

AN ANALYSIS OF THE RELATIONSHIP BETWEEN
ECONOMIC PLANNING AND STRUCTURAL CHANGES
IN EAST GERMAN INDUSTRY, 1959-1968

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ABBREVIATIONS

COMECON	Council for Mutual Economic Assistance
DDR	German Democratic Republic (GDR) (Deutsche Demokratische Republik). Generally referred to as East Germany in this study.
EEC	European Economic Community (European Common Market)
GDR	German Democratic Republic (East Germany).
M	East German Mark, formerly referred to as MDN (Mark der Deutschen Notenbank) or Ostmark. The rate used in East German accounting of foreign transactions is approximately 4.2 M to the dollar. It is strictly a domestic currency, not convertible into any foreign currency.
SED	Socialist Unity Party of Germany (Sozialistische Einheitspartei Deutschlands).
SJBRD	Statistical Yearbook of the Federal Republic of Germany (Statistisches Jahrbuch fuer die Bundesrepublik Deutschlands.)
SJDDR	Statistical Yearbook of the German Democratic Republic (Statistisches Jahrbuch der Deutschen Demokratischen Republic)
UPP	Unchanging Planning Prices (see pp. 31-32)
VEB	State-owned Enterprise (Volkseigener Betrieb)
VHWF	Quarterly Journal of Economics of the Economics Research Institute in West Berlin (Vierteljahreshefte fuer Wirtschaftsforschung)
VVB	Association of State-owned Enterprises (Vereinigungen Volkseigener Betriebe)

CHAPTER I

A. PURPOSE OF THE STUDY

The purpose of this study is to examine the nature of industrial development in East Germany during the decade 1959 to 1968. Special attention is given to the structural changes that have accompanied this development and to the relationship between such changes and the East German system of economic planning.

The term "structural change" has several different meanings in economic literature. It can refer, for example, to changes in the size of business units, the result of which might be an increasing or decreasing number of such units within a given industry. It can also refer to the relative growth of different industrial sectors in a given period of time, the result being that certain types of industry increase their significance in the economy relative to others. In addition the term can be used to denote changes in the geographical distribution of industry, with some areas of the country expanding their industrial base more quickly than others.

It would be extremely difficult, and probably undesirable, to examine all these types of structural change in one study. In order to give the study a certain focus

the writer has chosen to concentrate on the second type: the relative growth of different industrial sectors in the East German economy between 1959 and 1968. This approach coincides with a previous American study of the East German economy¹ and permits some comparison of previous structural changes with those observed in the present study. This use of the term "structural change" also follows the usage of East German scholars.² Their analysis can therefore be compared fairly easily with the results of this study.

Changes in the relative importance of different industrial sectors will almost inevitably upset the regional structure of a nation's economy. For example, one would expect that relatively fast growth in one particular branch of industry would enable those regions whose production favors this branch to expand their industrial output more quickly than others. Because of this intimate connection between structural change (defined in terms of the relative growth of different industrial sectors) and regional economic change, some attention is also given to the latter

1 Wolfgang F. Stolper and Karl W. Roskamp, The Structure of the East German Economy, Cambridge, Mass. 1960. See section b. of this chapter.

2 Cf. Gerhard Schulz, Technische Revolution und Strukturwandel in der Industrie, Dietz, Berlin, 1966. See section b. of this chapter.

phenomenon. As will be noted later, surprisingly little attention seems to have been given to this problem by East German economists.¹ It is surprising because in a planned economy like that of East Germany, structural change, and with it regional development, may be attributed in large measure to the conscious policies of state economic planners. Regional disparities may be explained away as "accidents of the market" in capitalist economies, but not so in a socialist state.

A word needs to be said about our use of the term industrial "sector". Figure I - 1 illustrates the way in which such terms as sector, subsector, and branch are used.²

¹ It is always dangerous to make such assertions since there are inevitable gaps in one's awareness of current research. However, in personal conversations with several East German scholars in the summer of 1969 the writer was given to understand that regional problems could not become significant in a unified socialist state and therefore were not examined in a critical or detailed way by socialist scholars. As we shall see, there is considerable emphasis on regional planning in East Germany but this has been developed very largely to overcome the limitations of centralized planning and must be regarded primarily as a tool of national planning.

² Sector is used here for "Bereich", subsector for "Zweig", and branch for "Zweiggruppen".

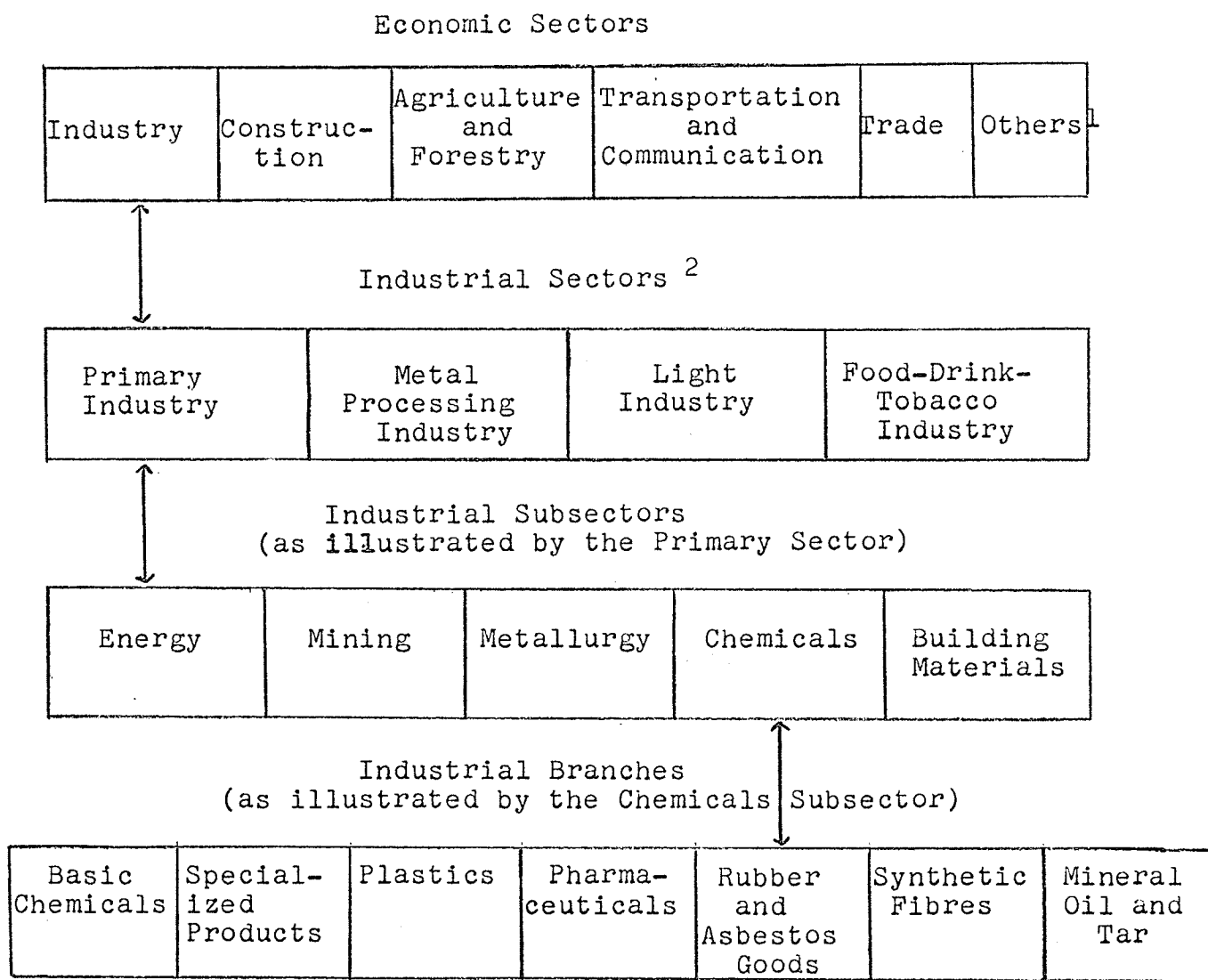
Two methods are used in East German accounting to delineate sectors, subsectors, and branches:

a) The firm method: (Where the total production of a firm is assigned to that sector, subsector, and branch in which the firm is most heavily engaged. This is the method used for most of the data found in this study.

b) The product method, in which the total output of a particular product, regardless of its origin in a particular type of sector, subsector or branch is calculated. This results in product sectors, subsectors, branches, and groupings, not used in this study unless otherwise indicated.

The material goods production of the whole economy is first divided into six economic sectors including industry and productive handicrafts

Figure I - 1



¹ Includes publishers, waterworks (before 1968), the work of planning organizations and household services.

² The Metal Processing Industry is sometimes shortened to "Metals" or "Metals Industry" in the subsequent analysis, and "Foods" is used to designate the Food-Drink-Tobacco sector.

(generally referred to simply as industry). Up to the introduction of the new E.L.N. classification system (see Figure I-2) the industry sector was divided further into four industrial sectors, Primary, Metal Processing, Light Industry, and Food-Drink-Tobacco. Each of these sectors was divided further into several subsectors, as illustrated here by the Primary sector. These subsectors were in turn subdivided by product groupings, referred to here as branches.

The information in the statistical yearbooks and in other documentary materials follows this general pattern of organization. Sometimes more detail is provided on the output of individual industrial products within the industrial branches.

The term "structural change" is used in this study to refer to the relative growth of these different sectors, subsectors, and branches of industry. It involves an examination of the relative importance of these industry divisions and of various types of industrial products at different periods of time.

As we shall see, East German economic planning has been designed to promote the rapid growth of certain industrial sectors and types of products (by implication, at the expense of others). Therefore , observed

structural changes in industrial sectors and in product groupings give us a valuable insight into the nature of economic development in East Germany.

Many factors inevitably determine such structural changes, both in planned and in relatively unplanned economies. Among the important determinants will be the resource base of a country, its state of technology, patterns of consumer behavior, and the quality and quantity of the labor force. These might be called universal, exogenous variables, not amenable to short-run manipulation and not related in the short run to a unique type of economic system.

However, structural changes may also be related to a peculiar system of economic organization. A major purpose of this study is to examine the extent to which structural changes in the industry of the socialist state of East Germany can be attributed in a unique way to techniques of socialist planning.

Socialist planners can determine what type of goods will be produced where, when, how, and at what rate, by controlling such allocative and productive factors as prices, labor, and capital investment. Their degree of control over these factors will in turn be influenced by

the efficiency and scope of the internal planning apparatus and by external relations. Therefore this study measures the degree of control exercised by economic planners over East German industry and describes the basic mechanisms of the planning system, including the operations of the foreign trade sector.

The relationship between economic planning and structural change is measured in several ways. First, an attempt is made to determine the correspondence between planning objectives in East Germany, as stated *ex ante* in the official state economic plans, and the ensuing changes in such parameters as employment, investment, and production. This is a measurement of the effectiveness of economic planning -- the relationship between planned goals and actual performance.

One weakness of this first method is that it fails to reveal to what extent the planning goals are themselves unique to the particular economic system. To a large extent they might reflect needs and priorities imposed on the economy by underlying forces -- such as resource needs, technology, consumer tastes -- which are operative in unplanned economies as well.

To meet this problem at least partially a second measurement of correspondence is used. This involves a

comparison of structural changes in East Germany with analogous changes in a country which is not highly planned but which in some other important respects resembles East Germany's. West Germany has been chosen for this purpose. It is immediately obvious that East and West Germany will differ fundamentally in areas other than planning, but enough similarities may be discovered to justify this procedure.

The two methods together permit a cautious and partial answer to the central problem posed for this study: the relationship between economic planning and structural changes in East German industry from 1959 to 1968.

What has just been said may serve to validate the approach that has been chosen to study the East German economy. Something further must be said about the importance of the subject itself and the appropriateness of the time period chosen for the study.

Although western scholars encounter numerous difficulties in measuring the performance of the East German economy there seems to be virtual agreement by now that East Germany ranks among the first eight or nine industrial powers in the world and has probably achieved the highest standard of living of any socialist

country.¹

This achievement is all the more remarkable in the light of conditions in East Germany immediately after the war, conditions which have been aggravated by a virtually stagnant labor force and an extremely poor iron ore and energy resource base (e.g. oil and natural gas). It should be expected that western economists would have a natural and strong interest in this most successful of all socialist states.

The literature review in the next section indicates that such interest has not been lacking. There have been several major studies by American, Canadian and West European scholars of the East German system. However, in spite of this interest there are several reasons why a study at this time, of the period 1959 - 1968, is important.

Much of the literature readily available to western scholars was written at the end of the 1950's. Even if no significant changes had occurred in the meantime it would be of interest to carry the previous analysis through the

¹ See Jean Edward Smith, Germany Beyond the Wall, Little, Brown, & Co., Boston, Toronto, 1967, 1969, and Stephen M. Hirst & Leon Lewins, Basic Data on the Economy of the Soviet Zone of Germany, Overseas Business Reports, U.S. Department of Commerce, February, 1967.

decade of the 1960's.

However, the fact is that several very important changes have occurred in the East Germany economy, and our understanding of that economy has been greatly facilitated by a more comprehensive presentation of data in the East German statistical yearbooks and other source materials.

To refer to the last point first, it is only since 1959 that considerable information has been made available on the growth of industrial production by subsectors and branches.¹ Further, investment data were first presented in any significant detail (though still not enough to satisfy a scholar's curiosity) in the 1960 yearbook. Therefore, changes in the presentation of data enable one to observe trends and changes which could only be guessed at in pre-1960 studies.

Important organizational changes have also occurred in the economy. The major decentralization of industry which occurred in 1958, and the still more significant reforms of 1963 (see next chapter) made their impact on the East German economy only after 1959. It is only now that one can really begin to evaluate the relationship between the new planning system of East Germany and structural changes.

¹ Cf. H. Koehler, Economic Integration in the Soviet Bloc, p. 201, and W. Stolper, The Structure of the East German Economy, p. 58.

Further, the coordination of trade and planning in East Europe through the Council for Mutual Economic Assistance (COMECON) while undertaken in the 1950's became a significant fact for the East German economy only in the 1960's. This is an appropriate time to evaluate the impact of this significant organizational change.

In addition to these reasons, the writer has adopted several analytical tools and approaches which might throw new light on East German developments. This study attempts, for example, to measure the impact of different rates of productivity growth on the allocation of resources and the growth of industry. Further, the regional analysis, as mentioned already, is intended to broaden the concept of structural change and to give it dimensions which have been lacking in some of the previous work on the subject. This work has been facilitated by personal research carried on by the writer in East Germany in the spring and early summer of 1969.

It is hoped, therefore, that this study will advance our understanding of a very important industrial system in a period of history when changes in it's industrial structure were accompanied by profound organizational changes, both in the domestic and in the international spheres.

B. REVIEW OF PREVIOUS RELATED STUDIES

The selective bibliography which completes this thesis gives some indication of the extensive literature that has developed around the theme of East German economic development. In this section we are concerned with some of the major works that have been published in the past decade. The period discussed in several of these works is that from 1936 to about 1960, so that one of their purposes is to examine possible links between the pre- and post-war German economy. They can be used in turn to form a link between the early post-war period in East Germany and the later period of the 1960's covered in this study.

The following books have been chosen because of their fairly recent publication (all since 1960), their comprehensive approach to the subject, and because they represent the viewpoints of writers from several different countries. Their analysis also lends itself to comparison with the present study at numerous points, although in each case the approach and the time period are sometimes quite different. This section discusses each work very briefly, and in very general terms. More specific use is made of them in the analytical sections, especially chapters VI and VII. They are discussed in the

chronological order in which they appeared.

In 1960 Wolfgang F. Stolper, with the assistance of Karl W. Roskamp, published a painstakingly detailed study of the East German economy entitled The Structure of the East German Economy.¹ The study was begun in 1955 under the sponsorship of the Center for International Studies at the Massachusetts Institute of Technology. The period covered was approximately 1936 to 1958.

The book has two major purposes: to examine the nature and extent of East German economic progress from 1936-1958 and to compare this progress with developments in West Germany. This involved a detailed examination of the growth of G.N.P. in the two countries and a sector by sector analysis of structural changes within the economies.

In order to facilitate the comparison, and to get around the problem of assigning meaningful values to East German output figures (based, as they are, on planning prices which bear no relationship to market prices as understood in the West) the writers adopted West and East German industry classifications and used West German prices in

¹ Harvard University Press, Cambridge, Mass.
pp. XXV, 478.

their study. A concise example of this procedure and some of its underlying assumptions is provided by Professor Roskamp in a more recent article on the subject.¹

The scope of the Stolper-Roskamp study was much broader than the present one, concerning itself with all of the major economic sectors, especially industry, agriculture and construction. Since a major purpose was to make comparisons with West Germany there was a greater need than in the present study to develop output series which were comparable with such a non-socialist country. We are primarily concerned with industrial changes in East Germany alone and consequently with the internal consistency and comparability of the data.

However, structural changes are defined in a way that is very similar to the usage here, without, however, the regional dimension. It will be extremely useful later on to compare the conclusions and predictions made by these writers at the end of the 1950's with the results of this study.

¹ Karl W. Roskamp, "East German Industrial Production 1958 to 1965", Weltwirtschaftliches Archiv, Vol. 2, 1968, pp. 306-319.

In 1964 Alfred Zauberman of the London School of Economics published a study of economic progress in three socialist countries entitled: Industrial Progress in Poland, Czechoslovakia, and East Germany, 1937-1962.¹

Its importance for the present study is limited by its attention to two countries in addition to East Germany (with Poland receiving more attention than any other). The time period covered is similar to that of Stolper and Roskamp. However, Zauberman's study is extremely useful because he limits himself to industrial production and concentrates especially on three principal "growth" industries: energy, metals, and chemicals. Since these industries are considered very crucial by East German planners, Zauberman's detailed analysis is an important point of departure for some of the analysis here.

Like Stolper and Roskamp, Zauberman gives an interesting description of East German accounting practices, especially of the difficulties encountered with their measurement of gross output (Cf. section d. of this chapter).² In addition to this he describes their planning

1 Oxford University Press, 1964, pp. XIV, 338.

2 Instead of applying western prices to East German production Zauberman often uses physical measurements of production to make comparisons.

system in some detail, focusing especially on the process of investment allocation. There is also a helpful description of the foreign trade sector and the impact of socialist trade relations on internal developments. Again, though this work deals essentially with an earlier time period some of its observations and results will be helpful in the analysis that follows.

Zauberman's study in 1964 coincided with a West German examination of the East German economy, written by Karl C. Thalheim. Die Wirtschaft der Sowjetzone in Krise und Umbau¹ (The Economy of the Soviet Zone in Crisis and Reconstruction) was a study sponsored by the Institute of Research for Problems Related to the Reunification of Germany (under the Ministry for All-German Affairs). In its inception, therefore, it seemed to be both an economic and a political document.

Professor Thalheim, who has since edited and written

¹ Duncker & Humblot, Berlin, 1964, pp. 190. Vol I in the Series, Economic and Social Life in Middle Germany (Wirtschaft und Gemeinschaft in Mitteldeutschland). It was accompanied by Vol. II, a more specialized study by Bruno Gleitze entitled, Die Industrie der Sowjetzone unter dem gescheiterten Siebenjahrplan, Berlin, 1964. A similar study, also sponsored by the Ministry for All-German Affairs, is Dr. Konstantin Pritzel's, Die wirtschaftliche Integration der Sowjetschen Besatzungszone Deutschlands in den Ostblock und ihre politischen Aspekte (The Economic Integration of the Soviet Zone of Germany in the East Bloc and its Political Aspects). 2nd Edition, Bonn & Berlin, 1966.

several other books and monographs on the subject,¹ set out to examine the most recent changes in the East German planning system and to assess their chances for success.

