confirmed by the economic consequences of the land distribution, noted more fully in Chapter IV.⁵⁷ In the characteristics noted above Roumania ranks with the Baltic states as areas marked by extreme reforms, without, however, the compensating advantages of size of holdings, state-aided capitalization, and other opportunities for employment that characterized economic development in the latter states.

3. and 4. Since Roumanian agriculture became predominantly a system of peasant cultivation, the use of employed labor was not extensive. There are no available data on the proportion of those gainfully occupied in agriculture who were hired workers, and *a fortiori* no data on the occupational distribution of such workers.

Workers engaged by the year were housed and fed, and paid monthly cash wages in addition. Day laborers, the demand for whose services was

⁵⁷ See Ihrig, "Les résultats des réformes agraires d'après-guerre," *loc. cit.*; Jurgen-Seraphim, *loc. cit.*

probably small, were paid wages that differed widely by district and season. These laborers usually were fed, but no special housing was provided. Seasonal workers were under collective agreement, with a gang leader representing the group in negotiations. It is reported that there was a shortage of skilled laborers.⁵⁸

There was apparently no special legislation applying to agricultural employment, a lack made less surprising if the small importance of large-scale agriculture be considered.

YUGOSLAVIA

The interwar territory of Yugoslavia, like that of Roumania, was composed of a central state (Serbia) tracing direct continuity to the prewar period, and several regions which were formerly under the rule of other governments. It is accordingly necessary again to take account of the divergent institutional developments of the several provinces that were united as the Kingdom of the South Slavs.

It may be recalled that in addition to the South Serbian territory acquired from Turkey in the Balkan wars, and not fully incorporated into the institutional structure until after the First World War, the new kingdom incorporated: Dalmatia and Carniola from Austria, Croatia-Slavonia and parts of the south of Old Hungary (chiefly the Vuyvodina) from Hungary, the semi-autonomous Austro-Hungarian provinces of Bosnia and Herzegovina, and the independent state of Montenegro. In South Serbia and Bosnia and Herzegovina the influence of long Turkish domination was clearly evident at the time of the founding of the new kingdom. The troubled political history of the other areas was likewise reflected in the economic institutions, and in areas like the Dalmatian coast agrarian systems instituted under the Roman Empire survive into the modern world.

1. The feudal domination of the Ottoman conquerors, abetted by local noblemen, left its imprint on most of the southern regions of the interwar territory of Yugoslavia. Only in Montenegro did a substantial area withstand Turkish military and social domination. But the various sections of the region of the South Slavs exhibit quite divergent results of Turkish influence. Thus, in North Serbia virtual independence from the Ottoman Empire was gained in 1830, and complete independence in 1877. The Turkish landlords abandoned their domains, and the hereditary tenants (serfs) simply came into full proprietary possession of the lands they had been cultivating. Long before the agrarian reforms following the First World War, therefore, old Serbia was a region of small peasant proprietors. Tenancy and agricultural employment were of little importance.⁵⁹

Turkish domination of the land tenure system in Serbia contributed to the decline of communal ownership by village-kinship groups (*sadruga*).

⁵⁸ See Gorni, *loc. cit.*

⁵⁹ Unless otherwise indicated, the present summary is based on [Otto] von Frankeš, "The Agrarian Reform in Yugoslavia," *International Review of Agriculture*, 25:89E-100E, 125E-136E, 174E-198E, 209E-230E, 269E-287E, 311E-327E, March-August, 1934.

The process was further accelerated upon the collapse of Ottoman feudalism by the adoption in Serbia of a modified Napoleonic Civil Code, which took no account of ancient tribal organization. Some pastures and woodlands remained as communal holdings, and nomadic pastoral groups retained communal rights to mountain pastures and customary rights of free passage between winter and summer pastures. Succession to cultivated land, and some of the pastures, was by division in kind among male heirs. However, during the interwar period there persisted a system of entail in an attempt to ensure a minimum holding (house, garden, equipment, and land requiring two days to plow). This entailed portion was also inalienable and could not be hypothecated. This rule did not prevent successive subdivision, but did prevent the peasant from securing credit for the purchase of additional land.⁶⁰

South Serbia (chiefly the Yugoslav province of Vardar) remained under Turkish rule until 1913, and was not effectively brought within the legal control of the Slavs until after the First World War. An extremely complex system of property relations had developed under Turkish rule. The most common had been a feudal tenure system, whereby hereditary serfs (here called *čifci*) had tilled the ground and paid their feudal dues in kind and in labor service. But there were also various types of share tenancies for fixed lengths of time, fixed rentals in cash or kind, and farm servants (*momci*) who were paid partly in kind and by an allotment of land to which they had usufructary rights (thus closely resembling the deputatists of Central Europe). Some arable as well as pasture lands were communally owned. In the general scramble for land that followed Turkish defeat and the postwar political and economic disorganization, the common practice was for all classes of tenants to take and retain possession of the land they had cultivated without legal or judicial ceremony. This process was not without conflict, especially among the cultivators themselves, since rights were poorly defined, boundaries were extremely hazy, areas had never been precisely determined, and all written records were subject to falsification. The uncertainty concerning property rights was enhanced by a considerable political instability. This state of affairs continued unchecked for the first decade of the interwar period, and to a lesser degree thereafter. The final settlement left former serfs in legal possession as individual proprietors with rights subject only to the Civil Code. The claims of other tenants and former laborers were not allowed; the land was returned to the landlord subject to partial expropriation on behalf of tenants, laborers, or others having a claim to land under the general principles of the agrarian reform for the whole country. Thus, it appears that some fixed and share tenancies remained, although the number of those in actual possession of the soil who were not subsequently dispossessed undoubtedly reduced the extent of tenancy. The reduction

⁶⁰ See Mijo Mirković, "The Land Question in Jugoslavia," *The Slavonic Review*, 14:389-402, January, 1936.

was further facilitated by the confiscation of the estates of Moslem landlords and by other features of the agrarian reform.

Communal ownership of forests and pastures still prevailed in South Serbia, but few if any arable lands were so owned. Succession followed the general Serbian pattern of division among male heirs. This was modified only in the case of the rather numerous resettlement holdings, formed as small and medium-sized family farms from state lands and more especially from lands left unoccupied through the death or flight of former holders. Even for these plots, however, the limitation on subdivision lasted only for the period (three to ten years) during which title to the land was incomplete. For such holdings, however, there was a permanent injunction against mortgages in favor of private creditors. The land was alienable, but agricultural cooperative societies and local beneficiaries of the agrarian reforms had prior rights of purchase, and the restriction on incurrence of debts held for subsequent owners.

Only a few areas of Montenegro were under Turkish rule, and the abolition of feudal tenures in those areas followed the same pattern as in the adjoining areas of South Serbia. However, it is not clear whether the abolition of these tenures resulted in the establishment of individual holdings, or whether the land so freed was incorporated into the system of communal ownership found elsewhere in Montenegro. As the only substantial area of Southeast Europe never under Turkish domination, the main portion of Montenegro retained the traditional Slavic system of land tenure by a village kinship group.

Before the First World War Bosnia and Herzegovina had gained a nominal independence, chiefly by virtue of the declining power of the Ottoman Empire and the ascendancy of the Austro-Hungarian Empire. The intermediate and somewhat indeterminate position of the area is reflected in the mixture of Moslem feudal land tenures and private peasant holdings. The latter were of considerably less importance than the former, and only developed in the areas most strongly under Austro-Hungarian influence. The persistence of the Turkish feudal system after the territory had come under Austro-Hungarian hegemony is worthy of comment. The independence from Turkish rule was gained gradually. Elsewhere in Southeastern Europe a war of political liberation from the Ottoman Empire was accompanied by an internal revolution overthrowing the politico-economic domination of feudal chieftains. In the absence of a definitive and violent severance of political ties, internal revolution did not come about in Bosnia and Herzegovina. Moreover, conversion to Mohammedanism had gone much further in these areas than in other adjoining states except Albania. Thus the landlords, and to a certain extent the peasants, followed the Moslem feudal principles of land tenure even when their political structure became tied to that of the Austro-Hungarian Empire.

Aside from free peasant holdings, the land tenure system in Bosnia and Herzegovina was primarily that of various types of feudal estates farmed by semi-free serfs (*kmets*) whose payments to the landlord included both

a share of the produce and various labor duties. The land reforms transformed these feudal holdings into free property. Tenancy was almost entirely abolished. The land distributed (or rather, the titles transferred) was given to families, and not to individuals. The families who thus became property owners, were, however, apparently the "small" families and not the larger kinship organizations (*sadruga*). The effect of this procedure was thus not to create truly communal ownership of cultivated lands, but rather to establish an effective entail and to prevent subdivision through succession. It would appear that family ownership would also limit alienability and debt encumbrances. Pastures and some forest lands were owned communally.

Feudal tenures had been effectively abolished during the last century in the former Austrian section of present Yugoslavia (roughly Carniola or Slovenia). But large estates and various types of tenancy had persisted. The operation of the agrarian reform apparently reduced tenancy to a minimum, and so divided the large estates that few opportunities for agricultural employment existed. The typical holding here, as elsewhere in the country, was the small or very small plot. In those parts of Slovenia most influenced by Germanic institutions the size of the holdings was somewhat protected by the practice of undivided succession. Lands affected by the agrarian reforms were, in the case of the allotments for which the peasant had to pay part of the landlord's compensation, inalienable until the payment had been guaranteed by proper authority, and other legitimate charges (especially debts to agricultural societies) had been met. Even after the property became alienable, however, the state retained the right of pre-emption for ten years. Lots assigned to war volunteers without payment were made inalienable for five years. The area of mortmain estates (mostly church lands) was reduced, as was the communal or private forest area. As in other regions, communal pastures still prevailed.

The northern sections of Yugoslavia that were a part of Old Hungary (chiefly Vojvodina, or the modern Yugoslav province of Dunavska) and the Hungarian-ruled region of Croatia-Slavonia may be treated as a single unit with regard to property relations. Feudal tenures in this area had been effectively abolished during the last century, and some redistribution of land had taken place. However, some large properties persisted, farmed by laborers or tenants. Following the postwar agrarian reforms, there was little tenancy, and the practice of the entrepreneurial renting of large farms and subletting was definitely forbidden. Breaking up the large estates resulted in the predominance of very small peasant holdings. There was still some demand for hired agricultural labor in vineyards, and during the harvest season in Dunavska. Communal ownership of pastures and woodlands continued, although the area of such holdings was limited. The communal farming of cultivated land and the renting of communal land for the partial support of the village practically disappeared. The pattern of ownership by kinship groups gave way to division of such lands as private holdings. These private holdings were alienable, and inheritance was by

division in kind. The only limits on alienability were those applying to land distributed as a result of the reform legislation, and were the same as applied in Slovenia.⁶¹

On the Dalmatian coast of Yugoslavia the remnants of feudal tenure lasted longer, and in more varied forms, than in any other section of the country. Although tenures involving labor duties as well as a share of produce (the *kmet* system) were nominally abolished by the general reform legislation of 1919, applied specifically to Dalmatia in 1930, the actual transfer of property rights did not begin until 1933. The operation of the reform affected primarily *kmet* tenure, "estates" (hereditary leaseholds, survivals of the Roman emphyteusis and scarcely distinguishable from private ownership), and other hereditary tenancies involving fixed payments without regard to soil use or produce. In these cases the land reform transferred unrestricted ownership to tenants of long standing, up to 10 hectares per holder. Other tenancies were less affected, since the land reform dissolved existing contracts and expropriated part of the area of large holdings for the benefit of cultivators, but did not forbid new contractual agreements. Therefore both ordinary fixed-rental tenancies and the colonat (or share tenancy) systems still existed in the interwar period. The operation of the land reform was, however, in the direction of increasing the number of small private holdings. Extensive communal pastures existed. Succession was by division in kind, but lands were alienable. Indeed, the bidding up of land prices by returning migrants was one of the more serious problems of the area, which was characterized by a dense agricultural population.

In summary, the single most common form of land tenure and property distribution throughout Yugoslavia was that of the private ownership of very small farms, subject to further subdivision with each succeeding generation. In most areas this private holding was effectively increased by communal pasture and forest lands, and in some areas the kinship group maintained the continuity of holdings and the avoidance of the over-small and uneconomical plots characteristic of the private holdings. In all sections the smaller farms were likely to be heavily weighted with debts, incurred as a result of the economic inadequacy of the holding, that tended to transfer property rights again out of the hands of the actual cultivators.

2. Since it has been necessary to review in part the role of the agrarian reforms in property distribution and tenure in the various regions of Yugoslavia, the present summary may be confined to some of the more important features of the reform not yet discussed.

As previously indicated, the property systems prevailing in the several regions comprising the new Yugoslav state had followed quite different courses of development. In brief summary, North Serbia was already an area of small peasant proprietors. Similar independent holdings were of less importance in all the other areas, but not entirely lacking in any. The land tenures of South Serbia and of Bosnia and Herzegovina were pri-

⁶¹ See, in addition to Franječ, *loc. cit.*, Mijo Mirković, *loc. cit.*

marily the various feudal tenures established under Turkish rule. The areas provided different problems for execution of the reforms, however, since in the latter two provinces the primary problem was simply that of transfer of property rights to cultivators already on the land, whereas the fleeing Turks left large areas in South Serbia available for migratory settlement from other regions. In Dalmatia also the chief modification necessary to establish peasant properties was the transfer of ownership from the state or landlords to tenants. In most of Montenegro communal ownership prevailed before the reform and remained unaffected by post-war legislation. Croatia-Slavonia and other formerly Hungarian areas were accordingly the only regions in which agrarian reforms were undertaken under conditions similar to the general pattern in the remainder of Eastern and Southeastern Europe—namely, the expropriation of large estates and redistribution of land to landless workers and proprietors of very small holdings.

The land reform in South Serbia was complicated by the fact that after the First World War all classes of tenants seized the property that they had cultivated. It was only after 1933 that part of the farms were returned to their original owners, leaving only the former feudal tenants (*kmets* or *čifci*) in undisputed possession without payment, but with payment by the state to those landlords still subjects of the state (that is, not Turks). The areas not settled, or left vacant by the departure of the Turks, and the heavy wartime mortality and emigration of the rural population provided opportunity for establishing medium-sized holdings. The authorities were not able, however, to prevent widespread "land-grabbing" both by local residents and by immigrants from other areas. Land tenures as finally determined by law partly rearranged the distribution of holdings, partly legalized the *de facto* possession of the cultivators.

In the northern territories, primarily those formerly under Hungarian rule, the general policy of expropriating absentee owners (especially foreigners) entirely, and of reducing large estates through partial expropriation was carried out. The amount of land expropriated (and conversely the land free from expropriation), the compensation made, and the classes of persons to whom land was appropriated varied not only with regional economic differences, but with political policies of the time and place. Land reform is by definition a political maneuver, but in Yugoslavia it was a political weapon subject to vacillation owing to pressure from various quarters. Landless workers and tenant farmers pressed their claims for land, while landowners held considerable political power. In the absence of a consistent, forthright, and definitive policy, estates were broken up and land distributed with scarcely any regard to economic organization. Thus agricultural industries were not protected, and little account was taken of the capital or ability of prospective small proprietors. Owners were given nominal compensation, part of which was borne by the new proprietor, but the new property owner frequently emerged with a tiny holding without stock or equipment, and at the mercy of creditors or those

from whom he had to purchase various services, such as haulage and plowing, by a long period of labor. The new holders were, by preference, propertyless war veterans. These persons not only lacked capital and training, but were frequently met with hostility by members of the local village whose demands for land were still not satisfied. In short, the land reforms of Yugoslavia, especially those carried out in Croatia-Slavonia and Vojvodina, finally succeeded in establishing an "independent" peasantry with security of tenure guaranteed by ownership, but with a most precarious economic situation. The precariousness of economic position could only have been greater had the redistribution of land abolished communal property and the village organization of rural life.

3 and 4. Hired agricultural labor had naturally been of very little importance in those areas predominantly characterized by small properties or small tenancies. Thus, it was again primarily in the north that agricultural laborers working on the large estates, as well as small owners supplementing their incomes by part-time work for estate owners, were seriously affected by the agrarian reforms. Since the land available for distribution was so limited that these laborers either got plots too small to support a family or received no land at all, these workers were faced with unemployment. This situation continued in varying degrees of seriousness throughout the interwar period. Laborers found employment on the remaining medium and large farms, emigrated to the towns or abroad, became dependent on relatives, or made some other equally unsatisfactory adjustment.⁶²

Most of the agricultural laborers were to be found in the Dunavska province, engaged as estate laborers and paid partly in cash and partly in kind. Some workers of all classes were to be found distributed throughout the country. Seasonal workers were primarily peasant proprietors seeking outside employment. The accompanying table indicates the small proportion of those occupied in agriculture who were wage laborers. It is not evident from the official data how small holders who received part of their income from outside employment are classified, but it is probable that these constituted an additional number of workers competing for limited employment opportunities.

Legislation governing hours of work, night work of women and children, minimum age, minimum wages, collective bargaining, conciliation and arbitration did not apply to farm workers. Terms of employment on a local basis, however, might be decided by the representatives of labor and the employers.

Social insurance had no application to agricultural workers except that there existed compulsory accident insurance for those workers using farm machinery. However, farm laborers were given special privileges through the public employment agencies and seasonal workers were given reduced

⁶² See Frangeš, *loc. cit.*, pp. 182E-185E; D. Yeremitch, "The Problems of Agricultural Labour in Yugoslavia," *International Labour Review*, 88:219-225, August, 1988.

TABLE 7

Number and Percentage Distribution of Farm Workers of Various Classes in Yugoslavia, 1931¹

Classes of Workers	Number	Per Cent
Holders and Their Families	4,605,657	90.60
Proprietors and tenants	1,766,553	34.75
Members of the family	2,839,104	55.85
Hired Workers	477,503	9.40
Functionaries and employees	2,374	0.05
Laborers	21,482	0.42
Day laborers and domestics	450,635	8.87
Apprentices	124	— ^a
Household servants	2,888	0.06
Total	5,083,160	100.00

^a Less than .01 per cent.

¹ Based upon data in Yugoslavia, Statistique Générale d'État, *Annuaire Statistique* (Beograd: 1938), pp. 58-59.

railroad fares. The predominance of peasant agriculture meant that the political power of landless workers was too small, and their economic bargaining power too small in view of the existing demand, to make any effective claim for superior terms or conditions of employment.

BULGARIA

Although Bulgaria has become involved in all the major European conflicts during this century, the territory of the country in the interwar period had been under Bulgarian rule since the kingdom achieved political independence from the Ottoman Empire in 1878. Therefore the basic institutional structure is about the same throughout the country.

1. The feudal system of the Turks, similar in Bulgaria to its organization in Yugoslavia, was of declining power throughout the nineteenth century, the nobility gradually transforming the large estates into private property. Thus the freedom from Turkish rule directly caused the collapse only of the remaining feudatory estates (*spahileuk*), but not of large holdings held as private property (*tchiflik*).⁶³ The latter estates were only gradually broken up, and some of them remained after the First World War.

The large estates in Bulgaria were farmed by hired laborers rather than by tenants with fixed or share rentals. Tenancy thus was not a frequent

⁶³ See ECRL, No. 4, pp. 66-68; Y. G. Kovatcheff, "Agrarian Reform in Bulgaria," *International Review of Agriculture*, 25:441E-472E, October, 1934.

type of holding.⁶⁴ The splitting up of large estates through inheritance, occasional purchase of lands by small holders, and especially through successive agrarian reforms reduced the demand for hired agricultural labor to a very low level.

At the same time that the large private estates were being broken up after the end of Turkish rule, the *sadruga* lands were also being broken up among members for private cultivation. Thus communal land ownership was almost limited to forests and pastures.

Inheritance was during the interwar period almost entirely by subdivision among all heirs, and this practice, combined with the usual scattering of holdings dating from the apportionment of feudal or communal property, produced an extreme parcellation and scattering of plots. Even lands affected by the agrarian reforms were divisible through succession, and all private lands were inalienable. This allowed some selective competition for the limited land supply but also the development of a debt structure that at times threatened to transfer ownership to merchants and others in a position to lend money.

2. Bulgaria was already predominantly a country of small peasant properties at the time that the agrarian reform movements were sweeping Eastern Europe. Nevertheless, the number of landless peasants and owners of tiny plots ensured support for a further apportionment from the lands belonging to the state and remaining large estates. The numerical importance of very small holdings is evident from the fact that a farm having over 80 hectares of cultivable land was regarded as a "large estate." The postwar reform legislation made available for distribution cultivable state lands, non-utilized forest and grazing land in dispute between communes, and all privately owned cultivable land over 80 hectares in extent. Payment was made to private owners, but at a decreasing scale for larger properties. The law recognized only minor exceptions (chiefly model farms) to the maximum of 80 hectares, but as in other countries passage of a law and its application are not the same thing. Nevertheless, by 1934 farms having more than 80 hectares of cultivated land (arable, gardens, tree and bush crops, artificial and natural meadows) comprised only 2.7 per cent of the total cultivated land.⁶⁵

In the distribution of available lands, which were far less extensive than would have been required to satisfy the "legitimate" demands, those who had been previously landless (unless they had sold land and squandered the money), proprietors of tiny plots, Bulgarian refugees from regions under foreign rule, farm workers who had unusual training or equipment, farming specialists who would establish model farms, and cooperative

⁶⁴ Only 2.2 per cent of the total number of holdings were entirely rented, 68.9 per cent were entirely owned, and the remaining 28.9 per cent were partly owned and partly rented. However, the rented land comprised only 10.1 per cent of the total agricultural area. All data are for 1934. Computed from Bulgaria, Direction Générale de la Statistique, *Annuaire Statistique du Royaume de Bulgarie*, 1940 (Sofia: 1940), pp. 194-195.

⁶⁵ *Ibid.*, pp. 194-195.

societies were given preference in that order. As already noted, no distinct provisions were made with reference to alienability or succession. Moreover, no effective effort was made to accomplish consolidation of holdings by means of the land distribution, so that the village structure with its surrounding and scattered parcels remained the customary rural organization.

3 and 4. The number of agricultural workers had not been large before the most recent land reforms in view of the early development of very small peasant holdings. The division of the remaining large estates added to, but by no means created, unemployment on the land. As becomes evident from the accompanying table showing the number of employees among those gainfully occupied in agriculture, the Bulgarian agricultural labor system was characteristically that of peasant enterprise and not of capital concentration and wage labor.

TABLE 8
Number and Percentage Distribution of Farm Workers of
Various Classes in Bulgaria, 1934¹

Classes of Workers	Number	Per Cent
Owners and Their Families	<i>2,866,530</i>	<i>98.94</i>
Owners	841,707	29.05
Members of the family	2,024,823	69.89
Hired Workers	<i>30,536</i>	<i>1.06</i>
Directors and supervisors	2,091	0.07
Specialists and employees	166	0.01
Permanent workers	28,279	0.98
Total	2,897,066	100.00

¹ Based upon data in Bulgaria, Direction Générale de la Statistique, *Annuaire Statistique du Royaume de Bulgarie*, 1940 (Sofia: 1940), pp. 206-207.

It does not appear that agricultural labor relations were covered by special legislation, or that the rather extensive social insurance extended to agricultural workers.

ALBANIA

Albania was the only country in Europe in which feudalism in fairly pure form lasted at least to the end of the interwar period. Although having a rough terrain and virtually no roads, Albania has felt the influence of both Western Europe and the Ottoman Empire. Yet by virtue of its relative inaccessibility it has yielded to few of the pressures and movements of the present century. Whether or not profound institutional

changes have been introduced since Italian occupation and the events of the Second World War is not known. The following summary assumes the interwar property situation to be the actual one.