Unfortunately the book began by assuming that the major difficulties in the East German system could be attributed to the system itself. Even though the analysis that followed noted some of the other difficulties faced by East German planners, such as the resource base and heavy reparation payments after the war, the initial assumption seemed to lead inevitably to a conclusion which substantiated the assumption.²

At the same time the book contains a helpful description of the economic reforms themselves, and of the international relationships between the socialist countries. It provides, therefore, a very useful background to the planning section of the present study.

In 1965 another American scholar, Heinz Koehler,

1 Cf. Karl C. Thalheim & Hans-Hermann Hoehman, (eds.) Wirtschaftsreformen in Osteuropa, (Economic Reforms in East Europe), Verlag Wissenschaft und Politik, Cologne, 1968.

2 Compare pp. 12-13 and 130-132. For a less critical, more cautious, West German appraisal of the same period see Horst Seidler, "Die gegenwaertigen Grundtendenzen der Wirtschaft Mitteldeutschlands." V.H.W.F. 2nd Nr. 1965, pp. 231-249.

threw further light on the foreign trade sector and its impact on the East German economy with his book, Economic Integration in the Soviet Bloc, With an East German Case Study.¹ This work was based on a doctoral dissertation completed by the author at the University of Michigan in 1961. Though revised and enlarged for publication in 1965 most of the data covers the period from 1936 to 1960 (some only till 1955, while in some instances it goes up to 1963).

As the title of Koehler's book suggests, its main concern is with the nature of the foreign trade system as it developed in the 1950's, and the impact of this system on the structure of the East German economy. In a sense it reverses the focus of the present study, which is concerned first of all with the structure of East German industry, and secondly with the impact of the foreign trade sector (as one important aspect of overall planning) on that structure. The approach of the present study, however, owes much to Koehler's, especially in its emphasis on labor and investment allocation and in its recognition of productivity differences.

1 Frederick A. Praeger, N.Y. 1965, pp. XXI, 402.

Koehler's description of the foreign trade sector has also been very useful for the present chapter on foreign trade. Because of the different focus, however, and the different time periods, there is little overlap between this study and his.

An interesting attempt in East Germany to analyze structural changes and to compare those in East Germany with other countries is provided in Gerhard Schulz's 1966 work, Technische Revolution und Strukturwandel in der Industrie (Technical Revolution and Structural Change in Industry).¹

Dr. Schulz, an economist with the Institute for the Social Sciences (Institute fuer Gesellschaftswissenschaften) in the Central Committee of the Socialist Unity Party (S.E.D.), examines the developmental patterns of different industrial sectors in highly advanced industrial countries. These include the U.S.A., U.S.S.R., West Germany, Japan, France, England, and East Germany. The study itself is divided into two parts, (a) an analysis of structural change in the different branches of industry in the above countries, and (b) an examination of the process of technical change and its impact on such structural changes.

¹ Dietz Verlag, Berlin, 1966, pp. 331.

While noting special conditions which influence the course of structural changes in any given country (e.g. the resource pattern) the author stresses the crucial role of technical change. It is the dynamic force which determines, in every industrialized country, the essential features of industrial structure and changes in the structure. By technical change Schulz means the discovery and perfection of new means of production, the rationalization of the production process, the improvement of capital equipment, and the development of new and better products. In general, he says, this involves growing automization, mechanization, and the increasing use of chemical processes and electricity in industry. In keeping with the goals of East German economic planners Schulz stresses the leading role of the chemical industry and metal processing in the technical revolution, and consequently in the structural changes that occur.

Schulz's description of the planning process in East Germany and its relationship to structural change is especially useful for our purposes. His predictions for the future, made in 1965, can be tested in the present study.¹

¹ A recent pamphlet by Schulz, Unsere Wirtschaft heute und morgen. Wozu Strukturpolitik? "Our Economy today and Tomorrow. Why Structural Policies?" (Dietz, 1968) pushes his analysis a little further and will also be used in subsequent discussion.

However, there appears to be something mechanistic and deterministic in Schulz's approach to technical and structural change. The former, he stresses, is an inevitable concomitant of all highly industrialized countries, and the latter is the inevitable result of the former. While he suggests on a few occasions that the socialist state of East Germany can "organize" technical change, based as it is on modern science and adequate capital resources, more effectively than capitalist economies, he places little stress on this. Instead he emphasizes the technical leadership of the U.S. and some other advanced countries, inferring that there is something universal and inevitable about such changes in both capitalist and socialist industrial states.¹ The effect of this is to push the role of economic planners in shaping the structure of the economy very distinctly into the background. One would almost gather from his study that the role of economic planners in the socialist state of East Germany is to determine which products and industrial sectors will be most subject to technical change in the future, and to push their production accordingly in order

¹ Compare his statement on the inevitability of technical and structural change in all advanced countries, p. 27, with his emphasis on unique socialist developments, pp. 36-38.

to increase total output as quickly as possible.¹ This reduces the role of such planners to a discovery of the laws of change, and to the promotion of the techniques which will allow their implementation. In our study we will attempt to discover to what extent the goals of East German planners have actually been set in this way, and the implications of this for "unique" structural changes in East German industry.

Several more popular treatments of East German economic development have appeared in recent years, and they may at least be mentioned here. Two East German writers, Hans Mueller and Karl Reissig, have recently dramatized the recovery of the East German economy in a

¹ At the conclusion to his work Schulz notes that certain important consumer items which have traditionally played an important role in consumer buying habits, and other products which bring in considerable hard currency even though they aren't characterized by dynamic technical change, must also be encouraged by economic planners, but in general the stress is very much on the encouragement of those sectors which are the pace-setters ("Schrittmacher", or "fuehrende Zweige") in the technical revolution, a revolution which is taking place in every advanced industrial society. In a personal discussion with Dr. Schulz in June, 1969, the writer was given to understand that considerable changes are planned for his book if it is reprinted in future. In particular he expressed a strong desire to increase the emphasis on the impact of social and political conditions on technical and structural changes.

book whose very title indicates that it was written partly against the background of another dramatic recovery in a neighboring country: Wirtschaftswunder DDR (The Economic Miracle of the German Democratic Republic).¹ The authors consider the period 1963-1968 to have been one of unusual progress in East Germany and they provide much useful information, including photographs, to support their conclusions. While the treatment is extremely popular it provides a helpful insight into current trends, including general structural changes within industry.

A Canadian scholar, Jean Edward Smith, has also popularized the East German economic "miracle" in his recent book, Germany Beyond the Wall.² The scope of this work is extremely broad, including social and political developments. The author relies heavily on general sources and personal experiences. The latter are often very enlightening and the book as a whole contains some useful information on recent development. It is evidence of growing interest in the subject among western scholars.

1 Dietz Verlag, Berlin, 1968. pp. 531.

2 Little, Brown and Company, Boston, Toronto, 1967, 1969, pp. XIV, 338. The conclusions of this book should be compared with those in Roskamp's Weltwirtschaftliches Archiv article, op. cit.

In concluding this section we can note that the major contributions made in this field in recent years have, to a large extent, focused on a different time period than that covered by the present study, and have also considered aspects which are not always central to the concern of the present study. At the same time the approaches used, and the methods and data assembled in some of the writings, have proven invaluable for the present study and will be used extensively in the subsequent analysis.

C. ORGANIZATION OF THE THESIS AND SOURCES OF DATA

The analysis which follows this introductory chapter can be divided roughly into three parts:

- i. An examination of the internal and external planning system of East Germany - chapters 2 and 3.
- ii. Structural changes in the East German economy and their relationship to economic planning - chapters 4 - 6.
- iii. An investigation and comparison of structural changes in East and West Germany - chapter 7.

The main chapters, which rely most heavily on the writer's own investigation and constitute the most original

part of the thesis, are chapters 4 - 6.

Data for these chapters was found in numerous sources some of which deserve special mention in this section. In addition to the books mentioned in most studies of East Germany, and included in the bibliography at the conclusion of the thesis, the writer was able to make use of several other important sources.

He was given free access to the extensive library holdings in the Economic Institute of Rostock University and in the Economic Institute in Berlin-Karlshorst. In the latter he was able to utilize several "Habilitation" works, and doctoral dissertations, written by East German scholars about various aspects of the economy. Some of these proved to be extremely valuable for the present thesis.

Through professors at these institutions several books and study materials, including Gerhard Schulz's important study, were made available to the writer even though they are out of print or not generally available to the public. Unfortunately, permission to visit the state planning bureau in East Berlin was not granted, and efforts to obtain information on investment decisions and recent output in such a specific industry as concrete products did not prove successful. The writer was able to engage in

fruitful interviews with persons connected with these institutions but it proved more difficult to obtain specific data on such crucial matters as investment and production.

However in addition to the above a number of journals and statistical publications which are increasingly useful to the researcher have been utilized.

These include:

The Statistical Yearbooks of the D.D.R.: published annually from 1955 to 1969. (Referred to here as S.J.D.D.R.)

Statistische Praxis: A monthly bulletin describing and discussing the most recent developments in the economy.

Issued by the State Planning Commission.

Wirtschaftswissenschaft: monthly academic journal with extremely valuable theoretical and practical discussions of the economy.

Die Wirtschaft: a weekly economic publication, with detailed information on industry changes, planning methods, etc., and occasional special inserts which deal with major economic issues at considerable length.

Einheit: official monthly organ of the Central Committee of the SED.

Neues Deutschland: official daily newspaper of the SED.

Gesetzblatt der D.D.R.: The prime source for government regulations regarding economic planning and other economic matters, especially Part II (Teil II).

Sozialistische Aussenwirtschaft (successor, since 1968, to Aussenhandel): monthly journal devoted to East Germany's foreign trade and the economic relations of the socialist countries.

Effekt: Recent bi-monthly, glossy economic magazine (published apparently since 1968), devoted to a wide range of economic problems. Appeals to a wide reading public but also has information of interest to the scholar.

Planung und Leitung: A series of monographs (now numbering approximately 40) dealing with specific economic problems of special interest to the scholars.

Wissenschaftliche Zeitschrift; Hochschule fuer Oekonomie, Berlin: Quarterly economic journal of the Economic Institute (equivalent of a University economic faculty) in Berlin-Karlshorst.

Wissenschaftliche Zeitschrift der Universitaet Rostock: Quarterly journal of the University of Rostock, with special issues devoted to economics.

D. DEFINITION OF TERMS USED¹

It is extremely difficult to understand and explain many of the terms used in national income accounting and in industry classification in a socialist state such as East Germany. Gross National Product, for example, means something quite different than it does in capitalist countries. Some writers refer to it as a gross-gross method of income accounting, because it includes not only the capital stock used up in a given year (which distinguishes it from Net National Product in most western countries) but a great deal of double-counting, including as it does the value added by each firm plus (in the case of each firm) the value added by previous firms. However, while this problem remains a difficult one in the present study it is somewhat alleviated by the fact that we are more interested in intra-industry comparisons within East Germany than we are in comparing East German production with that of another country. Therefore, for the most part it is enough to understand the terms as they are used within the East German economy.

¹ These definitions are based on: Dr. Guenther Noerenberg, Sozialistische Oekonomie, Kategorien und Begriffe, in two parts, pp. 62 and 103. Published by the Division for Agitation and Propaganda, Rostock District Headquarters of the SED. 1967; and the S.J.D.D.R. 1969, pp. 35-38, 51-52, 95-98. Further definitions are contained in the appropriate sections.

Some of the more important terms are defined as follows:

Gross Social Product (In Industry, Gross Industrial Product):

(Gesellschaftliches Gesamtprodukt, or Bruttoprodukt)

This equals the total value of material production, based on unchanged planning prices of 1955 (see below) or on 1967 prices. Gross Social Product (G.S.P.) minus used up production goods, including goods purchased from other producers (to eliminate double counting) = Net National Product (Nettoprodukt).

Net National Product (N.N.P.) minus government subsidies = National Income (N.I.).

The distinction between G.S.P., N.N.P., and N.I. can be illustrated with examples taken from Tables 3 and 4 of the 1969 S.J.D.D.R. (pp. 40-41). Table 4 indicates that the G.S.P. or brutto-production of industry in 1968 was 165,437 million Mark. Of this amount, 104,403 million Mark was deducted for depreciation of capital (6,117 million Mark) and for the value of producer goods obtained from other producers (98,286 million Mark), leaving an N.N.P. of 61,034 million Mark. However, a certain amount of this total was not actually produced by firms, but was the result of government subsidy payments. Such subsidy payments are then subtracted from the N.N.P. to arrive at the true value of the National Income that was produced in the

given year (the subtraction is made in column 3, Table 3, p. 40).

Industrial Gross Production

This includes:

1. All finished, ready-to-be sold industrial products, including those goods which are added to inventory or are sold at normal or reduced prices to members of the firm.
2. All productive services in the firm commissioned from outside, like repairs, mounting of machines, etc.
3. Most finished products used by the firm for its own repairs and capital investment.
4. The value of inventory changes in unfinished products and services of an industrial nature in the socialist firms of such sectors as Machines and Vehicles, Electro-Technical, Electronics and Instruments.

Industrial Gross Production does not include:

1. Products of a specific firm which are processed further or used in the firm's own production (till 1963 this prohibition was not applied to coal, metal ores, pig iron and crude steel and fishing).

2. Current repairs on buildings, machines, and structures within the specified firm.
3. Self-produced means of production which are financed out of working capital and used up within a year.
4. Services in fulfillment of guarantees and warranties.
5. Research or development services with the exception of services directly related to the design of finished goods, ready for sale, and large experimental technical goods.
6. Waste of all kinds, even that which is sold.
7. Goods and services which do not meet required standards.
8. Goods which require extra labor, such as repairs, erection, etc.
9. Merchandise, packaging materials, etc., which is already included in the price of the packaged product.
10. Since 1964 self-service repairs (valued at 270 million Mark in 1964) are not included in Gross Industrial Production.

Unchanging Plan Prices (UPP) and Constant Prices (kP67)

In the development of long-run series of production,

the Planning Prices of 1955 (UPP) have been used as an unchanging measuring device. They bear no direct relationship to final consumer prices and do not include the levy on production (Produktionsfondsabgabe) by the state or the turnover and sales taxes (Umsatz and Gewerbesteuer).

In general they are useful for long-run comparisons, obviating the need to adjust for price changes. However, because of changes in productivity in the production of various goods such UPP prices do not accurately reflect the changing relative value of the various goods produced.

The Price Reforms initiated by the New Economic System in 1963 sought to assign prices reflecting these relative values. A new price level was established in 1967 and prices after 1967 have been made constant at this level. Hence they are called kP 67 prices. These prices also do not include the production levy for the state nor the turnover and sales taxes.

Classification of Firms

A "firm" in the industry sector is any firm whose main production was industrial production. Most of the firms actually counted have more than ten employees. A firm by definition is a "self-balancing" entity, and it

may be one physical unit or a unit scattered geographically but acting as a single enterprise.

Social Organization of Firms

Four types of control are distinguished in East German industry.

1. Government Enterprises (V.E.B. - or Volkseigene Betriebe) These firms are generally organized in a larger unit called the Association of Government Enterprises (Vereinigungen Volkseigenbetriebe, or V.V.B.).
2. Government Cooperatives (Genossenschaften).
3. State-Private Partnerships (firms owned jointly by the state and by private individuals).
4. Private firms (held privately by individuals or partners).

The first two types are known officially as socialist firms.

The New E.L.N. Industry Classification System:

For purposes of more efficient planning the classification system for industry (illustrated previously in Figure I-1) was changed in 1968 to a new system called the Product and Output Classification System (Erzeugnis und Leistungsnomenklatur der D.D.R.) - or

E.L.N. for short.

These changes are illustrated in the comparative chart on the next page. Industry has now been subdivided into ten sectors instead of four. The formal distinction between "primary" and "secondary" industry has been dropped, which is probably a step in the right direction since the inclusion of chemicals in the primary sector was a doubtful procedure to begin with.

Unfortunately these changes came too late to be incorporated into the present study. Such incorporation might have been undertaken if the 1969 Yearbook, which first makes use of the new system, had presented a clear way of adapting pre-1968 data to the new system. This was not done, however, and for several reasons it is not an easy or even possible job. Though names of industrial sectors and subsectors are often the same in the two systems, different firms have sometimes been included and the boundary lines are somewhat different (see 1969 S.J.D.D.R. p. 95).

Waterworks is included in industry for the first time, while firms of the German Railway are no longer included in industry. However, the brackets in the following page indicate the general way in which the two

systems can be fitted into each other, and sometimes data for 1968 were estimated on the basis of this broad comparability.

A word should also be said about the general reliability of published East German data. It would be presumptuous of western scholars to impugn the honesty of East German statisticians. A legitimate question can be raised, however, about the possible statistical biases of economic planning. Some western scholars have assumed that East German output data are inherently suspect because they are used as an instrument of propaganda to "prove" the superiority of socialist economic development over capitalist economic growth.¹ Other scholars point out, however, that such argumentation overlooks the fact that the accurate gathering and publication of data in East Germany is an important prerequisite for effective planning, and therefore in the interest of East German planners. Peter Mitzscherling, a noted West German scholar, takes this viewpoint and observes that planning models and forecasts are based on official state publications.² All scholarly work on East Germany is heavily dependent on

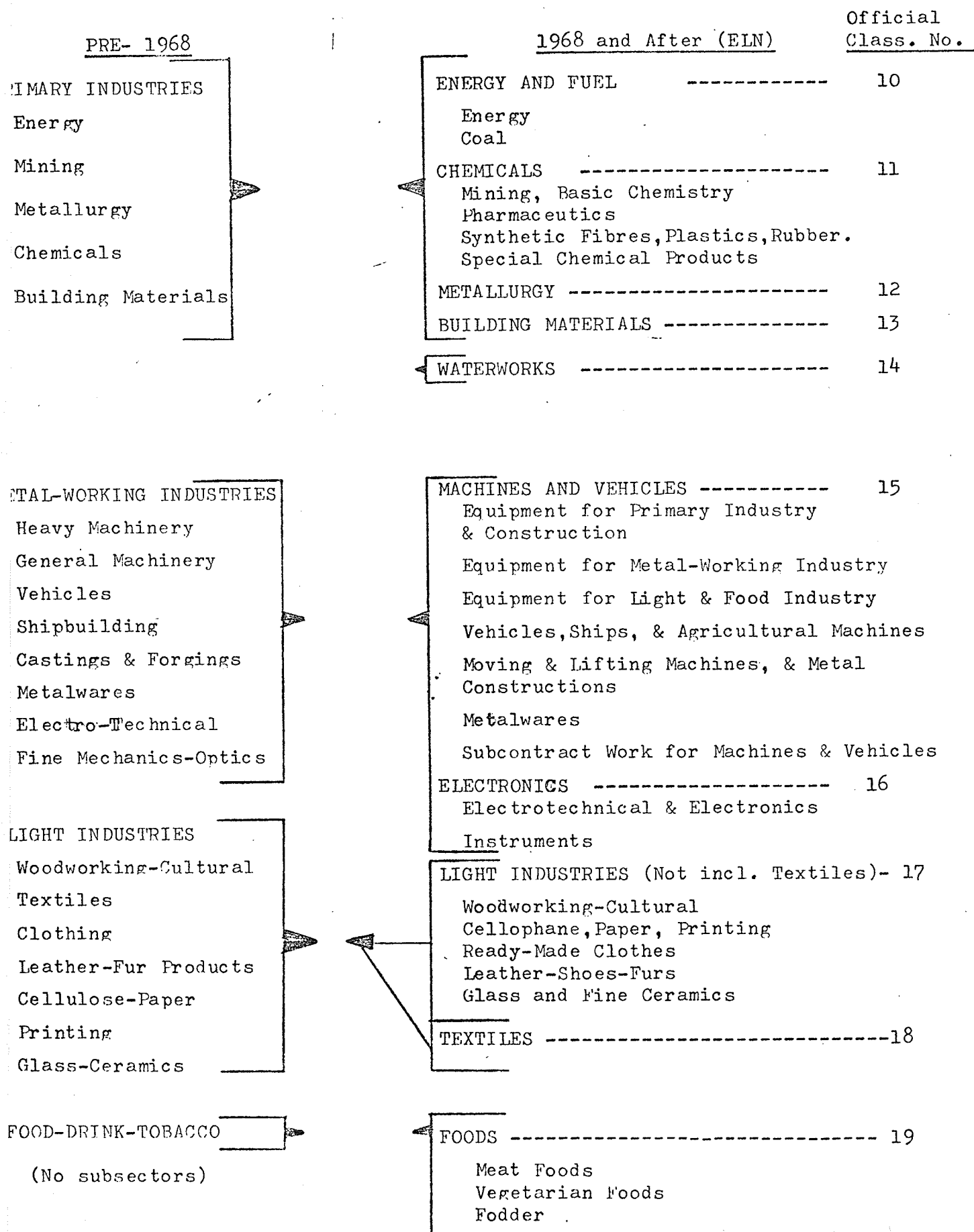
1 See Konstantin Pritzel, in Deutsche Fragen, Nr. 5, 1969, p. 82, and Bruno Gleitze, Die Industrie der Sowjetzone unter dem gescheiterten Siebenjahrplan, p. 25.