1. The feudal landlords, who are both Christian and Moslem, acknowledge a nominal fealty to the king or central government, but retain great local autonomy. A very few families control practically all of the land, which is farmed by tenants, part of whom are bound to the soil.⁶⁶

The hereditary tenants pay a tithe (10 per cent) of the product to the state and usually about one-third of the remainder to the landlord. But various other payments in kind and in labor increase the burden of the peasant. Besides the feudal tenures that prevail on the large estates of the *bey*s, where the peasants (*tschiftsi* or *jarischi*) are under the more or less personal supervision of the nobles, some other types of tenancy prevail. In some cases holders of smaller private estates established under Turkish rule work part of the land themselves, and let out the remainder on shares (but ordinarily without additional feudal obligations). A few fixed rentals in kind are to be found, usually where the landlord is an absentee, and in some cases peasants may try to supplement their small holdings by renting lands from the money-lenders of the towns who have come into possession of various farms. There are even cases of peasant ownership of the land with ownership of olive trees on the land by a speculator, who rents the trees to the peasant for two-thirds of the crop. In the virtual absence of formal legislation regulating tenancy, the local variations in the relations between landlord and tenant reflect both long-standing custom and the varying power of the landlord to impose his terms.

Extensive communal pastures, aside from the pasture rights of tenants on the big estates, prevail in the mountainous districts. Some private small holdings have also developed, as well as communal farming (by *sadruge*) of small patches of cultivated land not under the control of *bey*s, *agas*, and town money-lenders. Naturally, where the kinship system retains its economic activities the land is not subject to subdivision, but private holdings as well as some of the hereditary tenancies have been divided through succession. The cultivable (but frequently uncultivated) lands of the plain are almost entirely held by a small number of families, and have been subject to very little division. Some of the larger estates belong to Moslem religious foundations. Such estates, known as *vacoufs*, are equivalent to Western conceptions of mortmain property.

Capital is at a premium for all classes of cultivators. This fact coupled with the severe terms of tenancy on the large estates accounts for the small proportion of cultivable land actually cultivated. Peasants who have gained independence from feudal and semi-feudal tenancies, or who have small holdings derived from old communal lands, are virtually at the mercy of money-lenders. Their crops are sold immediately at harvest and

⁶⁶ See Richard Busch-Zantner, "Ländliche Siedlung in Albanien," *Archiv für Wanderungswesen*, 10:84-86, 1938/1939; Giovanni Lorenzoni, *La questione agraria Albanese*, 2a ed. (Bari: Glus. Laterza e Figli, 1980).

therefore at the lowest prices, and they must seek loans at usurious rates to buy seed, and possibly consumption products or the minimum of equipment. The debt structure therefore may reduce the share of the "independent" cultivator by as much as if he were a share tenant. Moreover, he stands in imminent danger of losing his holding entirely, a virtual certainty under depressed market conditions.

2. In 1930 legislation was adopted that would have expropriated the lands of the large estates down to a residual holding of 40 hectares, or somewhat more if largely grazing land. Apparently there was no intention of applying the expropriation and redistribution to state lands or the feudal holdings of the *bey*s, but rather to the large private holdings of the *agas* and money-lenders. In any event, the legislation remained an expression of official piety but was not put into effect. Apparently it was designed as a political weapon to keep recalcitrant landlords in line with state policy.

3 and 4. From the very scanty materials concerning the economic organization of Albania it does not appear that the large estates employ many agricultural workers. Indeed, agricultural employees are probably limited to a few landless domestics maintained by the more affluent landlords. One may reasonably assume that their position is protected only by custom and by the possibility of commercial or handicraft opportunities in the towns. It is certainly true that the agricultural labor system of Albania is characteristically that of landlords and tenants, not employers and employees.

GREECE

Freedom from the rule of the Turks was brought about in the various regions of modern Greece at quite different times. Thus, the regions of "Old Greece" gained independence early in the last century, while Thessaly, Epirus, and Macedonia did not come under full Greek sovereignty until after the First World War. Yet in each of these regions and periods the withdrawal of Turkish power produced changes in land tenure following a fairly common pattern: breaking up of Turkish feudal domains, and establishment of Greek peasants on lands left vacant by Turkish small holders who migrated to the remaining territory of the Empire.

1. Large estates cultivated by tenants under a semi-feudal system had been effectively abolished in Old Greece, but remained until after the Balkan wars and the First World War in the northern plains and Epirus. The withdrawal of the Turks and the application of land reforms to large estates, including those belonging to the state (many of them former lands held by the Sultan) and to religious foundations, removed most of the feudal aspects of property relations. The land reforms did not, however, create a single type of tenure or abolish tenancy.

Although data on the areas concerned are not available, the agricultural census of 1929—when the reforms were nearly complete—indicates that approximately 5.9 per cent of the cultivators were renters and an addi-

tional 8.3 per cent share tenants.⁶⁷ Holders in emphyteusis (a hereditary leasehold, possibly from the state), holders in usufruct, those with exchangeable titles, titles uncertain, other occupiers, various other forms of tenure, and those with tenure unspecified comprise an additional approximate 11.3 per cent of the total number of cultivators, the balance of 79.5 per cent being owners.⁶⁸

It is evident that the disturbed political history and long chain of development since classical times combined to confuse the property system. The absence of land registers and conflicting claims under various principles of tenure created a heterogeneous collection of property forms. This was accentuated by the fact that not all of the "cultivators" were private individuals, but included organs of the state, municipalities, communes, religious foundations, schools, banks, and various organizations and funds. However, these collective or communal owners comprised less than 1 per cent of the total, although again it is not clear what proportion of the agricultural area was so held.⁶⁹ The land reforms were not made the occasion of a unified code of property regulations, and indeed the application of the reforms in the areas most recently recovered from the Turks was partly responsible for the "uncertain titles" and those listed as "in possession," since the claims to land were practically without documentary evidence.

As in other Eastern European countries, pasture lands, particularly in the mountainous regions, were held communally. The closest approximations to communal holding of cultivated land were to be found in a few cultivators' cooperatives, and in the *domka* system of cultivation in Thessaly and Macedonia, whereby wide areas were planted to the same crops, regardless of ownership. This not only overcame the disadvantages of tiny and extremely dispersed parcels, but also conveniently neglected questions of doubtful boundaries.⁷⁰

Peasant properties (except those few held under some form of limited tenure like emphyteusis or hereditary usufruct) were in Greece traditionally alienable and divided by inheritance. Land distributed to former tenants and laborers, and to refugees, were made both inalienable and indivisible. Except for these holdings, division through successive generations reduced the size of plots to uneconomic size, and scattered the plots held by a single cultivator over substantial distances. An extensive debt structure constantly threatened the titles even to such limited plots; the government in 1930 declared a moratorium on payments of strictly agricultural debts.

⁶⁷ See *World Agricultural Census*, Vol. III, p. 150; Greece, *Statistique Générale de la Grèce, Annuaire Statistique de la Grèce*, 1935 (Athens: [1936?]), p. 113. The qualification "approximately" is necessary not only because of probably incomplete enumeration but also because of some double-counting of those holding lands under two or more tenures.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ See Georges Servakis and C. Pertountzi, "The Agricultural Policy of Greece," in O. S. Morgan, ed., *Agricultural Systems of Middle Europe* (New York: The Macmillan Co., 1933), pp. 137-200, especially pp. 148-152.

2. As already indicated, the reforms following the First World War chiefly affected the regions newly acquired from the Turkish Empire, since other regions were already predominantly characterized by small holdings. The postwar reforms were in principle, however, applied to all sections of the country.⁷¹

State lands (largely composed of lands formerly held directly for the benefit of the Sultan), the lands of corporations and foundations, and the private estates of persons habitually living abroad were to be entirely expropriated. Other private farms were subject to expropriation down to 8-35 hectares, which could be expanded to 50-200 hectares if farmed directly by the owners. Owners were paid at a fixed rate, nominally one-half of the prewar value but actually much less in view of a depreciated currency. It is doubtful whether former Moslem landlords, the Turkish state, or other absentees were paid at all.

Former tenants and laborers living on the land, or their widows and orphans, had first claim on the land. Neighboring tenants or small proprietors could also claim land. Except for garden plots given to artisans, the distributed holdings were supposed to be large enough to support a family. The new holders were required to pay rents fixed by a local representative of the Service of Colonization to the landlord until final distribution was made. Upon definite allocation of the land the holders were not only required to make payment at rates fixed by local commissions, but were required to organize cooperative societies for joint responsibility for all payments due. In addition to the provisions forbidding alienation and division already noted, the new proprietors were required to cultivate the land themselves.

The agrarian reform was complicated by the necessity of making provision for over 1,200,000 refugees from Turkey, Russia, and Bulgaria, a substantial proportion of whom were peasants.⁷² Since these refugees were without capital of any kind, outside loans (under auspices of the League of Nations) were secured to provide for settlement and capitalization of small farms. Even with such assistance the new proprietors were at a serious disadvantage in meeting crop failures and reduced prices.

In general, the agrarian reforms, including the provision for refugees, appear to have forced a slightly more rational use of the soil. Even though the expropriation did not affect all the properties covered by the laws,⁷³

⁷¹ See C. Evelpidi, *Les états balkaniques*, pp. 89-90; C. Evelpedis, *La réforme agraire en Grèce* (Athens: no pub., 1926). (The difference in spelling of the author's name in the two works appears to be due to differences of transliteration to the French.) See also M. J. S. Caramanos, "Greece" in League of Nations, Economic Committee, *The Agricultural Crisis*, Publications 1931. II. B. 12 (Geneva: 1931), Vol. I, pp. 180-189; Servakis and Pertountzi, *loc. cit.*

⁷² Servakis and Pertountzi, *loc. cit.*, p. 150.

⁷³ According to the agricultural census of 1929 there were still at that time 832 cultivators having holdings over 200 hectares (the official maximum). Although these constituted only a little over .1 per cent of the total cultivators, the areas so held would naturally be a much larger proportion of the total. Indeed, by estimating the average area of the holdings as substantially below the midpoint of each class interval according to size and thereby computing the approximate area cov-

the net result was the wider extension of small holdings in all sections of the country, and a gradual transition to more intensive cultivation. The scattering of very small holdings was, however, if anything increased by the parcellation of large estates.

3 and 4. Agricultural wage labor was never strongly established even on the large estates in Greece, since the estates were rarely operated as a single productive unit. Rather, tenants comprised the bulk of farm workers who did not own land. This situation was not appreciably affected by the agrarian reforms, except for a possible further reduction of employment opportunities. Despite widespread rural poverty, industrial and especially commercial development was much more advanced than in other Balkan countries. Thus, those unemployed on the land were able to migrate to the towns with a little more success than that experienced by Yugoslav or even Bulgarian peasants.

Census data for Greece give only a classification by "profession," and not by status as owners or employees. However, the number of landless agricultural laborers was certainly small.⁷⁴ There is no evidence of any formal legislation governing labor relations, employment conditions, or social insurance for agricultural workers.

ITALY

The land tenure arrangements in Italy reflect a long period of institutional development and change, but with few marked regional differences explainable in terms of divergent political systems. Although the predominance of large estates or small peasant holdings during the interwar period varied greatly from one part of the country to another, the differences seemed to reflect topography, climate, and soil variation as much as they did variations in official policy.

1. Italy is perhaps the classic European home both of the latifundia (operated by the owner or his agent with hired worker) and of the large estate operated primarily by share tenants. Although the southern part of the peninsula and the island of Sicily are the most outstanding regions of large agricultural enterprises, the large estate is to be found throughout the country. Similarly, the mountainous north and parts of the more broken coastal regions are predominantly characterized by small peasant

ered by large holdings, it would appear that large estates still comprised about one-half of the total cultivated area in 1929. (Based upon data in *Annuaire Statistique de la Grèce*, 1935, pp. 108, 113.) It should be noted, however, that the redistribution was not officially terminated until 1932, and that the amount of cultivated land was substantially greater in subsequent years than in 1929 (38.8 per cent greater by 1934; see *ibid.*, p. 108). Since the various forms of land amelioration and reclamation, as well as the bringing of grazing lands under cultivation, probably extended small holdings rather than large ones, the immediate prewar distribution of cultivated land was undoubtedly more favorable to small holdings.