2 Peter Mitzscherling, "Zunehmender Dirigismus oder Ausbau des neuen oekonomischen Systems?", VHWF, 1969, Nr. 2, p. 236. See also f.n. 2, p. 17 in this thesis. Mitzscherling also summarizes the interpretive problems that are encountered in international comparisons.

official East German sources.¹ Such data is not as plentiful as one would wish, but the main problem with the material that exists is not one of general reliability but interpretation. This latter problem is especially difficult for scholars who wish to make inter-country comparisons of output levels and output growth. It must be stressed that this is not the purpose of the present study. For our relative measurements it is generally enough to understand the East German concepts and to apply them as consistently as possible.

¹ Thus, W. Stolper op. cit. indicates in his study that East German data "have been taken at their face value unless there were compelling reasons for doing something else...." (pp. 235-236).

(For SECTORS & SUBSECTORS : Bereiche und Zweiggruppen)



CHAPTER II

SOCIALIST ORGANIZATION AND PLANNING IN EAST GERMANY

Our purpose in this chapter is to examine the growth of socialist organization and planning in East German industry, particularly since about 1960.

Two of the outstanding features of the East German economic system are the socialist (state) ownership of the means of production, and the development of a centralized planning system. It might be argued (and illustrated from West European experience) that one of these features can exist independently of the other but there is also a considerable interdependence between them. A high degree of centralized planning and control of economic processes will be very difficult unless the state has considerable ownership rights. Conversely, if it has the latter it will "plan" its production just like private owners of business do. In East Germany, in any case, it has been recognized that the two complement each other and there has been a parallel development of both.¹

¹ It was stated explicitly in the state takeover of retail and wholesale distribution in East Germany that a prime purpose was to integrate this sector of the economy into the state planning system. (Cf. H. Mueller and K. Reissig, Wirtschaftswunder DDR, p. 109).

To understand the planning process in East Germany, then, and to evaluate its impact on structural change, it is necessary to examine both the extent of socialist organization in the country (part A) and the growth of the planning system itself (part B). In addition, some of the specific investment, employment, and production goals will be analyzed (part C).

A. STATE OWNERSHIP IN EAST GERMAN INDUSTRY¹

State ownership of most property, including land, resources, and production facilities, grew rapidly during the Fifties. In 1950 state-owned enterprises accounted for 56.8% of the total Net National Product.² The sectors in which state ownership was most important were transportation and communication (83.7%), industry (68.8%) and trade (60.7%). Only 41.3% of production in construction was accounted for by state firms, while in agriculture and forestry the state share of production was only 3.4%.

Table II-1 illustrates the growth in

¹ As noted in Chapter I, state cooperatives (Genossenschaften) and wholly owned state enterprises (VEBs) constitute "socialist" or state firms. In industry, co-operatives play an insignificant role, except in the Foods sector. Private firms have no direct capital participation by government, although they must produce in accordance with state plans, while semi-private firms make use of state finances.

² S.J.D.D.R. 1969, p. 39.

importance of state-owned enterprises between 1950 and 1960 and during the 1960s. By 1960 socialist firms in industry had increased their share of net product to 84.2%, and in all other sectors the state's share had also increased significantly. The most dramatic increase occurred in agriculture, where in 1960 production by state farms accounted for 78.3% of the total.

During the 1960s the share of net production coming from state enterprises has continued to increase appreciably in agriculture, but in all other sectors it has remained more or less constant. It appears that for most sectors little further socialization is contemplated.

In the industrial sector the degree of state ownership reached a peak in 1965 (with 84.4%) and has declined slightly since that time. Table II-1 indicates that during this same period the share of private enterprise has remained virtually constant. The decline in the share of state firms has been compensated for by an increase in the share of semi-private firms (enterprises with state participation). Between 1960 and 1968 the share of net product accounted for by such firms increased from 7.4 to 11.1% of the total.

It is not easy to account for this development. In 1966 there were almost ten thousand private and semi-private factories in East Germany and it is apparent from

TABLE II-1

NET NATIONAL PRODUCT BY ECONOMIC ORGANIZATION¹ IN CURRENT PRICES

Year	All Sectors	Industry and Productive Handicrafts	Construction	Agriculture and Forestry	Transportation and Communication	Trade	Other Sectors
1960		84.2	72.5	78.3	91.4	84.8	92.5
1963		83.9	73.9	89.5	92.4	86.1	91.9
1964		84.2	74.4	88.3	93.7	87.4	91.7
1965		84.4	74.9	89.8	93.2	87.4	92.7
1966 ²		84.1	75.9	89.5	93.1	87.5	93.4
1967 ²		82.9	81.7	89.7	94.1	86.6	93.2
1968 ²	85.1	82.6	79.3	94.1	94.0	86.5	94.5

Per Cent Produced by State Enterprises (Socialistic)

¹ Calculations for 1960 - 1967 based on data in S.J.D.D.R., 1968, Table 3, pp. 40 - 41. Those for 1968 from S.J.D.D.R., 1969, Table 1, p. 39.

² Tentative Figures.

TABLE II-1 Continued

Per Cent Produced by Enterprises with State Participation

Year	All Sectors	Industry and Productive Handicrafts	Construction	Agriculture and Forestry	Transportation and Communication	Trade	Other Sectors
1960		7.4	9.8		2.7	5.4	1.8
1963		9.4	11.4		3.1	5.8	2.4
1964		9.2	11.2	0.1	2.7	5.9	3.1
1965		9.5	11.4	0.1	3.2	6.0	3.2
1966		10.0	11.3	0.2	3.3	6.3	3.4
1967		11.0	8.9	0.1	2.9	6.9	3.1
1968	8.6	11.1	10.6	0.1	3.1	7.1	2.5
PER CENT PRODUCED BY PRIVATE ENTERPRISES							
1960		8.3	17.7	21.7	5.8	9.8	5.7
1963		6.7	14.8	10.5	4.5	8.1	5.7
1964		6.7	14.5	11.6	3.6	6.6	5.1
1965		6.2	13.8	10.1	3.7	6.5	4.1
1966		5.9	12.8	10.3	3.6	6.2	3.3
1967		6.1	9.4	10.2	3.0	6.5	3.6
1968	6.3	6.2	10.1	5.7	2.9	6.4	3.0

these tables that the government feels no compulsion at the present time to liquidate them.¹ The average semi-private firm employs 63 persons, while the private firms are considerably smaller. There is some evidence that the state permits their existence (and even their growing relative importance) because it feels that some enterprises can be run most efficiently outside of the public sector. Professor Jean Edward Smith gives several examples of aggressive, successful semi-private enterprises. The state supplies them with capital and permits them to expand production, because of their success, and the enterprises in turn find it a convenient way to meet their capital requirements.² The writer was also given to understand by the owner of one such enterprise that special tax considerations had encouraged him to switch from a completely private to a semi-private operation.³

Despite these developments all major industrial firms, and over eighty percent of all industrial production, remain under the direct ownership and control of the state. This

1 Jean Edward Smith, Germany Beyond the Wall, p. 102.

2 Ibid, pp. 102-106.

3 Apparently the taxes on profits of a private firm are higher than the combined tax and capital share dividend paid by the semi-private firm to the state.

permits the latter to carry out and enforce its planning directives, and thereby presumably increases its influence on the overall direction of the economy.

Within the industrial sector the degree of state participation in the output of various subsectors differs considerably. In 1968 the picture was as follows:¹

TABLE II-2

INDUSTRY OUTPUT BY TYPE OF ORGANIZATION - 1968

Industrial Subsector	Percent of Gross Production by		
	State Enterprises	Semi- Private	Private
Energy and Fuel	99.9	0.1	0
Chemicals	91.6	7.0	1.4
Metallurgy	99.0	0.9	0.1
Building Materials	86.2	12.1	1.7
Machines and Vehicles	90.3	8.8	0.9
Electrotechnic-Electronic	91.8	7.1	1.1
Light Industry (exc. textiles)	70.9	23.4	5.7
Textiles	74.4	22.2	3.4
Food Industry	90.2	8.4	1.4

Direct state control over economic activity, through ownership, is most marked in the energy, fuel, electrotechnical, metallurgy, and chemicals sectors. It is less important in building materials and considerably less

¹ Calculations based on S.J.D.D.R. 1969, p. 104.

important in Light Industry. This may have some bearing on the effectiveness of state planning in these various sectors.

However, even in those subsectors with relatively low state participation the state planners exercise considerable control over production and the allocation of productive factors, as will be seen in the next section. Directly or indirectly, then, all branches of industry are closely tied in with the overall directives of the government.

B. THE DEVELOPMENT OF ECONOMIC PLANNING IN EAST GERMANY

Until the founding of the German Democratic Republic in October, 1949, the territory of East Germany was administered by the Soviet Military Administration (SMAD). It was during this period that a Soviet-type economic planning system was evolved, along with socialist ownership of property.

Immediately after the war the old German "Laender" (states) were placed in charge of industry. They appointed the local managers and directors of business and set up planning committees to coordinate production within the state. These local bodies were unable, however, to develop and coordinate national production goals and by 1947 the Soviet Administration decided to replace them with a national planning agency, the German Economic Commission.¹

This commission, which later became the nucleus of the G.D.R. government, was made responsible for a wide range of economic activities, including industry, finance, transportation, trade, labor, agriculture and forestry,

¹ SMAD Order No. 138, June 27, 1947.

and interzonal and foreign trade.¹ Its powers were further strengthened in 1948 when several executive branches of the government, including Justice, Health and Education, were represented in it. Later that same year a number of mass organizations and political parties were also given representation.²

By June, 1948, the Commission had developed a Two Year Economic Plan, whose purpose was to stimulate production and to acquaint workers and managers alike with the operations of central planning.³ The specific aim of the plan was to attain 81% of the 1936 level of production by the end of 1950, a goal which was actually reached half a year ahead of schedule.⁴

The success of this modest first plan inspired the government to initiate the First Five Year Plan (1951 - 1955). This plan signalled the beginning of intensive

1 Arthur M. Hanhardt, The German Democratic Republic, 1968, p. 31.

2 SMAD Orders No. 32, Feb. 12, 1948, and No. 183, Nov. 27, 1948. See Hans Mueller and Karl Reissig, Wirtschaftswunder D.D.R., pp. 135 ff.

3 Walter Ulbricht, "Der deutsche Zweijahrplan", Zur Sozialistischen Entwicklung der Volkswirtschaft seit 1945, Dietz, 1959, pp. 139-149.

4 A.M. Hanhardt, Ibid, p. 51.

socialist development.¹ Stress was placed on the rapid development of heavy industry, especially metallurgy and coal mining. The ministry of planning, till then a ministry among many others, became a direct organ of the Council of Ministers, thereby strengthening its position considerably. While many problems were encountered in the implementation of this plan (about one-quarter of the firms were discovered to be producing at a loss), the production goals were exceeded by about 5%.²

This qualified success prompted the Second Five Year Plan (1956-1960). It set out to increase production by 55% (60% in Primary Industry and Metal Processing, and 40% in Light Industry and Food). State investment was to double over the first plan, and worker productivity was to increase by 150%. The leading sectors were to be energy, fuel, building materials, machines, and chemicals.

During the course of this plan a major reorganization took place within the planning system. This involved primarily the granting of much more authority to the Associations

1 W. Ulbricht, "Die Gegenwaertige Lage und die neuen Aufgaben der SED," Zur Geschichte der Deutschen Arbeiterbewegung, Dietz, 1960, p. 407.

2 Cf. H. Mueller and K. Reissig, op. cit., pp. 180-236. Also, Peter Mitzscherling "Zunehmender Dirigismus oder Ausbau des neuen oekonomischen Systems?", V.H.W.F., Nr. 2, 1969, pp. 227 -254.

of State Enterprises (VVBs).¹ Between 1948 and 1958 seventy-four such associations had been formed, but they had acted largely as administrative bodies with little real power to originate or influence economic plans. In 1958 they became an essential part of the planning process (See Figure II-1). This involved, in effect, a slight decentralization of the planning process, a step in the direction of more radical reforms undertaken in 1963.

In 1958 the Second Five Year Plan was discontinued and transformed into the Seven Year Plan (1959 - 1965).² Reasons given for this were that by this time long-run plans for the period beyond 1960 had already been developed, and the Soviet Union was beginning its own Seven Year Plan in that year. It was felt important to coordinate the timing of the East German plan with the latter.³

The Seven Year Plan was a very ambitious undertaking. Its stated goal was to increase the per-capita production of many industrial and consumer goods to the level of West Germany and other capitalist countries. The share of

1 GBL. I, 1958, pp. 117-120.

2 GBL. I, 1959, pp. 704 ff.

3 H. Mueller and K. Reissig, op. cit., p. 306

consumer goods as a percent of Gross Social Product was to be raised from 59% to 67%, at the same time that investments and exports were to be greatly increased.¹

The spirit of optimism on which this plan was based was partly the result of unusually high rates of growth in the Gross Social Product in 1957 and 1958 (7% and 12% respectively), which had exceeded the planners' expectations. The rate of growth in 1959 itself was a very encouraging 11%. However, by 1960 the growth rate had dropped to 6%, and in 1961, the year of the building of the wall, the growth rate fell to 4%.²

Many reasons have been given for this sharp reversal.³ Part of the problem undoubtedly was the vigorous land collectivization program undertaken in 1960, a step not envisaged in the Seven Year Plan and strongly resisted by many farmers. This led to a marked increase in emigration from East Germany and forced retrenchments in other parts of the economy. It proved to be extremely difficult to come up with the planned investment funds, the average increase being about 7% instead of the hoped-for 10.5%. At the same time there were frequent complaints

1 Peter Mitzscherling, op. cit., pp. 228-229.

2 Horst Seidler, "Die Gegenwaertigen Grundtendenzen der Wirtschaft Mitteldeutschlands", VHWF, Nr. 2, 1965, p. 234.

3 Ibid., p. 238.

that existing capital assets were being used very badly.¹ By the end of 1962 the situation prompted radically new planning proposals from economists and government leaders, leading to the abrogation of the Seven Year Plan and the establishment of what became known as The New Economic System.

THE NEW ECONOMIC SYSTEM: 1963 - 1970²

The New Economic System as conceived in 1963 had many important facets. Its theoretical basis reflected the discussions that had taken place in the U.S.S.R., East Germany and other socialist states in Eastern Europe, centering around the reform ideas of the Soviet economist E.G. Liberman.³ These ideas involved a basic reorganization of the planning structure, and a new system of incentives.

1 See W. Ulbricht's criticism in "Protokoll der 15 Tagung des Zk der SED", Neues Deutschland, March 24, 1962.

2 Official documents outlining the major reforms of this period are found at the end of this section. Other references to the voluminous literature on the subject are given in footnotes and in the bibliography.

3 Liberman's own ideas may be found in English in Current Digest of the Soviet Press, Vol. 14, Oct. 3, 1962. For bibliographical notes and the impact of these ideas on East German economists and planners see James R. Elliott and Anthony E. Scaperlanda, "East Germany's Liberman-type Reforms in Perspective", Quarterly Review of Economics and Business, Autumn 1966, pp. 39-52.

According to Liberman and his colleagues planning would be most effective if it proceeded from the bottom up, instead of from the top down. The government should work out a rational system of prices,¹ reflecting the relative marginal costs of goods, and permit each firm to set up its production and sales proposals based on those prices. The state itself would examine each enterprise plan and make certain that the realization of all plans combined was feasible and in the public interest. In addition, it would continue to regulate such important economic functions as investment, consumption, and government expenditure. It could also continue to regulate quite closely the production of goods considered crucial for the economy. Within these constraints the government would permit planning to emanate from each individual enterprise.

A new incentive system was also envisaged. Managers and enterprises would no longer be evaluated on the basis of gross production (known as "Tonnenideologie" in German) but on the basis of profit. The profit made by each firm would depend on the ability of that firm to sell the goods which it produced, and its ability to produce them as

1 For a good discussion of rational prices, and the difficulty involved in deriving them in a socialist system, see H. Kohler, Scarcity Challenged, pp. 499-506.

cheaply as possible. Consumers, (meaning primarily other firms in the case of production goods) could refuse to accept goods which did not meet their needs and specifications. The stress, therefore, was to be on the efficient manufacture of "Warenproduktion" (goods easily sold).

In addition, the firm's profits would be related to capital assets and investment. Bonuses to workers and management would be based on the rate of profit in relation to capital. The idea was to encourage firms to use their capital resources as efficiently as possible.

Such proposals were discussed by economists and planners in East Germany long before 1963, and formed the basis of the new system developed in that year.¹ The new system in East Germany involved a major reorganization of the planning structure, a new type of pricing system (introduced gradually in the following years), and a new system of incentives to encourage more efficient production and the more efficient use of capital resources.

¹ Already in the mid-Fifties Professor Friedrich Behrens and Dr. Arne Benary had proposed a radically de-centralized form of planning, but their ideas found little acceptance. See Jean Edward Smith, Germany Beyond the Wall, p. 96, and Gert Leptin, "Das 'Neue Oekonomische System' Mitteldeutschlands", in K.C. Thalheim and H.H. Hoehmann, Wirtschaftsreformen in Osteuropa, pp. 113-119.

Planning was decentralized in East Germany in several ways. First, the Associations of State Enterprises (VVBs) were given far-reaching powers in the planning process, assuming general direction over the activities of the individual state enterprises (VEBs). In a sense this represented a simultaneous upward and downward movement in authority. Prior to this the VEBs had been under the VVBs administratively, but financially and economically they were directly accountable to the appropriate central government body. This dual relationship between factories and their control agencies was considered a major problem in the old system. The VVBs found that they could not effectively influence production and day-to-day management, while the central authorities were too far removed from the VEB to give it good direction.

The solution, and the first step in the decentralization process, was to give the VVBs both administrative and economic functions, to make them independent, self-balancing entities, creating their own input-output balances of resources and production. By 1964 eighty VVBs were put on such a paying basis. This number has

since been increased to ninety four.¹

The VVBs took over all of the financial dealings between enterprises under their command and the central government. For example, a part of the VEBs' net profit which previously went into the state budget now went to the VVBs. Investment outlays previously assigned out of the state budget were now derived largely from the profits of the enterprises, which were handled by the VVBs. In effect, the General Directors of the VVBs directly controlled about two-thirds of industrial production in big socialist concerns, and indirectly, through "production-groups" (Erzeugnisgruppen) they were given general control over smaller state concerns and private enterprises as well.²

1 The appendix to the original guidelines showed that decisions involving input-output balances would change their frequency from 1963 to 1964 (because of the new system) as follows:

	<u>1963</u>	<u>1964</u>
State Planning Commission	695	0
National Economic Council (later changed to industrial ministries)	220	808
Central VVBs	500	2,040
District VVBs	33	47

It is clear that the role of the state planning commission was changed drastically from decision making to plan design. More decision making was envisaged for the National Economic Council, but especially for the centrally organized VVBs (see K.C. Thalheim, Die Wirtschaft der Sowjetzone in Krise und Umbau, p. 74.

2 Manfred Regin, "Recent Reforms in East Germany," The World Today, July, 1965, p. 304.

Eight new industrial ministries were established at the 11th Congress of the Central Committee of the S.E.D. in December, 1965.¹ Through these ministries the government was able to maintain general control over the allocation of investment, credit, and the operations of the annual plans. At the same time these plans underwent considerable modification. Their scope was reduced to the point where they covered only 250 major products, or about three products per each VVB. Therefore, while control on top has been maintained, the constraints have been eased very sharply and the VVBs have a much wider control over production than before.

Subject to approval by the VVB every factory can work out the list of goods it intends to produce. It can only produce those goods for which it has a contract, however, so that production is governed not only by the plan but by direct contractual ties with the purchaser.

Thus, under the new system, the VVBs are responsible to the higher bodies of industrial management, and the individual enterprises are responsible to the VVB. Most

¹ These were, and are: Primary Industry; Mining, Metallurgy, and Potash; Chemicals; Electro-Technic and Electronics; Heavy Machinery and Plant Construction; Processing Machines and Vehicles; Light Industry; and District-Led Industry and Food Industry. An additional important ministry, for Materials, was created as a watch dog over all economic sectors. (G.B.L. Teil I, Nr. 5, 1966, pp. 53-56).

investment and production decisions are made through negotiation between the latter and the VVB, while annual planning goals and long-range perspectives are worked out primarily between the state ministries and the VVB. Certain crucial firms and products still remain under the direct control and direction of the central authorities.

The decentralization involved in giving more power to the VVBs was accompanied by regional decentralization as well. All district-oriented firms (including products of the food and refreshment industry, and products somewhat unique to a particular district) were placed directly under district or county economic councils, which in turn received much greater autonomy than before.

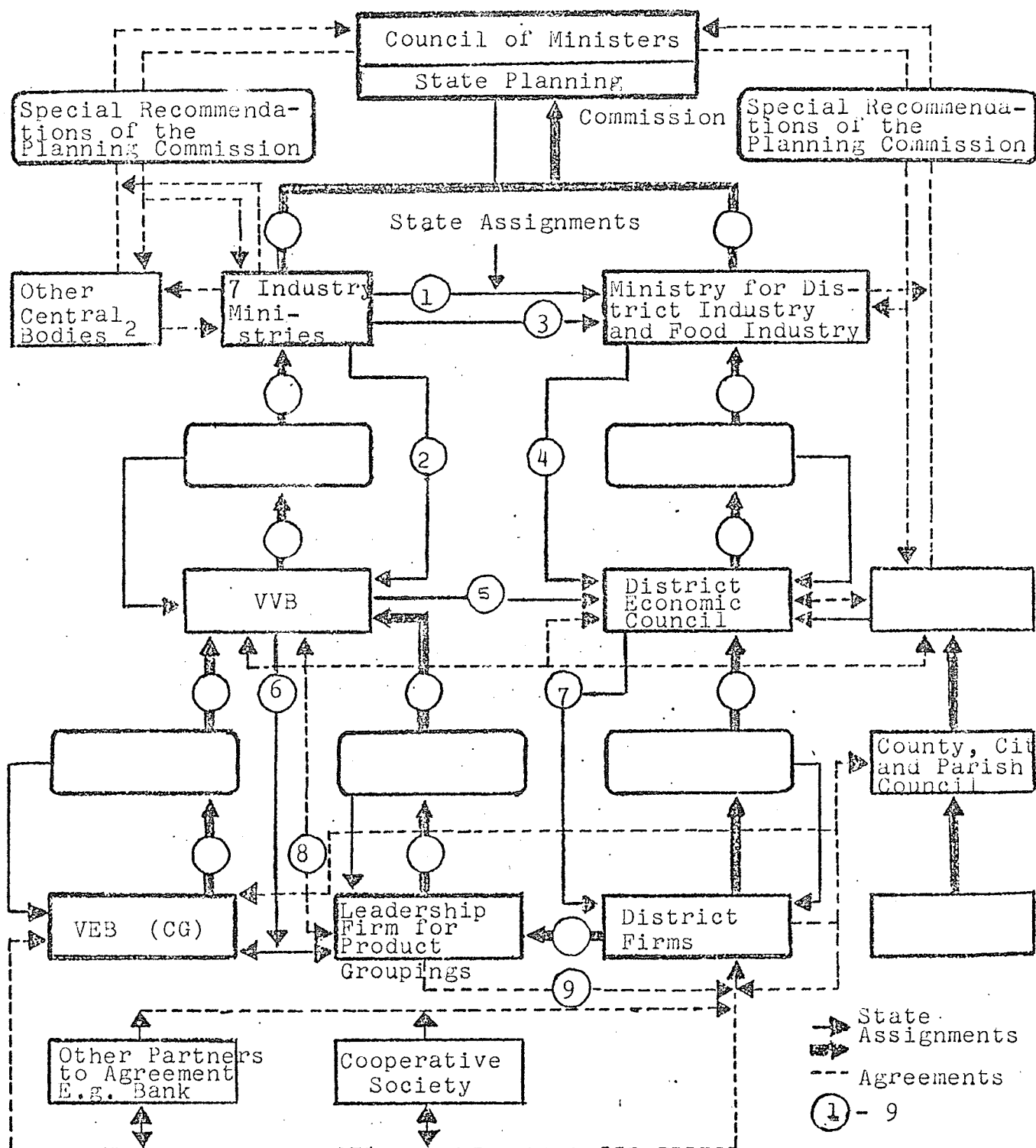
The nature of these changes is illustrated in Figure II-1.

Figure II-1 a illustrates a part of the annual planning process in industry, viz, how state directives are passed down from the Council of Ministers and the State Planning Commission to the industry ministries and eventually to individual enterprises (follow arrows with the thin lines). The numbers in the diagram indicate the basic steps that are taken.

1. Early in the year preceding the "planning year"

ANNUAL INDUSTRIAL PLAN¹

a) Issuing of State Assignments

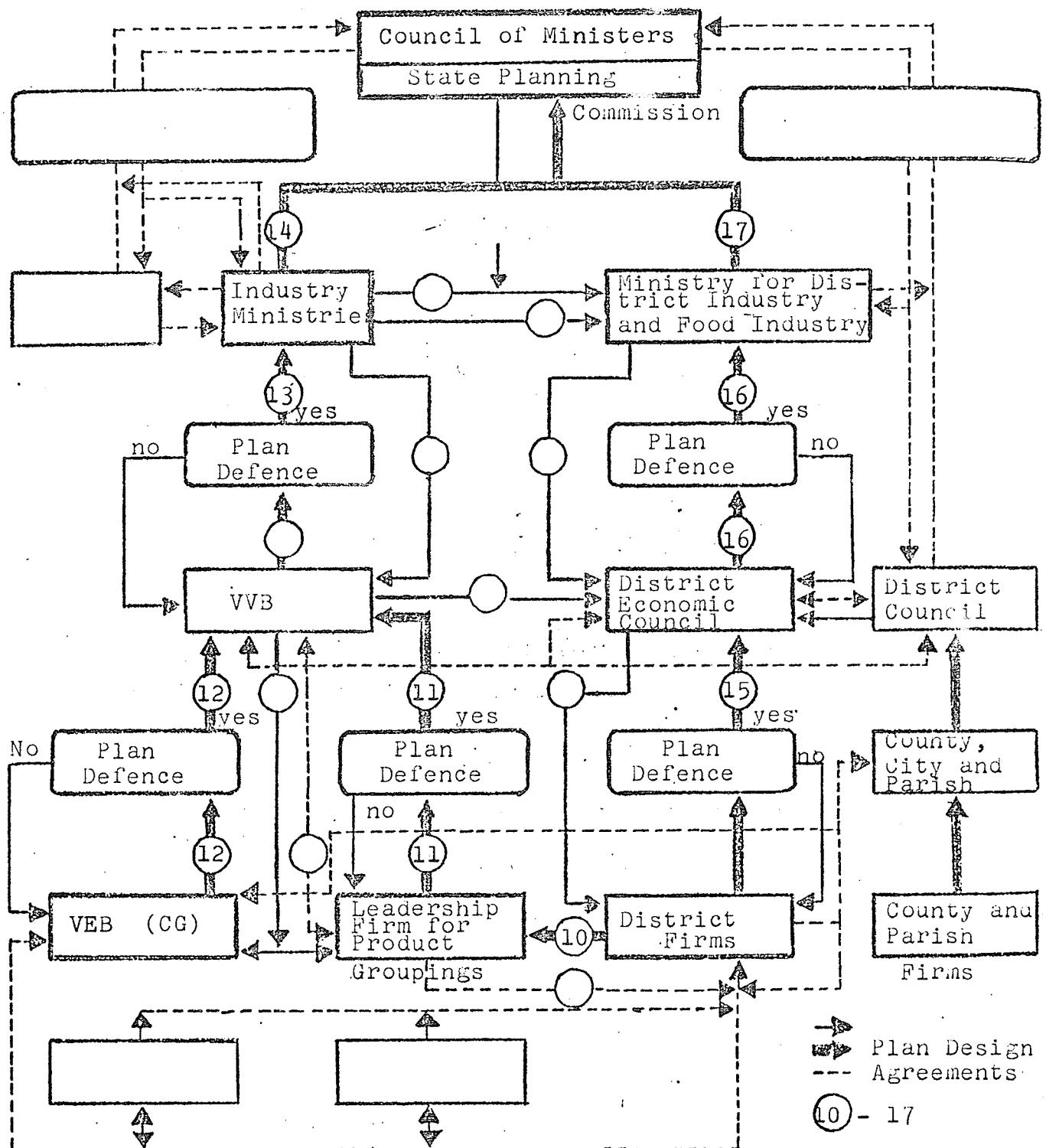


1 Adapted from material prepared by the Party Training Institute "Karl Marx" affiliated with the Central Committee of the SED.

2 "Other Central Bodies" includes: State Employment and Wage Board, the Central Bank (Deutsche Notenbank), State Investment Bank, and several other vocational, academic and research boards.

ANNUAL INDUSTRIAL PLAN

b) Enterprise Proposals and Plan Defence



state assignments regarding overall goals for the district-led enterprises and for important investment, export and consumer goods for all industry are passed along to the industry ministries. These ministries simultaneously receive recommendations from other central bodies, such as the investment bank, central bank, and the state employment and wage board (see the broken lines which indicate that constant negotiations are going on, resulting in numerous agreements of varying duration).

2. These directives are discussed by the industry ministries and then passed on to the VVBs under their direction. The instructions for the VVBs include, in addition to their own assignments, export and finished goods plans for the district-led enterprises.
3. Simultaneously with (2) basic technical, investment, wage funds, and export and finished goods assignments are passed on to the Ministry for District Industry and Food Industry. (It seems that export and finished goods assignments are forwarded here primarily for information. As (5) indicates, the VVBs coordinate and direct the

fulfillment of these particular directives).

4. The District Ministry passes these instructions, along with special recommendations from the Planning Commission and other specialized ministries, to the District Economic Council (with the exception of export and finished goods plans).
5. Instructions for exports and finished goods are passed along from the VVBs to the District Economic Council.
6. The state assignments are passed on from the VVBs to the large state enterprises under their direction. C.G. indicates that they are Central-Government firms (i.e. state firms related directly to the central government through the VVBs.)
7. Simultaneously the District Council forwards all state assignments to the firms under its direction.
- 8 & 9. While this is going on, a separate control over all production is exercised by designated VVBs through "product groupings". This is to guarantee that all production plans, including the production of private, semi-private, and

district firms not otherwise related to the VVBs, can be coordinated and balanced. In practice a "leadership" firm is designated by the VVB for this purpose. The combined plans and agreements are cleared with the VVBs, so that the latter have overall control over the production of the non-government sector as well.¹

Having received the state assignments, the individual enterprises formulate their production plans, keeping in mind the investments which will be allocated to them, their share of the labor force, and the extent of their sales contracts. Their individual plans are then correlated with the state directives and passed upward, either to the VVBs or to the various district councils. This second stage of the planning process is illustrated in Figure II-1 (b). Again it will be helpful to note some of the important steps that are taken.

10. Plans for the production of finished goods and export products are passed on from the district-led

¹ Before 1967 these "product-grouping" controls seem to have been exercised largely to assure uniform production standards, introduction of new techniques, etc. Since then, however, more production control and material balancing seems to have been delegated to this sector. (Cf. Gert Leptin, op. cit., p. 121).

firms to the leadership firms in the product groupings.

11. These plans are forwarded in turn to the VVBs, and a period of negotiation begins. If the VVB directors accept the plan it is taken up into the overall VVB plan. If not, it goes back to the leadership firm for review and revision.
12. Simultaneously the VEBs forward their individual plans to the appropriate VVB, and they are either accepted by the latter or passed back for revision.
13. The VVB now formulates a general plan, based on the plans from the product groupings and the large state enterprises, and forwards the plan to the appropriate Industry Ministry. The latter either accepts it after negotiation or returns it for revision and further negotiation.
14. The Ministry forwards the final plans to the Planning Commission which in turn evaluates it and works out its feasibility and desirability.
- 15 - 17. Meanwhile a similar process has been going on between the district firms and the various

district councils. This plan eventually comes to the Planning Commission which, in conjunction with the Council of Ministers, coordinates it with the other plans and with the goals of the government and issues the combined plans as the official production goals for the coming year.

It would appear from these diagrams, and from official statements about the lines of authority in the planning process, that the negotiations between the VVBs and the industry ministries are extremely crucial and practically final.¹ The writer was given to understand during personal interviews with economists that as long as production plans are more or less realized and there is no major departure from state directives the VVBs are left virtually alone. However, if, as apparently occurred in the Chemical industry in 1969, achievements fall behind expectations considerable pressure will be exerted by the appropriate Ministry, and on the latter by the Council of Ministers.

In addition to the planning reorganization just

¹ Cf. Gert Leptin, op. cit. p. 129. He observes that in the organizational reforms of 1965-66 the new ministries were asked to strengthen the role of the VVBs, but this very assignment revealed the superior authority assigned to the ministries themselves.

described, the New Economic System in East Germany led to a new system of incentives, geared to profits. In order to facilitate the implementation of profit goals long overdue price reforms were undertaken. First, a radical revaluation of capital assets (Umbewertung der Grundmittel) was announced in January, 1964. These assets had been greatly undervalued in the past in an effort to increase capital formation. This had resulted in a very uneconomical use of such assets. The reforms carried through raised the gross asset value of industry in the D.D.R. by 52%, to 105 billion Mark.¹

This reform was followed very closely by industry price changes, announced April 1, 1964. New sales prices for such products as coal, electricity, gas, steam, metals, sodium and salts were introduced, and these have been followed by further price changes in subsequent years. By 1967 a major revision of most prices had been accomplished. The new prices sought to be more "rational" and were based on estimated 1967 costs of production in technically advanced firms. Because consumer prices were to remain constant, while raw material costs had increased appreciably, most firms were forced into cost-saving measures. In many

¹ Peter Mitzscherling, "Zunehmender Dirigismus oder Ausbau des neuen Oekonomischen Systems?" VHWF, Nr. 2, 1969, p. 232.

cases temporary subsidies proved to be necessary to enable firms to realize a profit.¹ This was now especially important because firms were expected to pay their own way (become "rentabel"), which meant that they were to finance most of their social and industrial investment requirements and their personal bonuses out of profits from sales. These requirements were introduced in stages to permit firms to adapt to the new discipline that was required. Thus, for example, it was only at the 11th Congress of the Central Committee of the SED, held December 15 - 18, 1965, that some of these requirements were introduced. This Congress produced a Perspective Plan for 1966 - 1970 in which all of the major reforms were to be completed.

At the present time, then, profit has become an extremely important element for the East German industrial enterprise, both as an efficiency indicator and as a

¹ Of course, primary industrial firms supplying previously undervalued resources were now put on a paying basis and subsidies to these firms were sharply reduced or eliminated. The result was a net drop in subsidies (see Manfred Melzer, "Preispolitik und Preisbildungsprobleme in der D.D.R.", VHWF, Nr. 3, 1969, p. 321.

² For a good discussion of these developments see Hans Mueller & Karl Reissig, op. cit., pp. 420-425.

basic factor in determining the size of bonus funds and investment.¹ Bonus funds are granted only if the enterprise has fulfilled its production goal (so that the gross output indicator is still important) but they are also tied to profit. What is more, the source of profit is always taken into account. It must arise to at least some extent out of the introduction of new techniques and must be accompanied by the fulfillment of plans for exports. Failure to meet export and new technology requirement results in a 15% cut in the bonus fund, and another 10% can be cut off if the firm does not comply with the wage directives of the state (countering the temptation to increase profits through wage squeezes.) However, such cuts can under no circumstances total more

¹ It is actually envisaged that planned investment for most firms will be derived up to about 40% out of amortization funds, 30% out of profit, and 30% from credit. Interest rates on the latter range from 3 - 15%. Amortization funds do not come out of profit but are counted as cost. Credits must eventually be paid for out of profits. The planned dependence on the banks is another control instrument over the firm's investment. These observations are based on discussions with Professors Bartl and Harder at the Rostock Economic Institute and with management at the Ruddersdorfer Cement Works near Berlin. See also G. Noerenberg, Sozialistische Oekonomie, Kategorien und Begriffe, pp. 60-61; Kurt Maier, Zur Rolle des Gewinns in Investitionsprozess der volkseigenen Industrie, Habilitationsschrift, Berlin Karlshorst, 1967 and Horst Behrens, Die Rolle des Gewinns und die Faktoren der Gewinnbildung in der volkseigenen Industrie, Dissertation at Berlin-Karlshorst, 1968.

than two-thirds of the planned bonus fund.¹

As stated before, efficiency is determined by measuring profit in relation to capital assets. This is meant to increase the efficient use of the latter. This purpose is also furthered by a capital charge, varying from 1 - 6%, called the capital fund contribution (Produktionsfondsabgabe).