⁷⁴The agricultural census of 1929 enumerated 950,591 "private" cultivators (owners, tenants, etc.) and by the general census of 1928 there were 1,293,398 persons aged 10 and over engaged in agriculture (exclusive of stock-raising, chase, and fishing). The difference would seem to be comprised almost entirely of members of the cultivators' families. (See *ibid.*, pp. 5-8, 113.)

holdings, but such tiny farms may also be found adjoining the vast plantations in the south.

The modern remnants of feudal tenures lasted well into the interwar period, most obviously in the case of share tenants required to render various feudal labor dues as well as a share of the produce to the landlord. Various servitudes against the landlord, especially the use of woodlands and pastures, also persisted into the late 1920's and early 1930's. The abolition of the feudal reciprocities took much the same form as the earlier eradication of feudalism in England: enclosure of the common lands for the benefit of the landlord and the abrogation of the peasants' rights. However, some payments were made, either in the form of monetary quittances or in the form of allocation of a portion of the land to the communes.⁷⁵

Tenancy in one form or another was very widespread in Italy. According to the agricultural census of 1930, 26.1 per cent of the holdings comprising 28.5 per cent of the agricultural area were leased or held in share tenancy. An additional 14.8 per cent and 14.0 per cent, respectively, were under mixed forms of tenure.⁷⁶ In round numbers, therefore, only about 60 per cent of the number and area of farm holdings were operated by the owners exclusively. Fixed rentals and share tenancies are about equally divided.⁷⁷ The share tenancy (*métayage*) system is most highly developed in the central provinces.

A peculiar form of tenancy—actually a number of related forms—is represented by the “collective tenant farm.” The common feature of such undertakings is a collective rental or tenancy contract between an organization of workers, tenants, or small proprietors, and the land owner (frequently some form of semi-public or welfare organization) whereby the land is farmed by the organization. The distribution of holdings and produce within the organization may then vary from fixed or share wages in cash or kind to what amounts to sub-tenancy. Most frequently, however, the members (*compartecipanti*) of such farming collectives are in the approximate position of farm workers.

The actual range of contractual provisions in land tenancies and the minor and mixed gradations between landless day laborers and owners or cash tenants are so great as to defy brief summary. This remains true in spite of the semblance of uniformity provided by the Fascist corporative organization. The land tenures are of much more ancient vintage than Fascism, and many of the complexities will certainly survive it. In fact, the influence of the “syndicates” and “corporations” was primarily confined

⁷⁵ A good brief summary of property relations in Italian agricultural organization under Fascism is given by Carl T. Schmidt, *The Plough and the Sword: Labor, Land, and Property in Fascist Italy* (New York: Columbia University Press, 1938), Chap. VII, “Peasants and Proprietors.” See also Paolo Albertario, “Le ‘fattorie’ dell’ Italia Centrale,” *Annali di Statistica*, Serie VII, Vol. III: 99-191, 1939; ECRL, No. 4, pp. 25-31; Guglielmo Tommasi di Vignano, *Distribuzione della proprietà e grandezza dell’ impresa nella agricoltura italiana* (Rome: Tip. Ugo Quintili, 1938).

⁷⁶ *World Agricultural Census*, Vol. III, pp. 214-215.

⁷⁷ *Ibid.*

to determining the more detailed provisions of the contracts and in preventing independent action upon the part of workers and tenants.

Despite the importance of tenant farming, the large estate operated directly by the owner or his agents assures the continuance of extensive employment of wage labor. Although large holdings (that is, enterprises under unified and direct supervision) over 100 hectares in extent represent only about 0.6 per cent of the total number of undertakings, they occupy over one-third (34.7 per cent) of the agricultural area.⁷⁸ It should be noted that *this is exclusive of large properties broken up into farms under fixed rentals or share tenancies*, which are listed as small holdings. It becomes clear, therefore, that the concentration of agricultural property in Italy is very great.

As already noted, communal ownership of, or rights in, pasture lands and wood lots has been restricted through the extension of enclosures, but still persists. Communal pastures are especially important in the north, where the land owned in common serves to supplement the very small holdings. The closest approximation to communal farming of cultivated land is to be found in the "collective tenant farm" already discussed.

Equal division among heirs applies to nearly all small privately owned holdings, and has resulted in the usual splitting up and scattering of tiny plots. Large estates belonging to the church or similar foundations are of course protected from subdivision by some sort of mortmain provisions. Large private estates have become increasingly subject to division or transfer, but the process has not gone far. Some hereditary leaseholds and holders in usufruct still exist, and these tenures for the most part prevent division. The Fascist doctrine of increasingly tying the peasant to the soil resulted chiefly in restricting the independence of the landless worker, but not in entailing peasant holdings or developing genuinely hereditary share tenancies (although some have always been hereditary in practice). The extension of indebtedness, only partly abated under Fascism, has contributed even further economic insecurity to peasant holdings.

2. The interwar period in Italy was not marked by an abrupt agrarian reform. On the contrary, the influence of the government was toward stabilization and entrenchment of existing concentrations of ownership. The Fascist leadership made a great deal of the mystical strength of the farmer's attachment to the land, and claimed in its ideology to be promoting a stable and independent peasantry. In the place of redistribution of land the government offered land reclamation, especially drainage of the marshes, and internal resettlement. Neither the doctrines of a peasant economy nor the actuality of extensive reclamation appreciably changed the distribution of property. A projected land reform affecting the Sicilian latifundias (but not the share-tenanted properties), immediately before the Second World War, does not seem to have been carried out.⁷⁹

⁷⁸ ECRL, No. 4, pp. 27-28.

⁷⁹ See Giovanni Lorenzoni, *Trasformazione e colonizzazione del latifondo siciliano* (Firenze: Casa ed. poligr. univ. di Cya, 1940).

Before the First World War, and to a lesser extent thereafter, remittances from emigrants financed the purchase of some small farms from large landowners. This minor movement toward redistribution of property was also fostered in behalf of war veterans by the National Organization of Ex-Service Men. This organization was granted corporate status under the Fascist regime, and gained some land holdings through cession from the state and by direct purchase. Agricultural laborers were in turn allowed to become tenants and possibly purchasers of the land.⁵⁰ The total effect of all these transfers of property has been small.

8. The existence of large commercial farms in Italy requires the extensive employment of agricultural workers, over and above share tenants in various positions of subservience. However, no clear-cut categories of farm workers can be found, the number of types depending largely on how finely distinctions in position and security are drawn. Thus, the position of share tenants may vary from one scarcely distinguishable from that of permanent laborers, whose pay consists in a share of the produce, to relatively independent farmers owning some stock and equipment and paying a fixed proportion of the crops to the landlord. The former situation is more common than the latter, a fact confirmed by the grouping of share tenants with agricultural workers in the Fascist corporate organization. Thus, although the accompanying table shows only 26.7 per cent of those gainfully occupied in agriculture to be landless workers, those indicated as having a mixed status (cultivators of small plots who must also depend on wage labor) and most of the share tenants must be considered as essentially dependent workers. The total of these groups approaches one-half of the occupied agricultural population.

The groups of workers who may be regarded as relatively "permanent" include farm servants, who are on annual contract to do any work assigned, and are usually paid principally in kind, including lodging.⁵¹ Other permanent workers are more specialized in occupation, but are also paid partly in lodging, various allowances, and possibly by some share of the produce with which their activities are almost directly linked. Day labor is partly on a short-time or seasonal basis, and may be arranged by individual contractual agreement. More frequently, however, it is covered by some form of collective agreement. Such agreements may provide for off-season employment on improvement or reclamation projects. Intermediate between individual agreements and large-scale collective contracts are various forms of family contracts. The latter may not specify any minimum period of employment but bind the family to be available when needed and the employer to give first preference to those families so bound. The whole tendency of Fascist policy was to stabilize and solidify

⁵⁰ ECRL, No. 4, pp. 26-27.

⁵¹ See Bruno Biagi, "The Regulation of Collective Employment Relations in Agriculture in Italy," *International Labour Review*, 29:309-319, March, 1934; also International Labour Office, *The Representation and Organisation of Agricultural Workers*, pp. 161-168; ECRL, No. 4, pp. 28-31; Schmidt, *op. cit.*, Chap. VI, "Landless Farm Workers."

TABLE 9

**Number and Percentage Distribution of Farm Workers of Various
Classes in Italy, 1936¹**

Classes of Workers	Number	Per Cent
 Holders and Their Families^a	6,231,449	71.63
Owners	2,870,972	33.00
Tenants in Usufruct	26,133	.30
Tenants in Emphyteusis	40,133	.46
Renters	796,749	9.16
Share Tenants	1,787,552	20.55
Mixed Tenures	709,910	8.16
 Employees and Laborers	2,322,633	26.70
Directors and employees	20,882	0.24
<i>Compartecipanti</i>	141,281	1.62
Day laborers	1,766,929	20.31
Annual laborers	378,804	4.36
Non-agricultural laborers	14,737	0.17
 Mixed Statuses^b	138,865	1.60
Holders and day laborers	125,176	1.44
Holders and annual laborers	985	0.01
Holders and <i>compartecipanti</i>	12,704	0.15
 Status Unknown	5,960	0.07
 Total	8,698,907	100.00

^a Members of the family assisting the head are included in the figures for each group.

^b Those with mixed statuses are listed in the source under six classifications, apparently according to the relative importance of the source of income. The six are here combined into three, thus neglecting such relative weight. Thus "holders and day laborers" includes both those who are primarily owners or tenants and those who are primarily day laborers.

¹ Based upon data in Italy, Istituto Centrale di Statistica del Regno d'Italia, *Annuario Statistico Italiano*, 1941 (Rome: 1941), p. 78.

the relations between employer and employee, not only by increasing collective agreements but by transferring day laborers into some type of permanent workers, preferably with wages consisting of a share of the produce.

Only the official hierarchy of labor organization was recognized by the

Fascist regime; other associations either became incorporated into the official structure or lost any semblance of bargaining power. Mobility of any sort was discouraged, and the power of group action for economic improvement was strictly limited by the overwhelming power of the state. Although the corporate hierarchy was officially tripartite in arrangement (employers, employees, and state officials), the lack of effective representation of the lower ranks of labor and the undoubted favoritism by the governmental officials for the vested interests of the landlords made the "corporative" structure a *control* device without effective responsibility to those whose interests were presumably represented.

4. Industrial expansion in Italy has not been sufficiently rapid to provide employment for a rapidly growing rural population. The property distribution and agricultural labor system in Italy are such that the lack of economic opportunity for rural manpower does not result in "hidden unemployment," as is common in most Eastern European countries, but in overt unemployment on the land.⁸² Even during the planting and harvest seasons the backlog of unemployed workers was substantial. Agricultural workers have not been covered by unemployment insurance, but the government attempted to relieve the situation through employment exchanges, provision of minimum numbers of employees for farms according to area (the "tax in workers"), encouragement of seasonal migration, public works (including the land reclamation projects), and, during the later interwar years, military mobilization. The difficulties of providing employment were enhanced by the virtual cessation of emigration, which had previously reached tremendous proportions. The economic position of workers and peasants also deteriorated owing to a diminution in remittances from members of the family abroad.

For a closely controlled economy, and particularly for one strongly accenting the development of agriculture, the Fascist regime gave remarkably little attention to legislation protecting the farm worker. Wages were fixed by collective agreement, but there was no official minimum. Hours of work were theoretically limited to eight per day, but this maximum was subject to numerous and important qualifications, and could be spread on an annual average to allow very long hours during the growing and harvesting season.