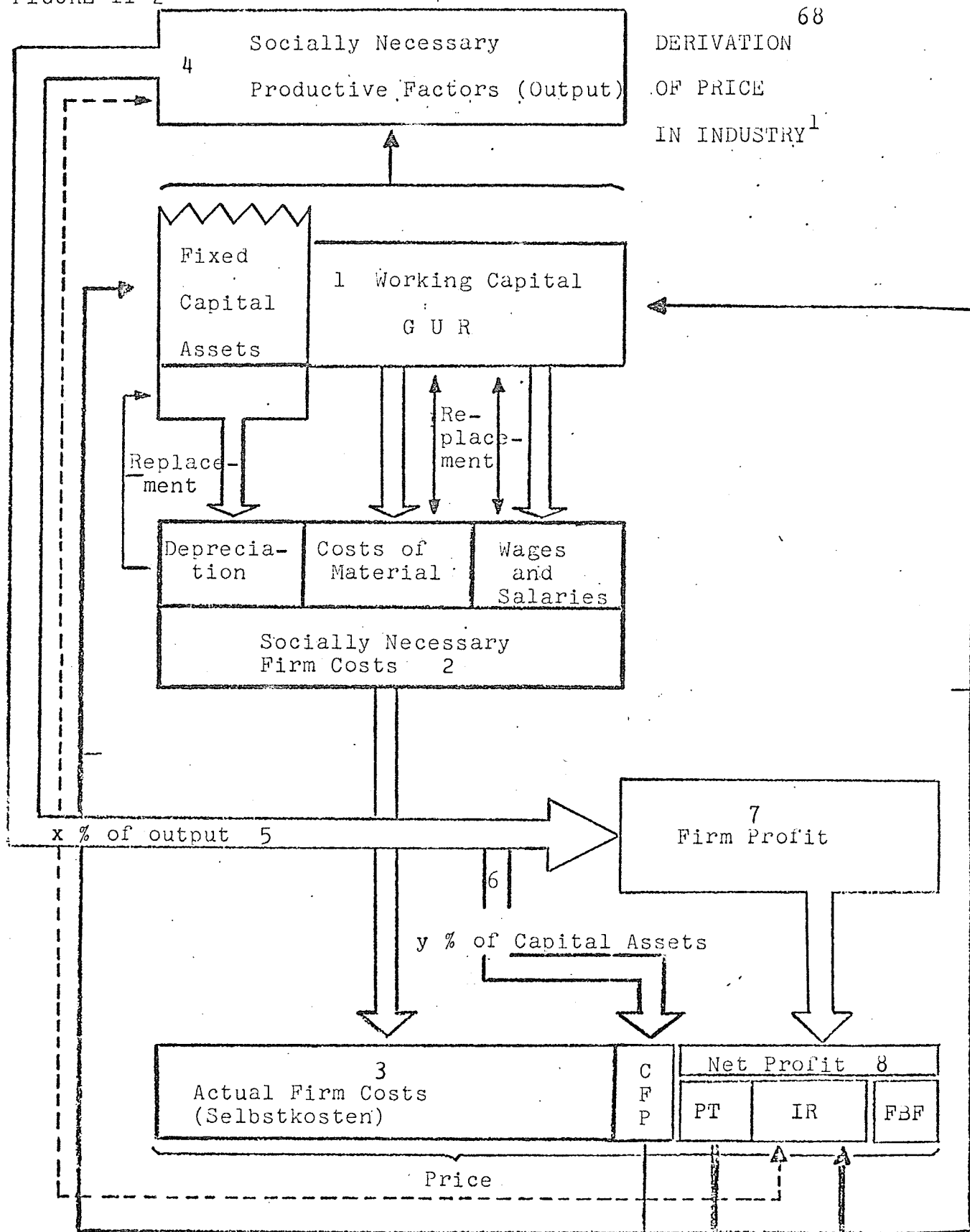
Figure II-2 illustrates what these reforms mean for the typical industrial enterprise.

Given a certain amount of fixed capital, working capital, and labor (1), all of which constitute the socially necessary productive factors, the firm will incur certain socially necessary costs of production (2). These include the cost of the capital assets used up (depreciation), the costs of the working capital used up, and wages and salaries paid to the workers. These costs will be determined by the valuation placed on the capital goods and resources and the wage structure. These costs may not be the same as actual firm costs (3). The latter may include extra expenses incurred in a particular enterprise because of inefficiencies. The price set for the enterprise

¹ A. Belayev, "New Elements in G.D.R. Economic Planning", New Times, Feb. 3, 1965, p. 10.

FIGURE II-2

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1 Adapted from material prepared by the "Karl Marx" Party Training Institute.

G - Goods on hand

U - Unfinished goods

R - Research equipment, etc.

is based on (2).¹ If (3) is greater than (2) the firm will find its net profit is reduced. If it is able to lower (3) below (2) it will increase its net profit.

Depending on actual costs of production then, the firm will realize a profit (5) which is a certain percent of the total output resulting from the productive efforts of the various factors (4).

Actually, the rate of profit will, given the overall fulfillment of the production plan, depend on the price which the authorities permit the firm to charge for its product. In setting the price, therefore, the authorities in effect determine in advance a certain rate of profit for the firm (called x% of output in the diagram - see 5). Before 1969 this price-profit rate was set so as to permit each firm to cover its actual costs, by which was meant largely labor costs and minimal capital replacement costs.

¹ Thus socially necessary costs for firms were calculated before 1967 on the basis of expected costs in the most efficient firms in 1967. Prices allowed on a firm's products were henceforth designed to cover only these "low" costs plus a percent for profit. Cf. Fred Matho, Wie werden Preise gemacht? Dietz, Berlin, 1967, p. 18.

For example,¹ Firm A might have capital assets of 250 Marks (M). Its actual costs might be determined at 100 M. and the firm would be permitted a 10% profit rate, so that the price for its product would be set at 110 M. Another firm B, meanwhile, might have capital assets of only 150 M, but its actual costs would also be calculated as 100 M and its profit rate set at 10%. Therefore the price of its product would also be 110 M. even though it used less capital (and therefore had lower social costs) than firm A.

The problem here was two-fold: capital resources could not possibly be utilized efficiently under this scheme, and the firms with intensive capital production (A in this case) found that they couldn't replenish their capital adequately because they had to draw their investment funds out of the same profit rate accruing to a less capital-intensive firm B. The latter, of course, would be able to finance its capital needs relatively easily out of its profits and perhaps use too much capital as a result.

¹ The example and some of the analysis is taken from Fred Matho, op. cit., p. 37. An excellent survey of the debate surrounding this problem is found in Manfred Melzer, "Preispolitik und Preisbildungsprobleme in der DDR", VHFW, Nr. 3, 1969, pp. 313-353. Socialist economists were reluctant to adopt such a price policy partly because it appeared to grant to capital assets independent productive value, a position repudiated by Marx.

Many economists were aware of this problem and by 1969 it was decided that a price (and with it a profit rate) related to the capital needs of a given firm should be instituted (called the "fondsbezogener Preis"). It is proposed that the profit rate used in establishing price should be a certain percent of the capital assets (or a mixture of capital assets and wage costs), not a percent of actual costs as calculated previously. Thus, if the same rate was established solely in relation to capital assets in our previous example, firm A would add 10% of 250 M to its 100 M. actual costs, and sell its product at a price of 125 M. Firm B would add 10% of 150 M. (capital assets) to its actual costs of 100 M. and sell its product for 115 M. Firm A's profit rate would be higher, enabling it to replenish its investment reserves, and the difference in price would more nearly approximate the difference in cost.

Before any of this profit can be used for the firm itself, it must pay to the state a capital charge (CFP) (6) ranging from 1 - 6% (calculated on the basis of total assets). The remainder can be considered net firm profit (7 & 8). The firm will generally allocate this in the following way: Part of the profit will be paid to the state as a net profit tax (PT); another part (IR) is designated for investment reserves, becoming part of the socially

necessary factors of production, while a third part (FBF) is the Firm Bonus Fund, to be paid to workers as a special bonus at the end of the year. The capital charge and the tax on profit sent to the state (9) will be included in the state budget and may serve partly as investment funds for important industries and products. The firm may supplement its own investment funds (IR) through bank loans, but these are usually very short term and must be paid back, including interest, out of the firm's profit.

These major changes in the East German planning system could be expected to have substantial effects on economic growth and consequently on the structure and regional distribution of industry during the 1960's.¹ The extent and nature of these effects will be examined in chapter six, following a review of planning changes in the foreign trade sector and an investigation of actual structural changes.

1 For an East German account of problems encountered in the new planning system see Manfred Boettcher, "Where Do We Stand With Economic Planning in the New Economic System?", Eastern European Economics, Vol . VI, No. 3, pp. 50-54, and W. Ulbricht, Probleme des Perspektivplanes bis 1970, Dietz, 1966.

OFFICIAL DOCUMENTATION FOR MAJOR REFORMS IN THE NEW
ECONOMIC SYSTEM

1. Basic Guidelines for the New System: GBL II,
Nr. 64, 1963, p. 453. Announced July 11, 1963.
Also note: Protokoll der Verhandlungen des VI.
Parteitages der SED, (Minutes of the VI Party
Congress of the SED) 15-21 January, 1963, Volumes
I - IV. Berlin, 1963 .
2. Decree Concerning Financial Relationships Between
VVBs and VEBs: GBL II, Nr. 84, 1963, p. 651.
Announced September 5, 1963.
3. Order Concerning the Allocation of Profits in the
Firm: GBL II, Nr. 84, 1963, p. 655. Announced
September 11, 1963.
4. Price Reforms:
 - a) The Revaluation of Capital Assets: GBL II,
Nr. 14, 1964, p. 118. Announced January 30, 1964.
 - b) Further Price Changes and their Implementation:
GBL II, Nr. 82, 1966, p. 535. Announced July 7,
1966.

c) Introduction of Capital Fund-Based Prices:

GBL I, Nr. 9, 1968, p. 223. Announced
April 28, 1968.

5. Investment Reforms:

a) General Guidelines for Investment in the New

System: GBL II, Nr. 95, 1964, p. 785.
Announced September 25, 1964.

b) Further Decree Concerning the Enterprise's

Responsibility for Investment: GBL II, Nr. 49,
1966, p. 301

c) The Use of a Capital Charge: GBL II, Nr. 19,

1967, p. 115. Announced February 2, 1967.

d) The Firm's Responsibility for Investment in

1968: GBL II, Nr. 68, 1967, p. 459.
Announced June 15, 1967.

5. Further Organizational and Planning Changes:

a) Creation of Industry Ministries and other Reforms:

GBL I, Nr. 5, 1966, p. 53.

b) Rights and Privileges of the VEB: GBL II,

Nr. 21, 1967, p. 121.

c) Guidelines for Further Planning and Development:

GBL II, Nr. 66, 1968, p. 454.

See also Protokoll der Verhandlungen des VII.

Parteitages der SED (Minutes of the VII Party

Congress of the SED), April 17-22, 1967;

Volumes 1 - IV, Berlin, 1967.

C. SPECIFIC INDUSTRY PLANS: 1959-1968

The period 1959 to 1968 was marked by two plans: The Seven Year Plan, effective from 1959 to 1962, and the Perspective Plan which laid down the major guidelines for the economy from 1963 to 1970 (the so-called "New Economic System").

These plans generally spelled out fairly clear production goals for industry, especially for those sectors considered to be the pacemakers for all industry.¹ The output objectives for these sectors required careful planning of investment and manpower allocation, which, however, was not outlined as precisely as the goals for production. In this section we will summarize the basic production goals and examine more closely the plans developed for labor and investment.

In both plans energy, metallurgy (in its second processing stage), chemicals, general machinery, vehicles, electro-technical and precision tools and optics were considered most crucial for the economy and were assigned specific output targets, especially in 1963. The glass-ceramics subsector was considered important because of

¹ For a more detailed description of such industries see Gerhard Schulz, op. cit. pp. 201-217.

its export potential and its relatively efficient use of capital. Within these subsectors several product groupings, like plastics and synthetic products in chemistry, rolled steel in metallurgy, several types of machinery (for foods and light industry) in the general machinery field were pinpointed at various times for special consideration. In more recent planning these have been given "key" numbers, receiving special attention from the central planning authorities.¹

Table II-3 summarizes some of the specific output targets for sectors and subsectors from 1959 - 1968 and Table II-4 does the same for various product groupings.²

1 For a list of such items for 1968 see Die Wirtschaft, Nr. 51/52, 1967, p. 29, and for 1969-70 R. Pieplow, Volkswirtschaftsplanung, Hochschule fuer Ökonomie, Berlin, 1968, pp. 62-65.

2 Sources: W. Ulbricht, The Age of Socialism Has Begun in Germany, Report at the Sixth Congress of the SED, January 15-21, 1963. Verlag Zeit im Bild, n.d. pp. 23-39 and 50-58. Rudolf Reichenberg, Struktur und Wachstum der Abteilungen I und II im Sozialismus, Dietz, 1968, pp. 59-60 and p. 104. H. Mueller & Karl Reissig, Wirtschaftswunder DDR, pp. 314-315.

TABLE II-3

PLANNED PRODUCTION BY SECTOR AND SUBSECTOR 1959-1968 ¹

Sector or Subsector	Planned Average Annual Percentage Growth 1959-1962 (Approximate)	Planned Average Annual Percentage Growth 1963-1968	Planned Index of Growth 1963 - 1968 (1963 = 100)	Planned Change in share 1963 - 1970
PRIMARY INDUSTRY	10.0	7.7	145	
Energy				
Metallurgy		5.6	131	
Chemicals		9.0	154	13-16%
METAL PROCESSING	10.0	9.4	157	35-42%
General Machinery				
Vehicles				
Electro-Technical		11.5	172	
Precision Tools/ Optics				
LIGHT INDUSTRY	8.5	3.0	116	
Glass-Ceramics		12.5	180	
FOOD-DRINK-TOBACCO	8.5	2.4	112	
ALL INDUSTRY	9.5	7.0	140	66-70% of GSP

¹ Source: See f.n. 2, p. 77.

TABLE II-4
 PLANNED PRODUCTION OF SELECTED GOODS 1962-1968 ¹

Product	Annual Planned Average Percentage Growth 1963-1968. (Approximate)	Planned Index of Growth 1963- 1968 1963 = 100
Plastics	6.3	135
Synthetic Fibres	16.5	215
Rolled Steel	4.7	126
Non-Consumer Electronics	20.0	249
Semi-Conductors	33.0	400
Electricity (kwh)	7.0	140
Meat	2.0	110
Butter	0.9	105
Refrigerators	12.5	180
Washing Machines	2.0	110
Furniture	2.9	115
Automobiles	16.5	215
Machines for Textiles	8.8	152
Printing Machines	6.8	139
Machines for Foods	12.0	176
Machines for Light Industry	7.0	140

¹ Source: See f.n. 2, p. 77.

It is clear from these data that a prime goal of East German planning during the 1960s was to encourage the rapid growth of the Metal Processing sector (especially electro-technicals) and Primary Industry (especially chemicals). Planned growth rates for finished consumer goods, found largely in Light and Food Industry, were considerably lower.¹ It was a specific object of the 1963 plans to increase industry's share of total material production from 66% to 70%, and the Metal Processing share of total industry output from 35% to 42%.

Planned annual rates of growth for the various sectors, subsectors and products, for the period 1963 - 1970 have been used to derive a planned index of growth for the five year period 1963-1968. These planned results can be compared later with actual achievements in this five year period.

Employment and investment policies are formulated by central planners in such a way as to achieve these production goals. While specific employment goals are not available, several policies have been developed to assure

¹ The sharp drop in planned growth for these sectors from 1959 to 1963 is especially notable.

the proper allocation of labor. At least four types of policies are being used:

1. Vocational training and counselling in the public schools is used to encourage students to enter those fields in which expanded production is being planned.
2. At universities and advanced technical schools the student is guided into a specific line of work after his second year. After that point his studies are "Zielgerichtet" (vocation oriented). The student is told specifically about the nature and location of several jobs and must choose from the options given to him. The state planning commission prepares the list of options for the schools, based on 5-year projections of employment needs.
3. Higher salaries and wages, and the promise of larger bonuses, are also used to move people from one industry or location to another and to encourage the most promising young people to take up employment in the pace-making industries.
4. The state planners instruct expanding firms in areas where production cutbacks are planned to

to take on the workers who are put out of work by such cutbacks. Thus, in the Cottbus region, machine and electro-technical firms expanded production and employment to absorb the workers who had become surplus through cutbacks in lignite production.¹ Through such policies, and others, the state consciously allocates labor in such a way as to achieve its output goals.

Investment plans are formulated in similar ways.

Several important steps in investment planning can be noted here:²

1. Each year an analysis is made of the existing capital asset structure.
2. An analysis is made of capital-output ratios in various industry sectors and subsectors (called the Grundfondsintensitaet).

¹ This information is based on a personal interview with Professor Ekkehard Sachse, Director of the Institute for Labor Economics, Hochschule fuer Oekonomie in Berlin-Karlshorst.

² Source: H.J. Hicke, Volkswirtschaftsplanung, Lehrbrief 6, Hochschule fuer Oekonomie, Berlin, 1969, pp. 19-21.

3. The capital-output ratios for each branch are fitted into the output plans for that branch. This results in an estimate of capital assets needed to achieve next year's production goals. Expected replacement of capital is added to the final estimate, and inventory holdings are subtracted.
4. The state planners then balance the "needed investment" with "feasible investment", the latter being based on expected enterprise profits, the provisions of the state budget for capital accumulation, the amount of hard currency available for the importation of investment goods, etc.¹ If a balance cannot be achieved revisions will be necessary, either by lowering the demand side (e.g. forcing firms to lower their capital-output ratio) or by expanding the supply side (decreasing social consumption and increasing the rate of capital accumulation).

¹ In 1968, the state planned to spend 7,431.3 million M. (out of a budget of 58,916.9 million M. or about 13%) for investment, research, and price supports in crucial industrial sectors (computer development, atomic research, new chemical products, etc.). In addition, enterprises were expected to come up with 7,431.3 million M. out of net profits to finance investment, Die Wirtschaft; Nr. 51/52, 1967, p. 31.

5. After a balance is achieved, investment plans for each industry branch are devised. This involves the allocation of direct state investment funds to crucial industries, the allocation of bank loan funds by region and industry sector, and the setting of profit and amortization rates by which firms can create their own funds.

In this complex fashion the state planners finally arrive at investment decisions which will permit the realization of the production goals that have been set.

In the case of both labor and investment planning certain specific goals may be laid down for a given period. Thus, in the case of labor the 1963 plan called for an increase of 65% in labor productivity between 1963 and 1970 (or about 43% between 1963 and 1968). Without such increases the production plans would not be realized.

Investment planning has been shaped by the disproportions caused by the division of Germany after the war, by the emphasis on heavy industry, and by a marked failure to increase capital productivity. Specific goals have been formulated in the light of these problems.

It has been noted by East German planners that in the period 1951-1955 investment of about 32 billion marks

resulted in an increase in national income of about 21 billion marks. In 1956-1960 an investment of almost twice the previous amount, about 63 billion marks, increased national income by the same amount as before, viz, 21 billion marks. In the period 1961-1964, 66 billion marks investment resulted in an increase of national income of only 10.7 billion marks. This drastic fall in investment productivity has greatly affected investment plans during the 1960s.¹

Decisions have been made to increase investment more rapidly in metal processing and in light industry where there seems to be greater capital productivity. This was to be accompanied by corresponding decreases in certain sectors of primary industry where capital was being used inefficiently. However, no specific "capital growth" goals were established and it will be interesting to see whether the decline in capital productivity was arrested or reversed through these measures.

The basic investment goal of the New Economic System was to increase investment by 7.5% each year from 1963 to

¹ W. Ulbricht, Probleme des Perspektivplanes bis 1970, Report at the 11th Congress of the Central Committee of the SED, December 15-18, 1965, (Dietz - 1966), pp. 17-58.

1970, which would have resulted in an increase of about 44% in investment for all industry between 1963 and 1968.¹

¹ Gunther Kohlmey, a leading East German economist, interpreted the 1963 plans to mean that "increased output is to depend more upon the improvements of technical-economic coefficients than upon increased investments", G. Kohlmey, "Economic Growth and Foreign Trade", The American Review of Soviet and Eastern European Foreign Trade, Vol. II, No. 3, May-June, 1966, p. 15.

CHAPTER III

FOREIGN TRADE AND REGIONAL PLANNING

The previous chapter dealt with the history and objectives of the East German planning system. We have seen that the main concern of East German planners has been to create a strong national economy with an efficient, well-structured industrial base.

However, while their overriding concern has been a national one, East German planners have also been responsible for the development of their country's foreign trade and for the establishment of various types of international ties. Therefore to understand the planning system one must enlarge its scope to include the whole sphere of international economic activity.

At the same time national economic planning has had important intra-national or regional implications. Therefore we will examine, in addition to the foreign trade sector, the extent to which regional problems within East Germany have been tackled by the economic planners.

A. THE DEVELOPMENT OF FOREIGN TRADE AND INTERNATIONAL COOPERATION

Before the war the area of East Germany was an important exporter of textiles, light machinery and precision goods, chemicals, published material, manufactured consumer goods and such agricultural commodities as wheat and sugar products. Its imports consisted primarily of industrial raw materials. The largest part of its trade was domestic trade, i.e. with the rest of Germany.

In the period since the war intra-German trade, as will be seen in chapter V, has been replaced very largely by intrabloc trade, particularly with the U.S.S.R. Trade with the "other" Germany is now only about 10% of its pre-war magnitude.¹

During this period East Germany has continued to export and import many of the prewar commodities, but it has intensified trade in some of these and added others. It has become a major exporter of lignite, mining machinery, precision machinery, industrial chemicals and potassium products, office equipment, electronic equipment, railway rolling stock, and printing machinery. In addition it exports certain types of heavy machinery, and specialized products such as furniture and wire and cable. It imports

¹ Stephen M. Hirst and Leon Lewis, Basic Data on the Economy of the Soviet Zone of Germany, U.S. Department of Commerce, February, 1967, pp. 16-19.

largely such raw materials as sulphur ore, iron ore, bauxite, hard coal, crude oil, cotton, paper pulp, and foodstuffs.

Trade has been growing rapidly, at an annual rate of about 7% since 1960.¹ It is also highly organized, being run by a state monopoly, as is characteristic of foreign trade operations in most socialist countries. Annual trade plans are drawn up by the Ministry of Foreign Trade and Intra-German Trade in cooperation with the State Planning Commission and the various Industrial Ministries. To some extent, as will be noted shortly, the Associations of State Enterprises (VVBs), and in some cases individual enterprises, have also been drawn into the planning process.

Up to recent times the basic purpose of trade was to obtain for East German consumers, including industry, those products whose quantity and/or quality fell short of East German needs. This as we have seen included a wide range of raw materials for industry as well as foodstuffs and technically advanced products from both east and west. Since East German planners were subject to very poor credit arrangements with their trading partners, both in the socialist bloc and in western Europe, and since

1 Ibid.

their currency is inconvertible, the export trade has been conceived of largely in barter terms. This has led one of the leading East German economists to observe:

"Export was essentially a means of equalizing the balance, an offset factor in the balance of payments or of trade. Of course, we did engage in production especially for export, but its principal function was not to raise national productivity and to make use of the law of comparative advantage by exploiting far-reaching international specialization of the processing industries, but, rather to a large degree, to pay for imports. Thus, quantities exported were more important than the profitability of export."¹

This meant that East German planners were primarily concerned with the planning of imports, and one of their main problems was to balance such import demands with the amount of foreign exchange made available by exports. When this had been determined the Ministry of Foreign Trade together with the State Planning Commission would allot to each Ministry for Industry and to the other planning ministries a share of the total.

Until very recently almost all actual trading was then conducted by 29 trading organizations which operated under the leadership of the Ministry of Foreign Trade. There was

¹ Gunther Kohlmey, "Economic Growth and Foreign Trade", The American Review of Soviet and Eastern European Foreign Trade, May - June, 1966, Vol. II, No. 3, p. 12.

often little direct connection between these organizations and the VVBs or state enterprises which actually produced the export goods or used the imports. These trading organizations are still largely responsible for the trading that takes place. Each organization is in charge of certain designated commodities or services and is headed by a General Director who is fully empowered to sign trade contracts. In addition there is a Chamber of Commerce in Berlin which helps to set up trade relations with new trading partners and generally acts as a public relations agent for the state.

Since the inception of the New Economic System in 1963 attempts have been made to relate the foreign trade sector much more directly to the enterprises which are most heavily engaged in it. Definite instructions were given to the Ministry of Foreign Trade in 1963 to draw the VVBs directly into the planning and conduct of foreign trade, but several years later very little had seemingly been done about it.¹ Only a few special enterprises, such as

¹ Compare the guidelines set down in the 1963 plans. (GBL, Part II, Nr. 64, 1963, pp. 477 and 492-493) with almost identical instructions in the 1969-70 plans (GBL, Part II, Nr. 66, 1968, pp. 446-448). See W. Ulbricht's criticism of the slow pace of reforms in Probleme des Perspektivplanes bis 1970, pp. 59-64. F. Pryor observes, however, that in East Germany "a considerable number" of production enterprises "have been given permission to deal directly with foreign export-import firms." "The Organization of Trade in the European Communist Nations" - in Philip E. Uren (ed.), East-West Trade, p. 48.

Meissen china, and Carl Zeiss, optics, were authorized to manage their own exports. The planners are attempting in the period 1968 - 1970 to relate more VVBs and certain large enterprises to the planning and conduct of foreign trade operations, along the lines indicated in Figure II-1.

In the past decade the East German attitude to foreign trade has undergone significant change.¹ In general, the importance of trade, not just as a stop-gap measure to fill momentary needs but as a method of making the national economy more efficient through international specialization, has been recognized and stressed. As the East German leader Walter Ulbricht said in 1967,

"We can no longer talk about imports and exports as necessary evils. Such a way of thinking prevents us from realizing the great potential and opportunities which are found precisely in the foreign trade sector."²

One might expect to find, therefore, a noticeable increase in trade in the past few years as compared to earlier periods.

¹ For a discussion of socialist trade theory in general see A.A. Brown and E. Neuberger, (eds.) International Trade and Central Planning, U. of California, Press 1968, and I. Vajda, The Role of Foreign Trade in a Socialist Economy, Corvina Press, Hungary, 1965.

² Quoted in R. Reichenberg, Struktur und Wachstum Der Abteilungen I und II im Sozialismus, p. 77.

Further, a conscious effort has been made to change the commodity composition of trade in keeping with the new and broader objectives. Import needs are no longer defined simply in terms of temporary gaps or emergencies but in terms of their long-run contribution to national economic growth. This has led to a deliberate effort to increase the importation of modern machines and equipment and to take advantage of advances in foreign technology through licencing agreements. This has been supported with the explanation, "We are importing a piece of technical revolution."¹ The extent to which this has actually occurred in recent years will be examined in later chapters.²

Attempts have also been made in the past few years to develop a more rational pricing system for foreign trade, similar to, and partly based on, the price reforms in the domestic market. Up till now there has been no direct connection between prices paid to East German enterprises for export articles produced by them and the price actually

¹ W. Ulbricht, Probleme des Perspektivplanes bis 1970, p. 60.

² Recently the West German Economics Minister Karl Schiller announced a trade agreement between the two Germanies which would increase annual trade in machinery, electrical equipment and vehicles by 150% between 1968 and 1975. The American Review of East-West Trade, December, 1968, p. 7.

received in the final export sale by the trading organization. Nor was there such a connection between actual costs of imports (as experienced by the trading organization in its dealings with foreign sellers) and the costs charged to the home enterprise which used the import. This created numerous irrational possibilities.¹ Attempts are being made to base foreign trade prices on actual production costs, to do away with trade subsidies and make individual home enterprises bear the full brunt (or reap the full benefits) of discrepancies between home costs and foreign prices.² The value of foreign trade has been given since 1963 in Valuta Marks, or the value in marks at which the good is actually bought or sold, not the value accruing to the individual productive enterprise. The aim is to reduce or eliminate the difference between these two values.

1 Thus, Frederic Pryor shows how an East German trading organization might end up with an apparent profit by exporting a good whose real domestic production costs were 400 M. in exchange for the importation of a good whose real domestic production costs were only 200 M. (The Communist Foreign Trade System, p. 101).

2 For a good discussion of pricing problems and recent attempts at change see H. Koehler, Economic Integration in the Soviet Bloc, pp. 182-191, and K. Pritzel, Die Wirtschaftsintegration Mitteldeutschlands, pp. 206-208. Special problems connected with intra-German trade are discussed in K. Holbik and H. Myers, Postwar Trade in Divided Germany, 1964, pp. 41-54.

The Development of International Cooperation and Planning
Through COMECON.

What has been said up to this point concerns the general development of foreign trade in East Germany since the war, including its organization and commodity composition. During this period of internal reorganization the foreign trade sector of East Germany has also undergone significant external reorganization. Since the mid-fifties East Germany has reoriented its foreign trade in a fundamental way through participation in the Council for Mutual Economic Assistance, or COMECON.¹ As a United Nations Report observes,

"Whereas foreign trade acted in the preceding phases as a link between the production of individual countries, it now becomes a function of their co-ordinated production."²

In other words, an attempt has been made, through a formal, socialist international organization, to plan the production of its members in such a way as to optimize total output for the entire region covered by the organization. Trade

¹ It is called the Rat fuer Gegenseitige Wirtschaftshilfe in German, or RGW.

² Economic Integration and Industrial Specialization Among the Member Countries of the Council for Mutual Economic Assistance, New York, 1966, p. 4. Referred to from this point on as U.N. Report. The quoted remark applies to all members of COMECON.

between these partners is to become a function of the production specialization which such maximization of output implies.

COMECON has not yet developed to the point where it is accomplishing this but it has already had an important bearing on East German planning and this importance will likely increase in the future.

COMECON was organized in Moscow in January 1949 to encourage economic cooperation between its six founding members, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and the U.S.S.R. Albania and East Germany became members in 1950 and Mongolia in 1962. Albania has ceased participation in the Council's work, while Yugoslavia has been associated with it in a loose way since 1965. North Korea, North Vietnam, Cuba, and the People's Republic of China have observer status but the latter has not participated in the work of COMECON in recent years.

Before 1956 the activities of COMECON were largely confined to the promotion of mutual trade, particularly in the form of long-term trade agreements which were concluded bilaterally. Thus it influenced the international division of labor only indirectly through its promotion of trade. In addition, scientific and technological

cooperation was encouraged through the granting of licences and exchanges of technical plans. While these exchanges may have resulted in substantial savings, especially for the less industrialized countries who were building up their industry, they may also have contributed to the establishment of identical industries in several countries, resulting in uneconomical duplication.¹

At the seventh meeting of the Council in 1956 an attempt was made to approach economic cooperation in a new way. Instead of influencing the international division of labor indirectly through the promotion of trade, a far-reaching decision was made to establish commissions which would shape production plans within member countries in a direct way.²

These commissions were to consist of permanent delegations from member countries, led by the minister of each industry branch and staffed with highly qualified experts. In addition to research the commissions were

1 U.N. Report, p. 8.

2 H. Koehler, Op. cit. p. 89 notes that the Sixth Plenum in December, 1955, had already planned a multilateral coordination of production for 1956-60 for such items as automobiles, trucks, tractors, railroad cars, combines, and other agricultural machinery. These plans laid the basis for the organizational changes of 1956.

to engage in the coordination of investment, output, and trade plans of the economic branch under their jurisdiction. The commissions thus were organized around economic branches and their location was determined to some extent by the importance of that branch in a particular country. The commissions created in 1956, with their locations, were as follows:¹

1. Agriculture (Sofia)
2. Chemicals (Berlin)
3. Coal (Warsaw)
4. Electricity (Moscow)
5. Ferrous Metals (Moscow)
6. Foreign Trade (Moscow)
7. Machine Building (Prague)
8. Non Ferrous Metals (Budapest)
9. Oil and Gas (Bucharest)

Since 1956 further commissions have been established for Construction (Berlin), Special Economic Problems (Moscow), Transportation (Warsaw), Food (Sofia), Light Industry (Prague), Atomic Energy (Moscow), Coordination of Scientific

¹ H. Koehler, op. cit., pp. 83-84. It was felt that the commissions would be operating effectively by 1958, so that the impact of Comecon's "second stage" can best be measured from that date (Ibid, p. 100).

and Technical Research (Moscow), Standardization (Berlin), Statistics (Moscow), Foreign Exchange and Finance (Moscow), Geology (Ulan Bator), Radio-technical and Electronics Industry (Budapest).

The development of these commissions indicates the broad scope envisaged for COMECON after 1956. Two types of international specialization were considered by COMECON planners.¹ The first was called interproduct specialization and called for the allocation of the production of a particular commodity to one or several countries. For example, primary industries were to be developed in accordance with natural endowments of resources. This meant that hard coal and zinc mining might be concentrated in Poland, potash and lignite mining in East Germany, non-ferrous metals in Bulgaria, oil in Romania, and oil, electricity and ferrous metals in the U.S.S.R. The location of the commissions reflects this goal.

The other form of cooperation was known as intra-product specialization. It assigned production according to certain specifications, such as size or model. For example,

¹ This distinction is made by Stanley Zemelka, "The Problem of Specialization in Comecon", East Europe, Vol. 18, No. 5, May 1969, pp. 9-14.

the production of large-scale rolling mills was to be carried out in Czechoslovakia and the Soviet Union, while small-scale mills would be built in East Germany and Poland.

We will note below some of the specific plans, either of an inter-product or intra-product nature, that have been developed for East Germany since 1956, with their possible impact on East German production. It should be noted, however, that considerable controversy has surrounded the development of these two forms of specialization. The first, inter-product specialization, has been resisted especially by countries like Romania since it seemed to imply that it was to remain primarily a raw material producer supporting the manufacturing industry of the other members. This path was officially rejected by COMECON in 1964 and an attempt has been made to achieve the benefits of international specialization while at the same time permitting individual countries to build up a strong industrial base.¹

Since 1956 the various industrial commissions in COMECON have come up with a number of far-reaching plans to allocate production among the member countries. Some of

¹ Ibid., p. 10. Priority has in fact been given to the "proportional development" of each country with the recognition that this would probably slow down the growth of specialization. See also Michael Kaser, Comecon, 1967, pp. 209-214 for the sharp debate that ensued around this issue.

these plans have applied specifically to East Germany. Below are listed some of the COMECON decisions which were intended to stimulate the production of certain sectors, subsectors and selected products in East German industry.¹ The effectiveness of these intentions will be evaluated in a later chapter.

PRIMARY INDUSTRY

- a) Mining: the production of potassium salts, uranium ore, and lignite has been encouraged.
- b) Metallurgy: the second processing stage has been encouraged, including such products as sheet metal, die mill products, special steels, semi-conductors, zinc, nickel and magnesium products.
- c) Chemicals: highly processed, based originally on lignite and more recently on oil. Includes especially plastics, synthetic fibres, synthetic rubber, artificial fertilizers, pharmaceutical products, soaps and dyes, photo-chemicals.

¹ Source: H. Koehler, op. cit., pp. 130-133.

METAL PROCESSING INDUSTRY

- a) Heavy Machinery: Highly mechanized automatic precision machine tools, equipment for lignite mining, sugar factories, light rolling mills.
- b) General Machinery: Machines and equipment for textiles, meat industry, printing and paper industry, chemical industry, and other light machinery. Small wheeled tractors and caterpillar tractors.
- c) Vehicles: Diesel and electro locomotives, automobiles, light and medium trucks.
- d) Shipbuilding: medium sized ocean freighters and passenger liners, fishing boats
(after 1962 decreased emphasis on Rostock shipbuilding in favor of Gdansk).
- e) Electro-technical: electronics for serving mechanization and automation, refrigerators, etc.
- f) Precision Tools/Optics: East Germany to be the main COMECON producer (e.g. calculating machines, electric typewriters, cameras, etc.)

In addition to the multilateral COMECON decisions which led to the product emphasis above, East German trade and industry has been heavily influenced by bilateral decisions, especially with the U.S.S.R. Since about 1960 East Germany has occupied the leading place in Soviet foreign trade.¹ The composition of this trade has been very important. In 1962 fuel and oil accounted for about 17% of Soviet exports.² At the same time about 75% of total imports were finished goods and about half of these consisted of machines and equipment. This was reflected in East German-Soviet trade. East Germany has relied heavily on the importation of raw materials, especially oil and iron ore and has exported machinery and metal goods to the U.S.S.R.

This trade has been based on a series of long-term trade agreements with the U.S.S.R. A major agreement of this kind was concluded on November 21, 1959 and was intended to cover the period 1960-1965.³ It called for East Germany

1 I. Duimulen, "The Soviet Union in the System of International Economic Relations", The American Review of Soviet and Eastern European Foreign Trade, Vol. I, No. 1, 1965, p. 41.

2 D. Fokin, "Soviet Foreign Trade in 1963", Ibid, Vol. 1, No. 3, p. 42.

3 Neues Deutschland, November 22, 1959. Quoted in K. Pritzel, Die wirtschaftliche Integration der Sowjetischen Besatzungszone Deutschlands in den Ostblock, 1966, p. 241.

to import hard coal, iron ore, rolled steel and pipes, oil, raw wool, and timber, in addition to 34,000 small trucks. East Germany was to export to the U.S.S.R. machine products, refrigerated train cars and trucks, automobiles, ocean freighters, passenger ships, and fishing vessels, cement factories, machines for the Foods industry, Chemical industry, and for Light industry, in addition to numerous special steel products. This agreement was supplemented by further negotiations in May, 1961, which called for the exportation of diesel motors, diesel vehicles, train cars, agricultural machinery and equipment for communications.

Further trade in these types of products, for the period 1966-1970, was established through the Friendship Agreement of June 1964, which resulted in long-term trading arrangements in December, 1965.¹ One would expect that these agreements would have had a considerable impact on East German production.