Some social insurance benefits applied to agricultural workers: old-age, sickness, accident, and tuberculosis. The benefits paid were small and apparently somewhat uncertain. The government tapped the state insurance funds as a source of credit, and part of the collected funds had to be regarded as taxes without direct and assured benefits. Various official and semi-official organizations fostered some additional insurance (including maternity insurance) as well as recreation and sports. These organizations also served as media of propaganda for the Fascist organization.

⁸² See Schmidt, *op. cit.*, pp. 118-124.

PORTUGAL

The property and tenure systems of Portugal, and especially the concentration or dispersion of property ownership, show marked regional differences. The regional differences undoubtedly reflect differences in past political influences, but in a much less pronounced fashion than in many of the newly unified states of Eastern and Southeastern Europe. This circumstance is of course partly explainable on the grounds of long-standing political independence, approximately within the present boundaries, allowing previous differences among regions to become blurred. Without attempting to assign weights to the influences, it is safe to say that the observable differences are due both to different institutional histories and to different topographical characteristics. Thus, the plains of the south lend themselves much more readily to extensive cultivation by large economic units than do the mountains and valleys of the north. It is equally true that the southern regions were exposed to a full-blown agrarian feudalism that developed into widespread tenancy, whereas the northern areas remained relatively free from feudal tenures and developed along lines of communal ownership and small private holdings.

1 and 2. A country having a long political history like Portugal could scarcely avoid a mixed institutional development. This is quite clear in the case of property arrangements. The collapse of feudalism in those regions where it had been most highly developed was gradual, and without a major defeat for the landlords. Its modern counterpart is the extensive development of tenancy, especially in the south-central provinces of Portalegre, Evora, Setubal, and Beja. These tenancies are of various kinds, most frequently involving fixed rentals in cash or kind. There are, however, a number of share tenancies.⁸⁸ A form of tenancy that is of minor importance and apparently disappearing is the *foro*, which is a form of inheritable leasehold, indivisible but alienable. Whatever the type of tenancy, the direct supervision of the landlord is limited and infrequent. The owners of rural estates apparently prefer life in the towns and cities, even at the expense of considerable loss in production through inadequate management. In fact, the practice of fixed rentals and absentee ownership has apparently resulted in a progressive depletion of capital as represented in natural fertility of the soil. The technical and economic organizations characteristic on the Portuguese large holdings are among the poorest in Europe. Much of the land lies fallow, often for a number of years.

Communal ownership, especially of pasture land, is frequent in the north. The same region is marked, however, by tiny peasant holdings sub-

⁸⁸ Unfortunately, precise data on the distribution of property or holdings are not available for Portugal. Not even land utilization can be determined at all accurately, since a general cadastral survey seems never to have been taken. Apparently the internal political stability has been sufficient never to have given opportunity for widespread disputes concerning boundaries, contradictory claims to various rights of use, etc. The present rather limited summary is mainly based on Portugal, Ministère des Affaires Étrangères, *Le Portugal et son activité économique* (Lisbon: 1932), pp. 81-88; E. Martinez de Bujanda, "Agrarian Organisation in Portugal," *International Review of Agriculture*, 29:272E-280E, June, 1938.

ject to further subdivision with each generation. The larger estates are very infrequently divided, although it is not clear whether they are under formal entail. The mortmain estates of the church are certainly extensive, and provide a bulwark of resistance against extensive conversion of tenancies into properties. The conservative influence of the church, the influential position of the landlords, the continued possibility of some diversion of rural population into commerce and trade, and the avoidance of embroilment in the European wars of the present century have combined to prevent any radical reform in land distribution. What the influence of the "corporate" regime on rural tenures may be is not yet clear.

3 and 4. Despite the wide extension of tenancy in those regions characterized by large concentrations of property in land, some large undertakings are managed on a commercial basis with hired workers. Because of the importance of labor-intensive crops, especially wine-grapes and olives, in the agricultural organization, the existence of a fairly large number of agricultural employees is not in fact surprising. Although the available data do not distinguish various classes of farm workers, and indeed do not indicate how small holders (owners or tenants) who also work for wages have been classified, Table 10 indicates sufficiently the sizable proportion of those gainfully occupied in agriculture who depend at least in part upon wages.

TABLE 10

Number and Percentage Distribution of Farm Workers of Various Classes in Portugal, 1930¹

Classes of Workers	Number	Per Cent
Holdings and Their Families	1,012,727	55.1
Holders	413,154	22.5
Members of the Family	599,573	32.6
Employees	823,853	44.9
Total	1,836,580	100.0

¹ Based upon data in Portugal, Instituto Nacional de Estatística, *Anuário Estatístico de Portugal, 1936* (Lisbon: Imprensa Nacional, 1937), p. 21.

Permanent agricultural workers are employed on large estates devoted to stock-raising, and on farms devoted to cereal crops, olive orchards, vineyards, and fruit crops. The permanent worker is also frequently a tenant, and his position thus varies from that of primarily a tenant farmer with occasional employment by the landlord, to that of being primarily dependent on wages but having also a small plot of ground in tenancy, possibly

as part of his pay—and thus closely approximating the position of the Central European deputatist.⁸⁴

Since 1933 the corporate principle of political and economic organization has been in effect in Portugal. Thus private bargaining and contract in agricultural labor have been virtually abolished in favor of tripartite hierarchical syndicates that attempt to specify the terms of employment.⁸⁵ Although this type of economic organization probably gives some greater security to landless workers and may have increased the rational use of the soil, its ideology and effect are clearly conservative and therefore favorable to owners of large estates, whether private or clerical.

SPAIN

The Spanish institutional structure is at present difficult to analyze, since the effects of a revolution and counter-revolution still are not clear. This circumstance has especial bearing on the problem of determining the agricultural property and labor systems, since the revision of the old regime was a fundamental aim of the Republican government, and a major factor in promoting the successful counter-revolutionary movement. Although it is certainly not true in any absolute sense that the Republican regime had no lasting effect on the institutional structure, it seems safe in general to assume that the "nationalist" regime established as nearly as possible the *status quo ante*.

1. Several outstanding features of property distribution and utilization in Spain deserve comment. One of these features is the marked inequality of distribution of agricultural properties, accentuated by a regional concentration of tremendous estates in the south and southwest (Andalucia and Extremadura).⁸⁶ Another feature is the low level of technique prevailing on nearly all types of farms, and pointed up by a failure to make any use of substantial portions of large estates. Closely related to the foregoing is the fact that the owners of the large estates are commonly absentees, preferring a lesser income without effort so that they may live in the cities to a more effective management of their holdings. Finally, in perhaps no other European country is the church so important a landowner, or so solidly entrenched in political power. Because mortmain properties are in principle inalienable, the concentration of land under the control of the Church increases with each new bequest and never decreases.

Purely feudal tenures are no longer in evidence in Spain, although the property rights of the Spanish nobility under the kingdom were of a quasi-feudal character, consisting primarily of hereditary grants nominally be-

⁸⁴ See International Labour Office, *The Representation and Organisation of Agricultural Workers*, pp. 191-192.

⁸⁵ See E. Martinez [de Bujanda], "Corporate Organisation of Agriculture in Portugal," *International Review of Agriculture*, 29:78E-86E, February, 1938.

⁸⁶ The present summary is based mainly on the following sources: E. Martinez de Bujanda, "Agrarian Reform in Spain," *International Review of Agriculture*, 24:118E-180E, April, 1933; Ferdinand Kriessmann, *Das spanische Agrarproblem und die Versuche zu seiner Lösung*, Tübinger Staatswissenschaftliche Abhandlungen, 4. Folge, Heft 7 (Stuttgart: W. Kohlhammer, 1934).

longing to the crown. Since this did not limit the rights of the landlord in the actual management of the estate, or extend through subinfeudation to hereditary tenancies with feudal rights on the part of the actual cultivator, the chief effect of this remnant of feudalism was to reduce or eliminate the tax burden borne by large landowners.

Although exact figures are not available, it does not appear that tenancy is a common mode of property arrangement. Cash or other fixed rentals are few, and share tenancy is also relatively unimportant, except in Catalonia. The large estates are primarily *latifundia*, that is, dependent upon various types of hired agricultural labor. The marked importance of the large estates before the agrarian reforms undertaken under the Republican regime (and therefore presumably at the present time, since the redistributions were mainly cancelled), is evident from the fact that some four-hundredths of one per cent of the total holdings comprise about one-fourth of the total agricultural area.⁸⁷

Communal ownership of pasture lands is frequent, especially in those northern regions where cultivated land is held in extremely small units. The Republican government contemplated the establishment of collective ownership of expropriated *latifundias* in order to prevent uneconomic division. The fate of these schemes is uncertain, but they were probably abolished by the Franco government.

The extreme disparity in size of farm establishments has been fostered by differences in provision for succession. The quasi-feudal tenures applying to the large estates have placed them in effective entail. The mortmain estates of the Church have been similarly protected. On the other hand, private peasant properties are subject to equal division among heirs. The effect of the differences is to increase the disparity in size of holdings with each succeeding generation.

Lack of capital among small landowners has created an extensive debt structure, which serves further to concentrate ownership of land through foreclosure and subsequent operation by absentee owners.

2. The land reforms undertaken by the Republican government appear now to be mainly of historical interest. For this reason the provisions of the reform legislation, which were about as complex as any redistribution schemes undertaken in Europe during the interwar years, need be reviewed here only in the most general terms.

Lands belonging to the Spanish crown and those of the nobility who had been most opposed to the Republican government were to be completely expropriated without compensation. Other estates above certain minima determined by region, land use, and so on were subject to expropriation with partial compensation. The mortmain estates of the Church were

⁸⁷ Based upon data given by Martínez de Bujanda, "Agrarian Reform in Spain," *loc. cit.*, pp. 116E-117E. From the same source it appears that 98 per cent of the holdings are under 10 hectares, but include only 86 per cent of the agricultural area. A large proportion of these small holdings are under 1 hectare.

largely confiscated.⁸⁸ Communal pastures, rough pastures privately owned, and certain "model farms" were exempted from expropriation.

Those who were to benefit by the reforms included, in order, landless farm workers, societies of agricultural workers, small landowners, and renters or share tenants.

Since the reform was intended to cause no interruption of production, the state acted as landlord, collecting rents or paying workers until final disposition was made. Improvement through irrigation, intensification of land use, and a stabilized credit situation were all contemplated as part of the reform.

Whether the reforms had any lasting effect, such as placing in cultivation additional lands formerly part of the large estates, is not clear. It is certain that most of the newly established peasant owners were dispossessed after the successful counter-revolution and that the pre-reform situation has been re-established so far as the general institutional structure is concerned.

3. and 4. For reasons already noted, the present situation of agricultural workers in Spain is difficult to assess. The difficulty is enhanced by the absence of adequate occupational statistics showing the number and proportion of those gainfully occupied in agriculture who must depend on wage labor. So far as economic position is concerned, the holders of tiny plots may be grouped with employees of the latifundias, most of the share tenants, and others with little or no independent capital or security. Indeed, the small holders must also seek wage labor to supplement the income from the meager produce derived from their plots.⁸⁹

Although the Republican government contemplated not only increased peasant proprietorship but also various measures for increased social security, it is doubtful if the farm workers are given much special protection at present. They seem to be nominally represented in the "corporate" economy, but without visible benefits.

⁸⁸ In addition to the sources cited in note 86, above, see E. Martínez de Bujanda, "The Development of the Agrarian Reform in Spain," *International Review of Agriculture*, 26:252E-268E, July, 1935.

⁸⁹ See International Labour Office, *The Representation and Organisation of Agricultural Workers*, pp. 193-194; Angel Lera de Isla, *La revolución campesina; Hambre y miserias del proletariado rural* (Madrid: Edición Biblioteca Atlántico, 1931).

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APPENDIX IV

TABLES SHOWING INDUSTRIAL RESOURCES AND DEVELOPMENT

THIS Appendix is a technical supplement to the last section of Chapter IV. Table 1 shows the ratio of males gainfully occupied in industry to those gainfully occupied in agriculture, as a measure of economic modernization in the broad sense of industrialization plus occupational specialization and market development. Commercial, financial, and service (including professional) occupations constitute a residual category measured indirectly by this ratio. Table 2 compares the rank order of certain European countries as shown by two indexes of industrial development, and Table 3 shows weighted indexes of manufacturing production from a common base year for two major European regions. Tables 4-8 summarize data on the production and known reserves of certain power resources (coal and petroleum) and iron ore in Eastern and Southern Europe.

TABLE 1

Ratio of Males Gainfully Occupied in Mining and Industry to Males Gainfully Occupied in Agriculture, European Countries,^a around 1930

Countries	(1) Males in Agriculture ¹ (000's omitted)	(2) Males in Industry ² (000's omitted)	(3) Ratio: [(2)/(1)] x 100
Albania	240	20 ³	8.33
Austria	627	814	129.82
Belgium	489	1,426	291.62
Bulgaria	1,173	229	19.52
Czechoslovakia	1,484	1,939	130.66
Denmark	392	865	93.11
Estonia	204	71	34.80
Finland	635	186	29.29
France	4,394	5,155	117.32
Germany	4,552	10,461	229.81
Greece	993	856 ⁴	85.85
Hungary	1,552	749	48.26
Ireland	550	165	30.00
Italy	6,475	3,998	61.75
Latvia	375	118	31.47
Lithuania	546	57	10.44
Netherlands	529	1,066	201.51
Norway	264	249	94.32
Poland	5,636	2,019	35.82
Portugal	999	879 ⁵	87.94
Roumania	4,064	618	15.21
Spain	3,728	2,450 ⁶	65.72
Sweden	697	741	106.31
Switzerland	858	645	182.72
United Kingdom	1,245	7,338	589.40
Yugoslavia	3,219	598	18.42
Europe, Total ^a	45,415	42,207	92.94

^a Excluding Andorra, Liechtenstein, Luxembourg, Monaco, San Marino, Turkey, and USSR.

¹ From Appendix I, Table 18.

² Source, unless otherwise indicated, is International Labour Office, *Year Book of Labour Statistics*, 1941 (Montreal: 1942), pp. 9-17.

³ Estimate.

⁴ Greece, Statistique Générale de la Grèce, *Annuaire Statistique de la Grèce*, 1935 (Athens: [1936?]), p. 48.

⁵ Portugal, Instituto Nacional de Estatística, *Anuário Estatístico de Portugal*, 1936 (Lisbon: 1937), pp. 21-23.

⁶ Spain, Dirección General de Estadística, *Anuario Estadístico de España*, 1942 (Madrid: 1942), pp. 86-109.

TABLE 2

Comparison of Rank Order of Certain European Countries in Two
Indexes of Industrial Development

Per Capita Value of Manufacturing Production ¹	Per Capita Value of Machinery ²
Sweden	United Kingdom
United Kingdom	Germany
Belgium	Belgium
Germany	Netherlands
Denmark	Sweden
Netherlands	Denmark
Finland	Austria
France	France
Austria	Czechoslovakia
Czechoslovakia	Italy
Italy	Finland
Hungary	Hungary
Spain	Spain
Poland	Poland
Roumania	Roumania

¹ From Column 2 of Table 11 in the text.

² From Eugene Staley, *World Economy in Transition* (New York: Council on Foreign Relations, 1939), p. 70, based upon data around 1925 given by Ernst Wagemann, *Struktur und Rhythmus der Weltwirtschaft* (Berlin: Reimar Hobbing, 1931), pp. 406-406.

TABLE 3

Index of Manufacturing Production in Certain European Countries, 1936-1938

(1913 = 100)

Countries	Index of Production ¹	Weight ²	Weighted Average ³
<i>Northern and Western Europe</i>			
Austria	124.9 ^a	1.67	139.56
Belgium	119.5	4.85	5.20
Denmark	198.7	2.01	8.99
Finland	816.3	1.84	4.24
France	118.4	14.72	17.43
Germany	188.3	84.45	47.64
Netherlands	197.1	3.68	7.25
Norway	252.3	1.00	2.52
Sweden	217.7	4.34	9.45
Switzerland	76.0 ^b	1.67	1.27
United Kingdom	124.4	30.77	38.28
<i>Eastern and Southern Europe</i>			
Czechoslovakia	184.0	16.92	146.23
Estonia	145.3	1.54	2.24
Greece	209.7	3.08	6.46
Hungary	124.6	6.15	7.66
Italy	175.3	88.46	67.42
Latvia	145.2 ^c	3.08	4.47
Poland	93.2	10.77	10.04
Roumania	156.0	4.62	7.21
Spain	117.4 ^{a d}	15.38	18.06

^a Includes mining.

^b Uncertain figure, probably too low.

^c 1910 = 100.

^d 1931-1935.

^e By the method of a "weighted arithmetic mean" only the total figures for each region are significant.

¹ From unpublished data developed by the Economic, Financial and Transit Department of the League of Nations.

² The weights assigned are the proportional shares of world value of manufacturing production for each country, converted to a basis of 100 for the total of each region. Source is the same as indicated in preceding note.

TABLE 4

Production of Coal and Lignite in Eastern and Southern Europe,
Annual Average, 1931-1935¹
(In Thousands of Metric Tons)

Country	Estimated Population, 1933, in Thousands	Coal		Lignite	
		Annual Average Production, 1931-1935	Production per Thousand Population, in Tons	Annual Average Production 1931-1935	Production per Thousand Population, in Tons
Bulgaria	6,020	87	14.5	1,546	256.8
Czechoslovakia	15,020	11,801	752.4	15,762	1,049.4
Greece	6,690	—	—	108	16.3
Hungary	8,841	810	91.6	6,178	698.2
Italy	42,217	828	7.8	415	9.8
Poland	33,024	30,447	922.0	80	0.9
Portugal	7,090	202	28.5	18	2.5
Roumania	18,800	285	12.5	1,537	81.8
Spain	24,242	6,579	271.4	816	18.0
Yugoslavia	14,514	388	26.7	4,068	279.9
Germany ^a	66,178	128,928	1,948.1	188,420	2,016.1

^a Including the Saar.

¹ Production data are from *Statistical Year-Book of the League of Nations*, 1936-37, pp. 127, 128; estimated populations are from *ibid.*, p. 22.

TABLE 5

Estimated Coal and Lignite Reserves in Eastern and Southern Europe¹

(In Millions of Metric Tons)

Country	Coal		Lignite	
	Actual Reserve	Probable Reserve	Actual Reserve	Probable Reserve
Bulgaria	—	30	—	858
Greece	—	—	10	—
Hungary	4	109	854	1,250
Italy	1	148	51	48
Poland	—	2,525	—	—
Portugal	20	—	—	—
Roumania	—	—	8	86
Spain	5,826	2,175	894	878
Yugoslavia	2	48	1,758	2,402

¹ From *The Coal Resources of the World*, Twelfth International Geological Congress, as reproduced in Elwood S. Moore, *Coal*, 2nd ed. (New York: John Wiley and Sons, 1940), pp. 421-422. The figures are estimates made around 1918, based on seams more than one foot thick lying up to 4,000 feet deep, and more than two feet thick lying 4,000 to 6,000 feet deep. The data are incomplete for countries established by the peace treaties following the First World War.

TABLE 6

Production of Petroleum in Eastern and Southern Europe, Annual Average, 1931-1935¹

(In Thousands of Metric Tons)

Country	Annual Average Production, 1931-1935	Estimated Population 1933, in Thousands	Production Per Thousand Population, in Tons
Czechoslovakia	20	15,020	1.3
Italy	21	42,217	.5
Poland	556	83,024	16.8
Roumania	7,666	18,800	407.8
Germany*	289	66,178	4.4

* Including the Saar.

¹ Production data are from *Statistical Year-Book of the League of Nations*, 1936-37, p. 126; estimated populations are from *ibid.*, p. 22.

TABLE 7

Estimated Oil Reserves in Eastern and Southern Europe,
around 1940¹

Country	Estimated Reserve (Millions of Barrels)
Albania	41
Czechoslovakia	1
Hungary	75
Italy	1
Poland	80
Roumania	392

¹ From "Post-War Section," *Oil and Gas Journal*, November 18, 1944.

TABLE 8

Production of Iron Ore in Eastern and Southern Europe, Annual
Average, 1931-1935¹

(In Thousands of Metric Tons)

Country	Annual Average Production, 1931-1935	Estimated Population 1933, in Thousands	Production per Thousand Population, in Tons
Czechoslovakia	760	15,020	50.6
Greece	144	6,630	21.7
Hungary	90	8,841	10.2
Italy ^a	520	42,217	12.3
Poland	220	83,024	6.7
Portugal	8	7,090	0.4
Roumania	52	18,800	2.8
Spain ^a	2,298	24,242	94.8
Yugoslavia	125	14,514	8.6
Germany ^b	8,388	66,178	51.2

^a Including a small quantity of manganiferous iron ore.

^b Including the Saar.

¹ Production data are from *Statistical Year-Book of the League of Nations*, 1936-37, p. 135; estimated populations are from *ibid.*, p. 22.

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INDEX

- Agrarian reforms, 80, 99-108, 210-278 *passim*
 Agricultural production, index of, definition, 29-31; explanation, 145-169; limitations of index, 81-84, 178-180; comparison of indexes, 40-42, 179-180; per person dependent on agriculture, 84-89, 182-192; per male engaged in agriculture, 85, 89-92, 182-192; per area, 85, 42-47, 91; differential costs, 48-54; as measure of overpopulation, 61-75
 Agricultural workers, 80, 86, 87, 88-89, 210-278 *passim*
 Albania, estimated population, 19; population dependent on agriculture, 26, 188, 197; indexes of agricultural production, 85, 86, 45, 50, 51, 53, 54, 115-116, 181, 188, 193; "surplus" agricultural population, 63, 66, 71, 74, 205, 207; arable land left fallow, 93; indexes of industrial development, 126, 275; density of agricultural population, 197; land tenure, 252-254; oil reserves, 280
 Albertario, Paolo, 258, 268
 Allaria, Giovanni B., 271
 Arcari, Paola Maria, 271
 Austria, Bundesamt für Statistik, cited, 194; Statistisches Landesamt, cited, 194
 Austria, population dependent on agriculture, 26, 184, 197; indexes of agricultural production, 85, 86, 87, 45, 48, 50, 51, 53, 181, 193, by district, 184; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 197
 Barbieri, Benedetto, 152, 153, 288
 Basch, Antonín, 117-118, 128, 281
 Bauer-Mengelberg, Käthe, 153, 283
 Beal, Edwin G., 142, 290
 Belgium, Ministère de l'Intérieur, Office Centrale de Statistique, cited, 167, 194
 Belgium, population dependent on agriculture, 26, 184, 197; indexes of agricultural production, 85, 86, 87, 42, 44, 50, 51, 53, 181, 193, by district, 184; indexes of industrial development, 124-126, 275-277; density of agricultural population, 197
 Bellucci, Vincenzo, 271
 Bennett, M. K., 151, 283
 Berberoff, T., 271-272
 Bercaru, Valeriu, 288, 268
 Blagt, Bruno, 260, 268
 Bičanič, Rudolf, 90, 98, 117, 283, 289
 Bienstock, Gregory, 107, 114
 Birnieks, J., 283
 Block, Herbert, 290
 Bloss, Esther, 281
 Böker, H., 59-60, 117, 122, 228, 230, 231, 268, 283
 Bohuš, Vlácil, 287
 Brandt, Karl, 91, 117, 283
 Brdlík, Vladislav, 228, 231, 268, 269-270, 271, 285-286
 Brinkmann, Carl, 102, 211, 283
 Bülow, F. W. von, 59-60, 117, 122, 219, 221, 228, 230, 231, 268, 283
 Bürger, Erhard Gottfried, 272
 Bulgaria, Direction Générale de la Statistique, cited, 82, 194, 251, 252
 Bulgaria, estimated population, 19; population dependent on agriculture, 26, 188, 197; indexes of agricultural production, 85, 86, 45, 50, 51, 53, 115-116, 181, 193, by district, 188; "surplus" agricultural population, 63, 66, 71, 205, 207; arable land left fallow, 93; indexes of industrial development, 124-126, 275; density of agricultural population, 197; land tenure, 250-252; agricultural workers and labor relations, 252; production of coal, 278; coal reserves, 279
 Busch-Zantner, Richard, 253, 268
 Buske, Ernst, 272
 Capitalization, of agriculture, 89-90, 92, 97, 101-102, 104, 116-117; of industry, 182-183
 Caramanos, M. J. S., 256, 268
 Clark, Colin, 41-42, 60, 96, 178-180, 282, 283
 Clemen, Rudolf A., 167, 283
 Coale, Ansley J., 20, 75, 115, 289
 Collectivization, agricultural, 106-108
 Com, B., 291
 Comes, Simone, 290
 Conrad, Holly H., 283
 Consolidation, of agricultural plots, 105-106
 Constanzo, G., 282
 Crop basket, 80, 155-156
 Crop Unit, defined, 80-81; explained, 154-169
 Czechoslovakia, L'Office de Statistique de la République Tchecoslovaque, cited, 153, 194
 Czechoslovakia, estimated population, 19; population dependent on agriculture, 26, 184, 197; indexes of agricultural production, 85, 86, 87, 42, 45, 47, 50, 51, 53, 115, 116, 181, 193,