We can assume then that both multilateral COMECON agreements and bilateral agreements have influenced industrial planning in East Germany very directly in the past decade. The actual impact of such agreements, along

¹ Ibid, p. 242.

with the impact of domestic planning, will be examined in the following chapters.

B. REGIONAL PLANNING

We have seen that international economic planning in COMECON was frustrated to some extent by two seemingly conflicting goals. The first goal might be called the "proportional" development of the socialist community, a Marxist idea which has come to mean that each region within the socialist community be permitted to reach the industrial and economic level of the other communities. Another term for this is simply autarchy or nationalism. A second goal has been the most efficient development of the entire community through a high degree of international specialization. This goal has apparently been frustrated by the strong efforts made by the less developed regions in the socialist community to achieve the first goal. It might be best for the socialist world as a whole to develop Romania as a supplier of raw materials, but Romania was not willing to accept such a position. The goal of "proportionality" was therefore given the highest priority after 1964.

Similar problems have come up in regional planning

within East Germany. Here too socialist aims seem to move in two often conflicting directions.

A Czech economist has argued that a highly centralized socialist planning system will generally be biased against regional planning. By nature, he maintains, the goals of central planners will be national ones: the most efficient growth of the national economy. Also, by nature their concerns will be short-run while regional problems demand a long-run perspective.¹

On the other hand, several Soviet and East German scholars have maintained that a socialist system is most able, and most likely, to ensure the equal development of all regions within its boundaries. In one of the earliest works on the subject W.F. Wassjutin set forth the following socialist principles for regional planning:

1. The planned distribution by the state of production throughout the whole country. Each district should develop industry on the highest technical level.
2. The removal of important economic and cultural differences between districts because of past

¹ A. Lantay, "Regionale Aspekte der Planung" in K. Wessely, Probleme Zentraler Wirtschaftsplanung, Munich, 1967, pp. 159-160.

developments.

3. The rational planning and specialization of labor in each district.¹

Wassjutin argued that a socialist state like the Soviet Union could best fulfill these principles. This position has been taken by several East German scholars as well. In a study of the district of Frankfurt (Oder), Gerhard Mohs drew attention to the way in which state planning had stimulated industry in that district - a district which had been relatively undeveloped before the war.² He acknowledged that in the D.D.R. as a whole many districts still lagged considerably behind others in economic development, and planning in the early postwar stages had neglected this problem. However, he pointed to several achievements in this regard in the 1950's and expressed optimism about the future direction of central planning. At the same time he warned that unless planners actively pursued regional goals the old disproportions would remain and might, in fact, be intensified. Still,

¹ W.F. Wassjutin, The Basis of the Distribution of Production in Socialism and the Responsibilities of Economic Geography (Russian) 1955. Cited in G. Mohs, Die Industrie im Bezirk Frankfurt (Oder), Berlin, 1962, p. 46.

² Mohs, op. cit., pp. 45-48. See also I.G. Feigin, Die Standortverteilung der Produktion im Kapitalismus und im Sozialismus, Berlin, 1956.

he remained convinced that the system of districts created in the D.D.R. in 1952 had created a basis for effective regional planning so that within a short time most regional disparities would be overcome.

In a similar study G. Schmidt-Renner¹ noted several problems faced by regional planners in East Germany. First of all, it was obvious that different industrial sectors had very different rates of growth and it would seem that those districts which happened to dominate the fastest growing sectors would inevitably, unless concrete plans were made to change it, grow more quickly than other regions. He noted further that socialist economies should take advantage of the benefits of large scale production, but the "concentration tendencies" of such production might create disparities among different regions. It was clear that this had already happened in the prewar period, since the area south of Berlin was heavily industrialized, and contained almost all the large industrial firms of East Germany, while the northern areas were very largely agricultural.

¹ G. Schmidt-Renner (ed), Wirtschaftsterritorium, Deutsche Demokratische Republik, Berlin, 1962, especially pp. 65-70.

Despite these problems Schmidt-Renner expressed confidence in the ability of the socialist planning system to overcome the disparities. Even the concentration of industry could be planned in such a way as to give each region an equal share of production. He noted that much had already been done in this direction. Thus, state planners had seen to it that new industry was developed in Frankfurt, with the opening of the oil refinery in Schwedt, a new paper mill had been opened in Schwedt and a new instrument factory in Eisenhuettenstadt in Frankfurt. Plans were also being made for new industry in such northern agricultural districts as Schwerin, Neu Brandenburg, and Rostock.

However, other sources indicate that specific "regional" planning may not have been responsible for such developments. Thus, the development of industry in Eisenhuettenstadt was due in large measure to its proximity to the Polish coal fields and to Soviet ore bodies. The nearness to the Polish border also dictated the building of the oil refinery at Schwedt, which connected up with the Soviet "friendship" oil line through Poland.¹ It is also not clear whether the industry planned for the northern regions was ever developed on a large scale.

¹ See A Zauberman, Industrial Progress, p. 189.

It is known that rapid development planned for the Rostock harbor was restricted in scope because of COMECON agreements giving priority to a Polish Port.¹ It is also known that the planning of very large chemical exports to the U.S.S.R. necessitated a heavy concentration of investment in such older districts as Leipzig, Magdeburg, and Erfurt.²

The absence of any specific regional planning in the guidelines laid down for the New Economic System, or in any of the major speeches by government leaders which the writer has read over the past few years, also leads one to think that little attention has been given to regional development as such. It is true that regional planning boards have become very important in the national planning system of East Germany, but it is also clear that their main purpose is to coordinate and carry out national plans, not to overcome possible regional disparities.³

The real emphasis of "territorial" planning as it has

1 H. Koehler, op. cit., p. 105. Priority was given to the Polish port of Szczecin after specific objections from the Poles to a planned parallel development of Rostock.

2 K. Pritzl, Die Wirtschaftsintegration Mitteldeutschlands, p. 201.

3 See GBL II, Nr. 64, July 18, 1963, pp. 462-463 (for an English translation see Eastern European Economics, Vol. III, No. 3, 1965, pp. 11-12.

come to be known in East Germany is shown in a recent special section of the important economic weekly, Die Wirtschaft.¹ This issue contains several articles on territorial planning, and the emphasis in all of them is on the more efficient development of the national economy, especially the growth of national income. Thus an article by H. Luedemann describes the extensive research that has been done on territorial reserves in East Germany, and his main concern is to show how central planning can utilize such territorial resources more efficiently. In another article G. Bachmann and H. Sitkiewicz note that about 50% of the industrial potential of the D.D.R. is found on 15% of its territory, and this same territory contains more than half of all the large firms (more than 1,000 employees) in the country. This information is used to support a plea for greater concentration of efforts in these areas, not a dispersal of them or a more equitable distribution.

In an article on "District Infrastructures", Gisela Lindeman follows a similar kind of reasoning, although she also notes some other alternatives. She notes first

1 Die Wirtschaft, Nr. 19, May 8, 1969.

of all that if the average value of the infrastructure (including transportation facilities, highways and rails, etc.) for all districts in the D.D.R. = 100 then the value for some selected districts would be as follows:

Neu Brandenburg	=	36
Schwerin	=	44
Potsdam	=	67
Dresden	=	189
Leipzig	=	219
Karl Marx Stadt	=	223. ¹

The first three districts are among those generally considered most backward, and least industrialized, while the last three are among the most industrialized regions in East Germany. It is clear from this that the state has not been building up, in the first three districts, the basic prerequisites for industry to nearly the same extent that this has been done for the already industrialized regions.

However, the author goes on to point out that funds have been poured into the infrastructure of the last three districts because they can use such a structure most

1 Ibid, pp. 8 and 9.

efficiently. Thus, if one measures the contribution of the infrastructure to national income, and places the average value of all districts at 100, then the value of the selected districts is as follows:

Potsdam	=	75
Neu Brandenburg	=	78
Schwerin	=	81
Leipzig	=	96
Dresden	=	105
Karl Marx Stadt	=	116

This leads the author to the conclusion that the concentration of such infrastructures in heavily industrialized areas may be the best policy for the state planners to follow. She suggests at the same time, however, that similar efficiencies might be realized in the long run if population centres were to be developed in the northern regions. She notes in conclusion that too little attention has been given to such long-range planning in the past and that the perspective plans now being drawn up for the 1970s should deal with such problems.

It appears from this that regional problems have not been neglected altogether in East Germany planning, especially not by economic scholars. At the same time there is little evidence to suggest that any serious

attention is being given to the elimination or reduction of regional disparities. Efforts that have been interpreted as such can also be interpreted in the light of international planning or of geographic factors. The primary emphasis seems to be on the most efficient development of the national economy, not on the proportional development of that economy. To what extent this assumption is accurate will be tested in a later chapter after more attention has been given to actual economic development in the various districts of East Germany.

CHAPTER IV

AN EMPIRICAL ANALYSIS OF STRUCTURAL CHANGES IN EAST GERMAN INDUSTRY, 1959 - 1968

A. The Growth of Employment, Investment, and Production by Economic Sector.

This chapter builds on the preceding analysis by examining the actual growth of such economic factors as employment, investment, industrial production, and foreign trade. Structural changes are observed, both in terms of the changing relative importance of different industrial sectors and in terms of geographic regions. At first no reference will be made to the stated goals of economic planners discussed in the previous chapter. The observation of changes precedes the analysis of possible correspondence between such changes and economic planning.

Several assumptions underlie the analysis of this section. One is that economic planners consciously choose annual production goals for the various sectors of the economy and for the major sectors and subsectors of industry. Secondly it is assumed that planners attempt to allocate the factors of production, labor and capital, in such a way as to realize the production goals that have been set. There should therefore

be a fairly clear correlation in the long run between increases or decreases in labor and capital within a given economic sector and increases and decreases in the output of that sector. This is not to rule out sporadic, heavy infusions of productive factors which in the short run may not be reflected in corresponding increases in production.

Since employment figures are not subject to the vagaries of price, and since they are available for branches as well as sectors and subsectors of industry, they are especially useful as a guide to the intention of East German economic planners.

However, for several reasons the actual allocation of labor and capital may not reflect the basic intention of economic planners with regard to the growth of any particular economic sector. As was noted in the previous chapter, planning goals undergo considerable adjustment in negotiations between planners and industrial leaders. It is not too speculative to suggest that the persuasiveness and relative power of the participants will help to determine the final goals that are chosen. Once decisions are made it is not always easy to carry them out. We have seen, for example, that the reallocation of labor in the Cottbus district, resulting from the cutting back of lignite coal

production, was carried out fairly smoothly, but not without problems.

Another problem, to be examined extensively here, is that of differences in the productivity of labor and capital. A particular sector in industry may receive a relatively large infusion of new investment in a given period, not because it is considered more important than another sector (in the sense that production here is to be encouraged more than elsewhere) but because its capital productivity is demonstrably lower. It is difficult, however, to arrive at a meaningful estimate of what the capital-output or labor-output ratio ought to be in any particular sector. Some sectors of industry will always be characterized by higher ratios than others. Furthermore, as noted before, sharp infusions of factors of production may lead initially to very high ratios, the ratio gradually declining as the plant, equipment, or labor is used and production increases. This latter problem may be overcome at least partially by comparing changes in productivity over several years, as is done in this chapter.

But this does not solve the problem of determining to what extent factor allocations were affected by differences in productivity. One might try to measure how different the allocations would have been, from those actually carried out,

if productivity (or the factor-output ratio) in each sector had been the same. This would involve categorizing those sectors with a high factor-output ratio as "low productivity" sectors, and those with a low ratio as "high productivity" sectors. One might then measure the change in allocation of factors which would result if the factor-output ratio in the former sectors was lowered through productivity increases to the average ratio, and the ratio in the latter sectors was increased to the average. This is a very radical assumption, however, ignoring the basic need of some sectors of industry for more capital and/or labor per unit of output than others. Ignoring this leads to the misleading assumption that those sectors with high factor-output ratios are further removed from their most efficient level of production than the sectors with a low ratio. Just the opposite might in fact be the case.

The writer has therefore adopted another method of measuring productivity differences and their effect on the allocation of resources. Several writers have referred to the problem of distinguishing between allocations of productive factors on the basis of existing productivity

and on the basis of hoped-for changes in productivity.¹ However, the writer is not aware of any previous attempt to measure the possible difference and to assess its consequences. An attempt is made in the following analysis to measure productivity increases in the different economic and industrial sectors, regardless of the basic factor-output ratio of the individual sectors. Whether a sector is judged low or high in productivity does not depend upon its initial productivity ratio but upon its rate of increase or decrease in productivity. Those with lower-than average increases are judged to be "low productivity" sectors and those with above average increases "high productivity" sectors.

The purpose is to determine how labor and capital would have been allocated among the sectors if planners could have counted on an average increase in factor productivity in all sectors, instead of being faced by widely disparate rates of increase.²

1 Cf. Heinz Koehler, Economic Integration in the Soviet Bloc, with an East German Case Study, p. 205, and Deutsches Institut fuer Wirtschaftsforschung, "Die Brutto-Anlageinvestitionen der mitteldeutschen Industrie 1955 bis 1966", Wochenbericht, Nr. 23, June 9, 1967.

2 Planners counted on an average growth of labor productivity for all Sectors of about 40-45% between 1963 and 1968 (see p. 343). The attainment of production goals has been frustrated by the failure to reach this level. In addition, the relative allocation of factors of production between different sectors (and consequently also the attainment of relative production goals) has been affected significantly by the fact that the rates of productivity growth in some sectors deviated considerably from the average. The following analysis attempts to measure the significance of these deviations for the structural development of East German industry.

First, actual increases in investment, employment and production have been calculated and graphed on the basis of actual increases in productivity. Then "corrected" indexes of investment and employment have been calculated, based on the assumptions that production goals remained the same but productivity increases were "average" (instead of below or above average) for each sector. The calculations were made as follows:

1. The average productivity of labor and capital (Marks Net or Gross Product per Employed Person or per 1000 Marks Capital Assets)¹ was derived for each economic and industrial sector.
(Tables IV-18, IV-24, IV-31, IV-37.)
2. An index of growth in labor and capital productivity was derived for each economic and industrial sector, based on the annual change in average productivity. (See Tables IV-19, IV-25, IV-32, IV-38.)
e.g. Average Labor Productivity in period

$$(t) = \frac{\text{Value of Output (t)}}{\text{No. of employees (t)}} = \frac{Y(t)}{L(t)}$$

The growth of labor productivity (gL) can be

¹ The valuation of capital assets is, of course, a very difficult undertaking. Values given in the S.J.D.D.R. are based on the price revisions of 1963. Depreciation figures are generally based on actual capital replaced, though the procedure is not clear. Because details are lacking the data has been taken at face value for the present analysis.

expressed in annual percentage

$$\frac{\frac{Y(t) - Y(t-1)}{L(t)} - \frac{Y(t-1) - Y(t-2)}{L(t-1)}}{\frac{Y(t-1) - Y(t-2)}{L(t-1)}}, \text{ or it can be}$$

converted into an index series based on year 1 = 1960.

$$\text{where GL} = 100 \times \frac{\left[\frac{Y(t)}{L(t)} \right]}{\left[\frac{Y(1)}{L(1)} \right]} = 100 \frac{[Y(t) \times L(1)]}{[L(t) \times Y(1)]} \cdot 1$$

Changes in productivity have been expressed through an index series in the following analysis, so that annual changes are always related to the average growth of the base year.

3. The Marks Net or Gross Product per factor per sector were recalculated on the assumption that each sector had an average growth in factor productivity (i.e. each sector's growth in factor productivity equalled the rate of growth for all sectors combined.)

For example, it was assumed that the 12,962 marks per employed person attributed to industry in 1960 (Table IV-19) increased by the average rate for all sectors, or by 8.8% by

¹ gL or gK express growth in productivity in percentage terms, and GL or GK express growth as an index number.

1963, instead of by the observed increase of 15.9% (Table IV-19). If the industrial sector had in fact experienced this lower, average rate of increase in labor productivity, planners would have been forced to allocate considerably more labor to industry than actually proved necessary, in order to attain the observed level of production. This "corrected" or potential increase in the allocation of labor to industry is recorded in the new employment index, Table IV-17. This indicates, for example, that employment in industry would have increased by 5.4% between 1960 and 1963 (instead of dropping by 1.1% as shown in Table IV-16) if production goals had remained the same and industry had experienced only an average increase in labor productivity. On the other hand, sectors with a lower than average increase in labor productivity, like agriculture, would have had less labor allocated to them if they had been able to increase their productivity to the average level.

The same procedure was used to calculate actual and

"corrected" employment indexes for sectors within industry (Tables IV-29 and IV-30). This is true also for the derivation of actual and "corrected" investment indexes, although in this case the procedure is somewhat more complicated. Capital productivity was measured by dividing Net National Product by capital assets, for economic sectors (Table IV-24), and Gross Industrial Product by capital assets for industrial sectors (Table IV-37). In both cases indexes of actual new capital investment were calculated first and then recalculated on the basis of average productivity increases to give the "corrected" indexes in Tables IV-1 and IV-2.

The procedure used in developing a "corrected" gross investment index, on the basis of average growth in capital productivity, is complicated by two considerations: (1) We are interested in the annual flow of gross investment, but capital productivity has been measured in terms of capital stocks (output/capital assets). Therefore, it is necessary to establish a relationship between changes in capital productivity based on the stock of capital assets and the annual flow of gross investment. (2) In establishing a relationship between capital assets and gross investment, account must be taken of capital replacement.

If $Y_i(t)$ = Annual Net National Product per economic sector, or annual Gross Industrial Product per industrial sector,

$K_i(t)$ = Annual valuation of capital assets per economic sector or industrial sector,

$I_i(t)$ = Annual gross investment per economic sector or industrial sector,

$R_i(t)$ = Value of capital assets replaced each year, per sector,

$gk_i(t)$ = Annual rate of growth (or decline) in capital productivity for $t = 1 \dots T$ (1960 - 1967)

$i = 1 \dots n$ (five economic sectors and four industrial sectors).

Then: 1) $K_i(t) = K_i(t - 1) + I_i(t) - R_i(t).$

$R_i(t) = K_i(t - 1) + I_i(t) - K_i(t).$

$I_i(t) = K_i(t) - K_i(t - 1) + R_i(t).$

analysis we will be using the observed average rate of productivity growth for all sectors and deriving from it a corrected $K_i^*(t)$ for each period. We then go on to determine $R_i^*(t)$ and $I_i^*(t)$, to discover what the annual value of gross investment would have been in each economic or industrial sector if the growth of capital productivity in that sector had equaled the average rate.

The procedure followed can be illustrated with the following example: (Summarized in Tables IV-1 and IV-2).

Step 1: $Y_i(t)$ = determined for each sector ($Y_i(1) = 1960$).

This equals the actual production as recorded in Tables IV-12 and IV-26.

Step 2: $\hat{G}k(t)$, or the average growth in capital productivity for all economic sectors, expressed as an index number,¹ is taken from Table IV-25² (years 1961 and

1 $gk_i(t)$ can be expressed in index form =

$$Gk_i(t) = \frac{100 [Y_i(t) \times K_i(1)]}{Y_i(1) \times K_i(t)}, \text{ so } K_i(t) = \frac{100 [Y_i(t) \times K_i(1)]}{[Gk_i(t) \times Y_i(1)]}.$$

Substituting $\hat{G}k(t)$ for $Gk_i(t)$ gives us Equation 3:

$$K_i^*(t) = \frac{100 [Y_i(t) \times K_i(1)]}{[\hat{G}k(t) \times Y_i(1)]} \text{ where } (1) = 1960.$$

2 Economic sectors, not sectors within industry, are used from here on to illustrate the procedure.

1962 were calculated separately as indicated in Table IV-1.