- by district, 184; "surplus" agricultural population, 63, 65, 71, 74, 205, 207; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 197; land tenure, 227-229; agricultural workers and labor relations, 229-231; production of coal, 278; production of petroleum, 279; oil reserves, 280; production of iron ore, 280
- Daniel, M. Arnold, 233, 268
- Davidson, Basil, 283
- Decken, Hans v. d., 165, 284
- Denmark, Statistiske Departement, cited, 194
- Denmark, population dependent on agriculture, 26, 182, 197; indexes of agricultural production, 35, 36, 42, 45, 47, 50, 51, 53, 181, 193, by district, 182; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 197
- Density, as measure of overpopulation, 58-59; of agricultural population, 58-59, 197-204
- Diversification, of agricultural production, 90, 94-95, 96, 102-103
- Dolinski, N. W., 60, 289
- Dunin, Edmund, 282
- Dyboski, Roman, 282
- Eastern Europe, defined, 18; differences from Western Europe, 17-20, 27-28; population, 19
- Economic Development in S. E. Europe*, cited, 87, 60, 96, 111, 124, 281
- Education, as requirement for economic development, 140
- Eisig, Helmut, 152, 284
- Emigration, as an economic policy, 118-121
- Employment, as measure of overpopulation, 60
- England and Wales, population dependent on agriculture, 26, 191, 201; indexes of agricultural production, 35, 36, 39, 42, 45, 47, 50, 51, 53, 173, 181, 191; arable land left fallow, 93; density of agricultural population, 201. *See also* United Kingdom
- Estonia, Recueil Mensuel du Bureau Central de Statistique de l'Estonie, cited, 194; Riigi Statistika Keskbüroo, cited, 194
- Estonia, estimated population, 19; population dependent on agriculture, 26, 183, 197; indexes of agricultural production, 35, 36, 42, 45, 50, 51, 53, 115, 116, 181, 183, 193; "surplus" agricultural population, 63, 65, 71, 205, 207; arable land left fallow, 93; indexes of industrial development, 124-126, 275, 277; density of agricultural population, 197; land tenure, 214-216; agricultural workers and labor relations, 216-218
- Estonian Institute of Economic Research, cited, 214, 268
- Estonian Minister of Agriculture, cited, 214, 215, 268
- Evelpedis, C., 105, 238, 256, 268, 281, 284
- Fallow land, as indicator of productive technique, 92-94
- Farkasfalvy, Alexandre, 290
- Fauquet, G., 112, 284
- Feierabend, L., 113, 284
- Finland, Tilastollinen Päätoimiston Julkaisema, cited, 165, 194
- Finland, population dependent on agriculture, 26, 182, 197-198; indexes of agricultural production, 35, 36, 45, 47, 48, 50, 51, 53, 181, 193, by district, 182; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 197-198
- Fishing, as source of income of agricultural population, 47-48, 51, 52-54
- Forestry, as source of income of agricultural population, 47-48, 51, 52-54
- France, Ministère du Travail, Statistique Générale de la France, cited, 194
- France, population dependent on agriculture, 26, 184-186, 198-200; indexes of agricultural production, 35, 36, 37, 42, 45, 47, 48, 50, 51, 53, 181, 193, by district, 184-186; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 198-200
- Frangés, Otto von, 101, 103, 243, 247, 249, 268, 284, 290
- Fruadianescu, A., 284
- Gaitanides, Hans, 289
- Germany, Reichsministerium für Ernährung und Landwirtschaft, cited, 272; Statistisches Reichsamts, cited, 146, 193, 195
- Germany, population dependent on agriculture, 26, 186-187, 200; indexes of agricultural production, 35, 36, 37, 42, 45, 47, 50, 51, 53, 181, 193, by district, 186-187; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 200; production of coal, 278; production of

- petroleum, 279; production of iron ore, 280
- Gornl, Olindo, 238, 243, 268
- Government, role in economic development, 111, 138-140
- Grains, in index of agricultural production, 146-152, 157, 162, 163
- Great Britain, Department of Agriculture for Scotland, cited, 195; House of Commons, cited, 272; Ministry of Agriculture and Fisheries, cited, 195
- Greece, Statistique Générale de la Grèce, cited, 82, 94, 195, 255, 257, 275
- Greece, estimated population, 19; population dependent on agriculture, 26, 188, 201; indexes of agricultural production, 85, 86, 45, 50, 51, 53, 116, 181, 193, by district, 188; "surplus" agricultural population, 63, 66, 71, 74, 205, 207; arable land left fallow, 93; indexes of industrial development, 124-126, 275, 277; density of agricultural population, 201; land tenure, 254-257; agricultural workers and labor relations, 257; production of coal, 278; coal reserves, 279; production of iron ore, 280
- Grenzer, Béla, 284
- Guothfalvy Dorner, Zoltán, 290
- Hanč, Josef, 284
- Hantos, Elemer, 284
- Hauck, Albert, 153, 284
- Haushofer, Heins, 272
- Heller, André, 272
- Henkelmann, Werner, 152, 284
- Hodza, Milan, 281
- Holdings, of agricultural land, 81-86.
See also Land tenure
- Hollmann, A. H., 272
- Housing, inadequate, 96
- Howard, Louise E., 272
- Hungary, Office Central Royal Hon-
gros de Statistique, cited, 195, 233,
234
- Hungary, estimated population, 19;
population dependent on agriculture,
26, 188-189, 201; indexes of agricul-
tural production, 85, 86, 45, 47, 50, 51,
53, 115, 116, 181, 193, by district,
188-189; "surplus" agricultural popu-
lation, 63, 65-66, 71, 205, 207; arable
land left fallow, 93; indexes of indus-
trial development, 124-126, 275-277;
density of agricultural population,
201; land tenure, 281-284; agricul-
tural workers and labor relations,
284-286; production of coal, 278; coal
reserves, 279; oil reserves, 280; pro-
duction of iron ore, 280
- Huntington, Ellsworth, 58, 289
- Hutchinson, Edward P., 119
- Ihrig, Karl, 103, 112, 215-216, 219, 233,
242, 269, 284
- Indebtedness, in agriculture, 97, 102
- Industrialization, 122-128; organization
requirements for, 136, 140
- Intensification, of agricultural produc-
tion, 102-103
- International Institute of Agriculture,
cited, 48, 49, 58, 82-83, 89, 93-94, 96,
105, 108, 109, 110, 111, 112, 119, 120,
148, 151-152, 194, 214, 218, 219, 221,
222, 223, 228, 231, 233, 269, 284-285,
289
- International Labour Office, cited, 90,
108, 112, 113, 125, 194, 211, 216, 217,
223, 225, 226, 227, 230, 231, 235, 236,
260, 265, 267, 269, 272, 275, 282, 285,
290
- Ionescu-Sisesti, G., 284
- Ireland, Department of Industry and
Commerce, cited, 195
- Ireland, population dependent on agri-
culture, 26, 191, 201; indexes of agri-
cultural production, 85, 86, 45, 50, 51,
53, 181, 193, by district, 191; indexes
of industrial development, 124-126,
275; density of agricultural popula-
tion, 201
- Istituto Nazionale di Economia Agra-
ria, cited, 272
- Italy, Confederazione Generale Fascista
dell'Industria Italiana, cited, 291;
Istituto Centrale di Statistica del
Regno d'Italia, cited, 167, 195, 261
- Italy, estimated population, 19; popula-
tion dependent on agriculture, 26,
190, 201-202; indexes of agricultural
production, 85, 86, 45, 47, 48, 50, 51,
53, 115, 116, 176, 181, 193, by district,
190; "surplus" agricultural popula-
tion, 63, 66, 70, 71, 74, 205, 207; arable
land left fallow, 93; indexes of indus-
trial development, 124-126, 275-
277; density of agricultural popula-
tion, 201-202; land tenure, 257-260;
agricultural workers and labor rela-
tions, 260-262; production of coal,
278; coal reserves, 279; production of
petroleum, 279; oil reserves, 280; pro-
duction of iron ore, 280
- Jacquemyns, G., 272
- Jalowiecki, A., 117, 289
- Jaska, E., 285
- Jasny, Naum, 162, 285
- Jürgen-Seraphim, Hans, 215, 242, 269,
285
- Kállay, Nicholas, 285
- Kallbrunner, Hermann, 272
- Kerek, Michael, 82, 232, 233, 269
- Kierman, Henrietta, 281

- Kirk, Dudley, 20, 87, 75, 115, 124, 142, 289
- Kiser, Louise K., 20, 75, 115, 289
- Klonov, Vladimir, 60, 117, 289
- Körmeny-Ekes, A., 103, 233, 269, 285
- Konkoly Thege, Jules de, 232, 269
- Kovatcheff, Y. G., 250, 269
- Kozlik, Adolf, 145
- Kriessmann, Ferdinand, 265, 269
- Krotoski, Ludwik, 282
- Kubec, François, 231, 269-270, 285-286
- Kuldkepp, M., 291
- Kulischer, Eugene M., 121, 289
- Kunkis, Voldemärs, 286
- Kuns, Hans, 152, 286
- Labor force, prospective changes in, 22, 24-25, 76
- Land reclamation, 110-111
- Land tenure, 77-89, 210-278 *passim*
- Landau, Ludwik, 289
- Latvia, Valsts Statistiskā Pārvalde, cited, 195
- Latvia, estimated population, 19; population dependent on agriculture, 26, 183, 202; indexes of agricultural production, 35, 36, 45, 50, 51, 53, 115, 116, 181, 193, by district, 183; "surplus" agricultural population, 63, 65, 72, 74, 205, 206; arable land left fallow, 93; indexes of industrial development, 124-126, 275, 277; density of agricultural population, 202; land tenure, 218-219; agricultural workers and labor relations, 219-221
- Latvian Ministry of Agriculture, cited, 219, 270, 286
- Laur, Ernst, 145, 286
- League of Nations, cited, 19, 37, 94, 96, 106, 125, 146, 180, 194, 218, 219, 233, - 270, 277, 278, 279, 280, 286, 291
- Lera de Isla, Angel, 267, 270
- Lésniewski, Victor, 286
- Level of living, as measure of over-population, 60-61
- Lipták, Ladislav, 103, 286
- Lithuania, Centralinis Statistikos Biūras, cited, 195
- Lithuania, estimated population, 19; population dependent on agriculture, 26, 183, 202; indexes of agricultural production, 35, 36, 45, 50, 51, 53, 115, 116, 181, 183, 193; "surplus" agricultural population, 63, 65, 72, 206, 208; arable land left fallow, 93; indexes of industrial development, 124-126, 275; density of agricultural population, 202; land tenure, 221-222; agricultural workers and labor relations, 222-223
- Livestock, improvement of breeds, 109
- Livestock products, in index of agricultural production, 146, 158, 164-167, 181
- Longobardi, Cesare, 111, 287
- Lorensoni, Giovanni, 253, 259, 270, 278
- Lorimer, Frank, 17
- Ludkiewics, Zdzislaw, 225, 270, 287
- Luxembourg, population dependent on agriculture, 26, 187, 202; indexes of agricultural production, 35, 36, 45, 50, 51, 53, 54, 181, 187, 193; arable land left fallow, 93; index of communications, 126; density of agricultural population, 202
- McDougall, F. L., 96, 287
- Magyar Statisztikai Szemle*, cited, 282
- Malessa, M. S., 287
- Manoilescu, Mihail, 291
- Manulla, Sabin, 289
- Marcelletti, Mario, 291
- Marinoff, Dragomir, 291
- Markets, for agricultural produce, 96, 97, 112-114
- Martinez de Bujanda, E., 83, 111, 263, 265, 266, 267, 270, 287
- Martna, M., 216, 270
- Martna, W., 216, 218, 270
- Mechanization, of agriculture, 108-109
- Michael, Louis G., 91, 103, 234, 238, 270, 287
- Mielck, O., 180
- Mibailoff, Ivan, 287
- Mirkovič, Mijo, 95, 244, 247, 270, 287
- Mirkovich, Nicholas, 117, 120, 289
- Mitnitzky, Mark, 291
- Mitrany, David, 100, 101, 103, 237, 238, 270, 281, 287
- "Modal Value-Ratios," 161, 168-169
- Moore, Elwood S., 279
- Moore, Wilbert E., 119
- Morgan, O. S., 94, 233, 255, 271, 288
- Móricz, Miklós, 235, 270
- Mozolovsky, Alexandre, 282
- Munk, Frank, 128, 291
- Nadujfalvy, Joseph, 273
- Nagy, Iván Edgar, 233, 270-271, 287
- Net reproduction rates, in European countries, 20-21
- Netherlands, Centraal Bureau voor de Statistiek, cited, 195
- Netherlands, population dependent on agriculture, 26, 187, 202; indexes of agricultural production, 35, 36, 37, 42, 50, 51, 53, 173, 181, 193, by district, 187; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 202
- Newman, Bernard, 281
- Northern Ireland, population dependent on agriculture, 26, 191, 201; in-

- dexes of agricultural production, 85, 86, 45, 50, 51, 53, 181, 191; density of agricultural population, 201. *See also* United Kingdom
- Norway, Statistiske Centralbyrå, cited, 195
- Norway, population dependent on agriculture, 26, 182, 202-203; indexes of agricultural production, 85, 86, 45, 47, 48, 50, 51, 53, 181, 193, by district, 182; arable land left fallow, 98; indexes of industrial development, 124-126, 275, 277; density of agricultural population, 202-208
- Notestein, Frank W., 20, 21, 23, 24, 75, 76, 77, 98, 115, 119, 121, 209, 289-290
- Nutrition, inadequate, 96
- Oberländer, Theodor, 60, 117, 290
- Oil and Gas Journal*, cited, 280
- Overpopulation, in agriculture, 55-77, 205-208
- Padlaskis, Pranas, 291
- Parcelation, 81, 105-106
- Pavel, Antonín, 228, 271
- Penrose, E. F., 56, 290
- Pertountzi, C., 94, 255, 256, 271, 288
- Petrini, Emile, 288, 271
- Piasecki, Julian, 291
- Pienesco, Mircea V., 287
- Plants, improvement of breeds, 109-110
- Poland, Chief Bureau of Statistics, cited, 224; Główny Urząd Statystyczny, cited, 195; Ministry of Information, cited, 82, 105, 195
- Poland, estimated population, 19; population dependent on agriculture, 26, 183-184, 203; indexes of agricultural production, 85, 86, 42, 45, 48, 50, 51, 53, 116, 181, 193, by district, 183-184; "surplus" agricultural population, 64, 65, 72, 74, 206, 208; arable land left fallow, 98; indexes of industrial development, 124-126, 275-277; density of agricultural population, 203; land tenure, 223-224; agricultural workers and labor relations, 224-227; production of coal, 278; coal reserves, 279; production of petroleum, 279; oil reserves, 280; production of iron ore, 280
- Poniatowski, J., 58
- Ponikowski, Wacław, 225, 226, 271, 286
- Population, prospects for growth in the different regions of Europe, 21-25; dependent on agriculture, 25, 26, 27, 181-192; future, in relation to agriculture, 75-77, 121-122; future, Eastern and Southern Europe, 209
- Portugal, Instituto Nacional de Estatística, cited, 125, 195, 264, 275; Ministère des Affaires Étrangères, cited, 83, 263, 271; Secretariado da Propaganda Nacional, cited, 282
- Portugal, estimated population, 19; population dependent on agriculture, 26, 190-191, 203; indexes of agricultural production, 85, 86, 46, 50, 51, 53, 115, 116, 181, 193, by district, 190-191; "surplus" agricultural population, 64, 66, 72, 74, 206, 208; indexes of industrial development, 124-126, 275; density of agricultural population, 203; land tenure, 263-264; agricultural workers and labor relations, 264-265; production of coal, 278; coal reserves, 279; production of iron ore, 280
- Prices, of agricultural products, 156-169
- Property, classification of types, 210-213. *See also* Land tenure
- Pullerits, Albert, 214, 271, 282
- Reich, Eduard, 153, 287
- Resources, of Eastern and Southern Europe, 128-132, 278-280
- Rézler, Julius, 291
- Röpke, Wilhelm, 291
- Roesner, Ernst, 194
- Ropp, Stephen de, 291
- Rose, Adam, 211, 216, 271, 287-288
- Roucek, Joseph S., 291
- Roumania, Institutul de statistică Generală a statului din ministerul muncii, sănătății și ocrotirilor sociale, cited, 195
- Roumania, estimated population, 19; population dependent on agriculture, 26, 189, 203; indexes of agricultural production, 85, 86, 45, 48, 50, 51, 53, 116, 181, 193, by district, 189; "surplus" agricultural population, 64, 65, 72, 74, 206, 208; arable land left fallow, 98; indexes of industrial development, 124-126, 275-277; density of agricultural population, 203; land tenure, 236-242; agricultural workers and labor relations, 242-243; production of coal, 278; coal reserves, 279; production of petroleum, 279; oil reserves, 280; production of iron ore, 280
- Royal Institute of International Affairs, cited, 57, 75, 114, 281, 282, 288, 291
- Ruh, Georges, 282
- Russell, E. John, 288
- Saits, A., 291
- Sasechi, O., 288
- Schmidt, Carl T., 96, 111, 150, 258, 260, 262, 271, 288

- Schmolke, Siegfried, 291
 Schwarz, Solomon M., 107, 114
 Schweinburg, Eric F., 281
 Scotland, population dependent on agriculture, 26, 191, 201; indexes of agricultural production, 85, 86, 45, 47, 50, 51, 53, 181, by district, 191; arable land left fallow, 93; density of agricultural population, 201. *See also* United Kingdom
 Secularization, 140-142
 Servakis, Georges, 94, 255, 256, 271, 288
 Severine, G., 288
 Shollenberger, J. H., 152, 288
 Slawinski, T., 291
 Social insurance, for agricultural workers, 210-273 *passim*
 Société d'Économie Politique, cited, 273, 288
 Sommer, Louise, 292
 Southern Europe, defined, 18; population, 19
 Spain, Dirección General de Estadística, cited, 123, 275; Dirección General del Instituto Geográfico, Catastral y de Estadística, cited, 195
 Spain, estimated population, 19; population dependent on agriculture, 26, 191, 203; indexes of agricultural production, 85, 86, 45-46, 50, 51, 53, 115, 116, 191, 193, by district, 191; "surplus" agricultural population, 64, 66, 68, 72, 74, 206, 208; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 203; land tenure, 265-267; agricultural workers and labor relations, 267; production of coal, 278; coal reserves, 279; production of iron ore, 280
 Staley, Eugene, 276
 Starca, Peteris, 220, 271
 Stoykovitch, Velimir R., 288
 Strickland, C. F., 113, 288
 Suha, A., 281
 Surányi-Unger, Théodore, 283
 Swart, Imma, 288
 Sweden, Statistiska Centralbyrån, cited, 195
 Sweden, population dependent on agriculture, 26, 182-183, 203-204; indexes of agricultural production, 85, 86, 87, 42, 45, 47, 48, 50, 51, 53, 181, 193, by district, 182-183; arable land left fallow, 93; indexes of industrial development, 124-126, 275-277; density of agricultural population, 203-204
 Switzerland, Bureau Fédéral de Statistique, cited, 167, 195
 Switzerland, population dependent on agriculture, 26, 187-188, 204; indexes of agricultural production, 85, 86, 42, 44, 50, 51, 53, 181, 193, by district, 187-188; indexes of industrial development, 124-126, 275, 277; density of agricultural population, 204
 Szeibert, János, 236, 271
 Szél, Tivador, 123, 290
 Szendrey, Akos, 278
 Szöllösy, Zoltán, 278
 Tauber, Irene B., 20, 75, 115, 142, 289, 290
 Technique, in European agriculture, 90-94, 108-111
 Tekál, Ladislav, 273
 Tenancy, 80, 83, 86, 88. *See also* Land tenure
 Tenure. *See* Land tenure
 Textor, Lucy Elizabeth, 229, 271
 Thompson, Warren S., 61, 290
 Tommasi di Vignano, Guglielmo, 258, 271
 Transportation and communications, 124-126
 Turkey, indexes of agricultural production, 85, 50, 51, 181, 193, by district, 189; agricultural population, 189
 USSR, indexes of agricultural production, 85, 86, 42, 50, 51, 53, 181, 193, by district, 191-192; index of communications, 126; agricultural population, 191-192
 Unemployment, of agriculturalists, 97-98, 135
 United Kingdom, indexes of industrial development, 124-126, 275-277; yields of important crops, 43, 193. *See also* England and Wales; Northern Ireland; Scotland
 United Nations Conference on Food and Agriculture, cited, 117, 288
 United States, Department of Labor, cited, 278-292; Library of Congress, cited, 281
 Universidad de Barcelona, cited, 292
 Uuemaa, E., 283
 Van der Vaeren, J., 108, 288
 Vesely, Jaroslav, 292
 Vint, E., 288
 Viškovský, Charles, 228, 271
 "Vital revolution," 142
 Voldvere, F., 283
 Wagemann, Ernst, 115-118, 276, 288, 290
 Wagemann, Gustav, 278
 Wajnryb, Mieczyslaw, 292
 Warriner, Doreen, 87, 57, 60, 90, 91, 96, 101, 102, 103, 104, 107, 108, 109, 121, 139, 278, 281, 288, 289

- Wauters, Arthur, 273, 288
 Whelpton, P. K., 61, 290
 Wörmann, 154, 180
 Workers. *See* Agricultural workers
 Wünscher, Friedrich, 289
- Yates, P. Lamartine, 87, 60, 102, 103,
 104, 108, 109, 189, 289
 Yeremitch, D., 249, 271, 289
 Yields, of important crops, 43-44, 193
 Yugoslavia, Kraljevina Jugoslavija
 Opšta Državna Statistika, cited, 195
 Yugoslavia, estimated population, 19;
 population dependent on agriculture,
 26, 190, 204; indexes of agricultural
 production, 85, 86, 45, 50, 51, 53, 115-
 116, 181, 193, by district, 190; "sur-
 plus" agricultural population, 64, 66,
 72, 74, 206, 208; arable land left fal-
 low, 98; indexes of industrial devel-
 opment, 124-126, 275; density of agri-
 cultural population, 204; land tenure,
 243-249; agricultural workers and
 labor relations, 249-250; production
 of coal, 278; coal reserves, 279; pro-
 duction of iron ore, 280
 Yugow, Aaron, 107, 114
- Zarras, Ioannes, 288
 Zavalani, Dalib, 93, 273, 289

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