Step 3: $R_i(t)$ is determined in the following steps:

(a) It is found for each sector from the actual data of Tables IV-20 and IV-22 and according to equation (1) $R_i t = K_i(t - 1) + I_i(t) - K_i(t)$.

E.g. for 1965, $R_i t$ for industry = $K_i(t - 1)$
124,153 million M.

+	$I_i(t)$	-	$K_i(t)$	=	2,764 million
	11,003 m. M.		132,392 m.M.		Mark.

(b) This total is then calculated as a percent of the previous year's capital assets. (e.g.

$\frac{2,764}{124,153} \times 100 = 2.2\%$ This is the figure found

in row 3, Table IV-1. It is later applied to the corrected capital indexes $[K_i^*(t - 1)]$ to determine the amount of capital that might have been

$$\begin{aligned}
 2) \quad & \frac{Y_i(t)}{K_i(t)} - \frac{Y_i(t-1)}{K_i(t-1)} \\
 gk_i(t) = & \frac{\frac{Y_i(t)}{K_i(t)} - \frac{Y_i(t-1)}{K_i(t-1)}}{\frac{Y_i(t-1)}{K_i(t-1)}} = \frac{Y_i(t) \times K_i(t-1)}{Y_i(t-1) \times K_i(t)} - 1 = \% \text{ rate} \\
 & \text{of growth} \\
 & \text{per year.}
 \end{aligned}$$

If we are given: $Y_i(t)$ as the output planning objective for sector i for year t ,

$K_i(t-1)$ as the value of capital assets in sector i in the preceding year,

$Y_i(t-1)$ as the output of sector i in the preceding year,

and $gk_i(t)$ as the rate of growth of capital productivity in sector i in period t , it is possible to determine the required capital $K_i(t)$ by the use of equation 2.

$$\begin{aligned}
 K_i(t) &= \text{quantity of capital assets required in sector } i, \text{ in} \\
 &\text{period } t, \text{ given the rate of growth in capital} \\
 &\text{productivity } gk_i(t) \text{ in order to produce output } Y_i(t) \\
 &= \frac{[Y_i(t) \times K_i(t-1)]}{gk_i(t) \times Y_i(t-1)} - 1
 \end{aligned}$$

As formulated above, $K_i(t)$ can only be found after $gk_i(t)$ has been determined. However, in the following

replaced under the hypothetical situation = $R_i^*(t)$.

Step 4: $K_i^*(t)$ = determined for each year, using the actual capital assets in the year 1960 as a basis and assuming an average increase in capital productivity for each of the sectors $[\hat{G}_k(t)]$.

Using equation 3,

$$K_i^*(t) = \frac{100 [Y_i(t) \times K_i(1)]}{\hat{G}_k(t) \times Y_i(1)}$$

we derive "corrected" values for K_i^* for each year.

E.g. for Industry and Productive Handicrafts for 1965,

$$K_i^*(t) = \frac{\begin{array}{cc} Y_i(t) & K_i(1) \\ (51,930) & \times \quad 96,279 \end{array}}{\begin{array}{cc} (\hat{G}_{kt}) & \times \quad Y_i(1) \\ 89.4 & \quad 41,244 \end{array}} = 135,597 \text{ Million M.}$$

This equals the value of capital assets that the industrial sector would have had to possess in 1965, given the $\hat{G}_k(t)$ rate of growth in capital productivity, in order to produce $Y_i(t)$ value of output.

Step 5: Given the values of $K_i^*(t)$ for each year, 1961 - 1967 and for each sector, the total amount of Replacement capital $[R_i^*(t)]$ can now be calculated, on the basis of Step 3 b. For example, $R_i^*(t)$ for industry and productive handicrafts in 1965 = 2.2% $K_i^*(t - 1) = \frac{2.2}{100} \times 128,193 = \underline{2,836}$ million DM.

(Again, the rate of replacement capital was calculated from actual data and is now applied to the corrected data 1.) This is given in Table IV-1 row 4.

Step 6: Having obtained $K_i^*(t)$ and $R_i^*(t)$ it is now possible to obtain $I_i^*(t)$ = "corrected" annual gross investment for each sector.

$$\text{e.g. } I_i^*(t) = K_i^*(t) - K_i^*(t - 1) + R_i^*(t).$$

e.g. Again, for industry and productive handicrafts in 1965,

$$I_i^*(t) = \begin{matrix} K_i^*(1965) \\ 135,597 \end{matrix} - \begin{matrix} K_i^*(1964) \\ 128,893 \end{matrix} + \begin{matrix} R_i^*(1965) \\ 2,836 \end{matrix} = 9,540 \text{ million M.}$$

TABLE IV-1

DERIVATION OF CORRECTED GROSS INVESTMENT BY ECONOMIC SECTOR

	1961	1962	1963	1964	1965	1966	1967
Industry and Productive Handi- crafts	Y(1) = Net Production in 1960 = 41,244 (Million M. comparable price) K(1) = Capitals Assets in 1960 = 96,279 Million M.						
Planned Production $Y_i(t)$ Million M.	474,734 ¹	45,964	47,288	49,749	51,930	54,522	57,557
Average Change in Productivity $G_k(t)$	98.0	93.6	90.5	90.1	89.4	89.0	90.1
Replacement Capital as % of $K_i(t-1)$	2.0	1.9	2.0	0.0	2.2	3.2	4.4
Replacement Capital Million M. $R_i^*(t)$	1,882	2,025	2,293	0	2,836	4,339	6,292
Current Capital Assets $[K_i^*(t)]$	106,557	114,634	121,976	128,893	135,597	143,005	149,123
Current Invest- ment $[I_i(t)]$	12,160	10,102	9,635	6,917	9,540	11,747	12,410
Index of Invest- ment, 1960 = 100	159.0	131.1	126.0	90.5	124.8	153.6	162.3

¹ Production and productivity figures for 1961 and 1962 rely on very approximate estimates of Net National Product derived from indexes in S.J.D.D.R. 1966, p. 21 and pp. 40-41 which are based on current prices.

TABLE IV-1 Continued

DERIVATION OF CORRECTED GROSS INVESTMENT BY ECONOMIC SECTOR

	1961	1962	1963	1964	1965	1966	1967
Construction	Y(1) = 5,143		K(1) = 2,808				
$Y_i(t)$ Million M.	5,415	5,418	5,301	5,989	6,449	6,868	7,373
Gk(t)	98.0	93.6	90.5	90.1	89.4	89.0	90.1
$R_i t$ as % of $K_i^*(t-1)$	0.6	-5.7	-12.3	1.2	3.8	4.1	6.1
$R_i^*(t)$ in Million M.	16	-172	-389	38	138	161	257
$K_i^*(t)$	3,017	3,160	3,198	3,629	3,939	4,213	4,468
$I_i^*(t)$	225	-29	-351	469	448	435	512
Index of $I^*(1960) =$ 100	55.8	(-)	(-)	116.4	111.1	107.9	127.0

TABLE IV-1 Continued
DERIVATION OF CORRECTED GROSS INVESTMENT BY ECONOMIC SECTOR

	1961	1962	1963	1964	1965	1966	1967
Agriculture and Forestry	Y(1) = 11,991						
	K(1) = 20,486						
$Y_i(t)$ Million M.	9,667	9,074	11,106	11,422	12,147	12,733	13,525
$\hat{G}_k(t)$	98.0	93.6	90.5	90.1	89.4	89.0	90.1
R_i as % of $K_i^*(t-1)$	1.8	-.02	.02	7.3	5.2	4.2	4.7
$R_i^*(t)$ in Million M.	367	-34	33	1,531	1,126	975	1,149
$K_i^*(t)$	16,852	16,562	20,966	21,658	23,213	24,442	25,646
$I_i^*(t)$	-3,265	-324	4,437	2,223	2,681	2,204	2,353
Index of $I^*(1960 = 100)$	-	-	233.6	117.1	141.2	116.1	123.9

TABLE IV-1 Continued

DERIVATION OF CORRECTED GROSS INVESTMENT BY ECONOMIC SECTOR

	1961	1962	1963	1964	1965	1966	1967
Transportation and Communication	Y(1) = 4,025						
	K(1) = 33,078						
$Y_i(t)$ Million M.	4,017	3,874	4,338	4,720	4,756	4,926	5,041
$\hat{G}k(t)$	98.0	93.6	90.5	90.1	89.4	89.0	90.1
$R_i(t)$ as % of $K_i^*(t-1)$	1.9	1.5	-.8	2.1	1.2	1.3	2.7
$R_i^*(t)$ in Million M.	612	505	-272	827	517	568	1,228
$K_i^*(t)$	33,686	34,014	39,393	43,052	43,720	45,486	45,980
$I_i^*(t)$	1,220	833	5,107	4,486	1,185	2,334	1,722
Index of $I^*(1960) =$	75.0	51.2	314.1	275.9	72.9	143.5	105.9

$$(1) \quad K_i^*(t) = \frac{100 (Y_i(t) \times K_1)}{Gk(t) (Y_1)}$$

$$(2) \quad I_i^*(t) = K_i^*(t) - K_i^*(t-1) + R_i^*(t).$$

TABLE IV-1 Continued

DERIVATION OF CORRECTED GROSS INVESTMENT BY ECONOMIC SECTOR

	1961	1962	1963	1964	1965	1966	1967
Trade							
Y(1) = Net Production in 1960 = 9,516 (Million M. comparable prices)							
K(1) = Capitals Assets in 1960 - 8,730 (Million M.)							
Planned Production [Y _i (t)] Million M.	9,328	9,719	9,768	10,379	10,975	11,547	12,076
Average Change in Productivity [G _k (t)]	98.0	93.6	90.5	90.1	89.4	89.0	90.1
Replacement as % of K [*] (t - 1)	2.0	-0.9	-0.7	0.6	-0.1	-0.005	3.8
Replacement - Million M. [R _i [*] (t)]	172	-79	-67	59	-11	-6	452
Current Capital Assets [K _i [*] (t)]	8,732	9,526	9,902	10,568	11,262	11,903	12,296
Current Investment [I _i [*] (t)]	174	715	309	725	683	635	845
Index of Investment, 1960 = 100	43.3	177.9	76.9	180.3	169.9	158.0	210.2

TABLE IV-2

DERIVATION OF CORRECTED GROSS INVESTMENT BY INDUSTRIAL SECTOR

	1961	1962	1963	1964	1965	1966	1967
Primary Sector	Y(1) = Gross Production in 1960 = 20,203 million M.						
	K(1) = Capitals Assets in 1960 = 47,179 million M.						
Planned Production [Y _i (t)] Million M.	21,521	22,893	23,948	23,721	25,305	27,112	28,830
Average Change in Productivity [G _k (t)]	100.3	100.2	98.0	93.1	93.2	93.8	95.5
Replacement as % of K _i [*] (t - 1) = R _i	2.7	1.6	1.4	0.3	2.4	2.5	3.4
Replacement - Million M. R _i [*] (t)	1,274	802	747	171	1,428	1,585	2,261
Current Capital Assets [K _i [*] (t)]	50,107	53,354	57,066	59,500	63,405	67,498	70,498
Current Gross Investment [I _i [*] (t)]	4,202	4,049	4,459	2,605	5,330	5,675	5,259
Index of Investment 1960 = 100	93.4	90.0	99.1	57.9	118.5	126.2	116.9

TABLE IV-2 Continued

DERIVATION OF CORRECTED GROSS INVESTMENT BY INDUSTRIAL SECTOR

	1961	1962	1963	1964	1965	1966	1967
Metal Processing Industry	Y(1) = 23,585 million M.		K(1) = 15,440 million M.				
$Y_i(t)$ million M.	25,228	27,584	29,630	30,987	33,209	35,615	38,243
$\hat{G}_k(t)$	100.3	100.2	98.0	93.1	93.2	93.8	95.5
$R_i(t)$ as % of $K_i^*(t-1)$	1.9	1.6	1.6	0.5	2.3	3.1	3.9
$R_i^*(t)$ in Million M.	293	263	288	99	509	723	958
$K_i^*(t)$	16,466	18,022	19,793	22,124	23,327	24,573	26,216
$I_i^*(t)$	1,319	1,819	2,059	2,430	1,712	1,969	2,601
Index of I^* (1960 = 100)	114.4	157.8	178.6	210.8	148.5	170.8	225.6

TABLE IV-2 Continued
DERIVATION OF CORRECTED GROSS INVESTMENT BY INDUSTRIAL SECTOR

	1961	1962	1963	1964	1965	1966	1967
Light Industry	Y(l) = 15,514 million M.			K(l) = 10,849 million M.			
Y(t) million M.	16,272	17,104	16,950	17,574	18,464	19,471	20,710
$\hat{G}_k(t)$	100.3	100.2	98.0	93.1	93.2	93.8	95.5
$R_i(t)$ as % of $K_i^*(t-1)$	2.4	1.9	0.6	-0.5	1.5	3.4	7.2
$R_i^*(t)$ in Million M.	260	216	72	-60	198	471	1,045
$K_i^*(t)$	11,345	11,937	12,095	13,200	13,854	14,516	15,165
$I_i^*(t)$	756	808	230	1,045	852	1,133	1,694
Index of I^* (1960 = 100)	116.9	124.9	35.6	161.5	131.7	175.1	261.8

TABLE IV-2 Continued

DERIVATION OF CORRECTED GROSS INVESTMENT BY INDUSTRIAL SECTOR

	1961	1962	1963	1964	1965	1966	1967
Foods Industry	Y(1) = 10,129 million M.			K(1) = 6,844 million M.			
Y(t) million M.	10,526	10,529	10,962	11,373	11,898	12,366	12,972
$\hat{G}k(t)$	100.3	100.2	98.0	93.1	93.2	93.8	95.5
$R_i(t)$ as % of $K_i^*(t-1)$	1.7	1.9	-0.4	-0.3	5.8	4.6	3.3
$R_i^*(t)$ in million M.	116	135	-28	-23	479	397	294
$K_i^*(t)$	7,091	7,100	7,558	8,254	8,626	8,908	9,178
$I_i^*(t)$	363	144	430	673	851	679	564
Index of I^* (1960 = 100)	173.7	68.9	205.7	322.0	407.2	324.9	270.0
(1) $K_i^*(t) = \frac{100 (Y(t) \times K_1)}{Gk(t) (Y_1)}$	(2) $I_i^*(t) = K_i^*(t) - K_i^*(t-1) + R_i^*(t)$						

Step 7: A new "corrected" index of gross investment can now be derived for each sector and compared with the actual. The same series of steps is followed through for each economic sector and in the subsequent section for each industrial sector.

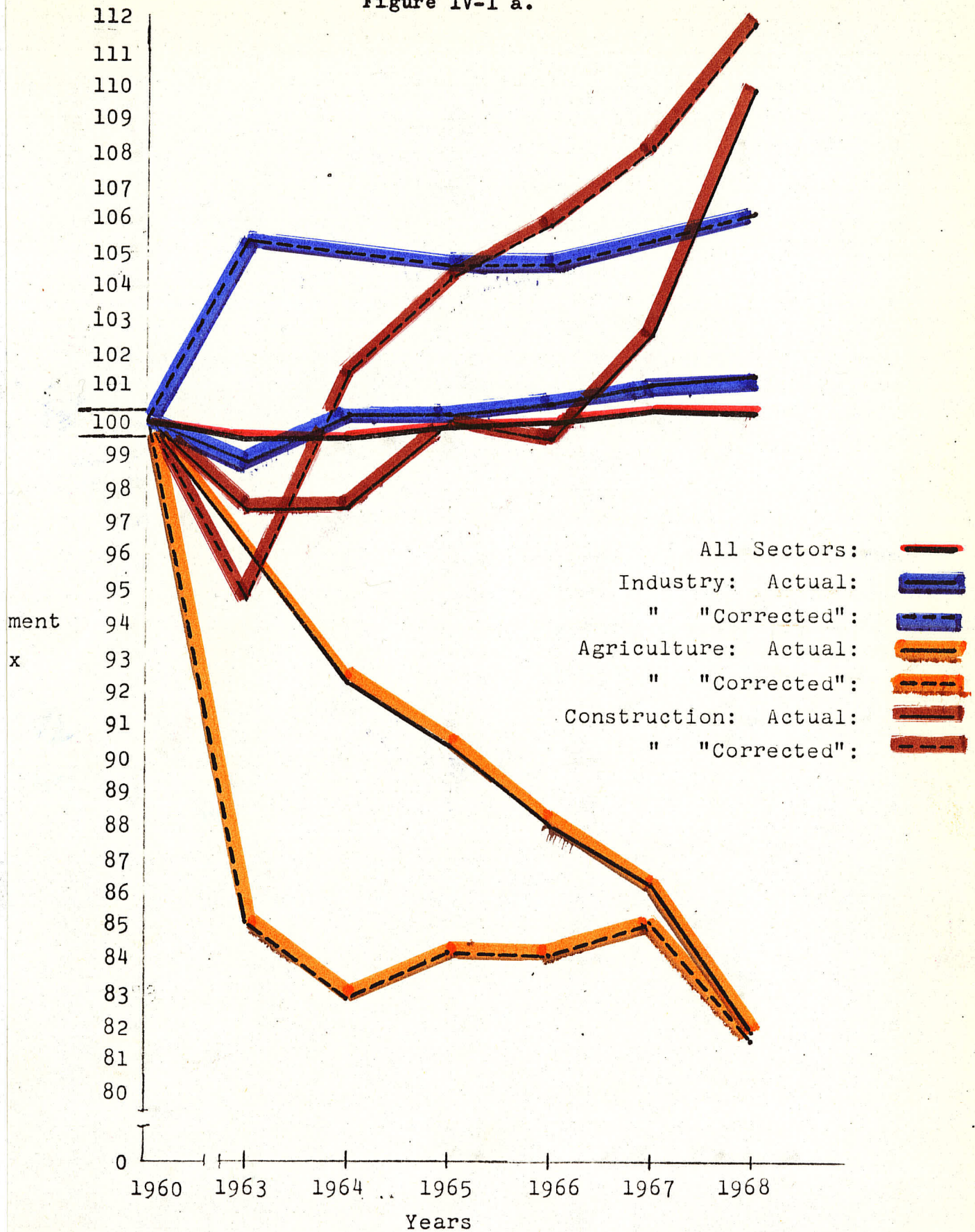
The importance of this type of analysis for both employment and investment can be illustrated most easily with the use of diagrams.

Figures IV (a) and IV (b) illustrate, on the basis of index numbers, changes in employment in five major sectors of the East German economy: Construction, Industry, Trade, Transportation and Communication, and Agriculture. The index series covers a period of eight years, from December 31, 1960 to December 31, 1968. The solid red line represents growth in employment for all sectors combined, including certain sectors, such as service industries (whose classification was too vague to permit consistent comparison in all of the diagrams), not treated separately in this analysis. The five sectors treated individually are represented by solid and broken lines. The former represent actual growth in employment while the broken lines represent "corrected" growth patterns as described above. The latter permit one to estimate in a rough way how employment might have varied if each sector had experienced an average rate

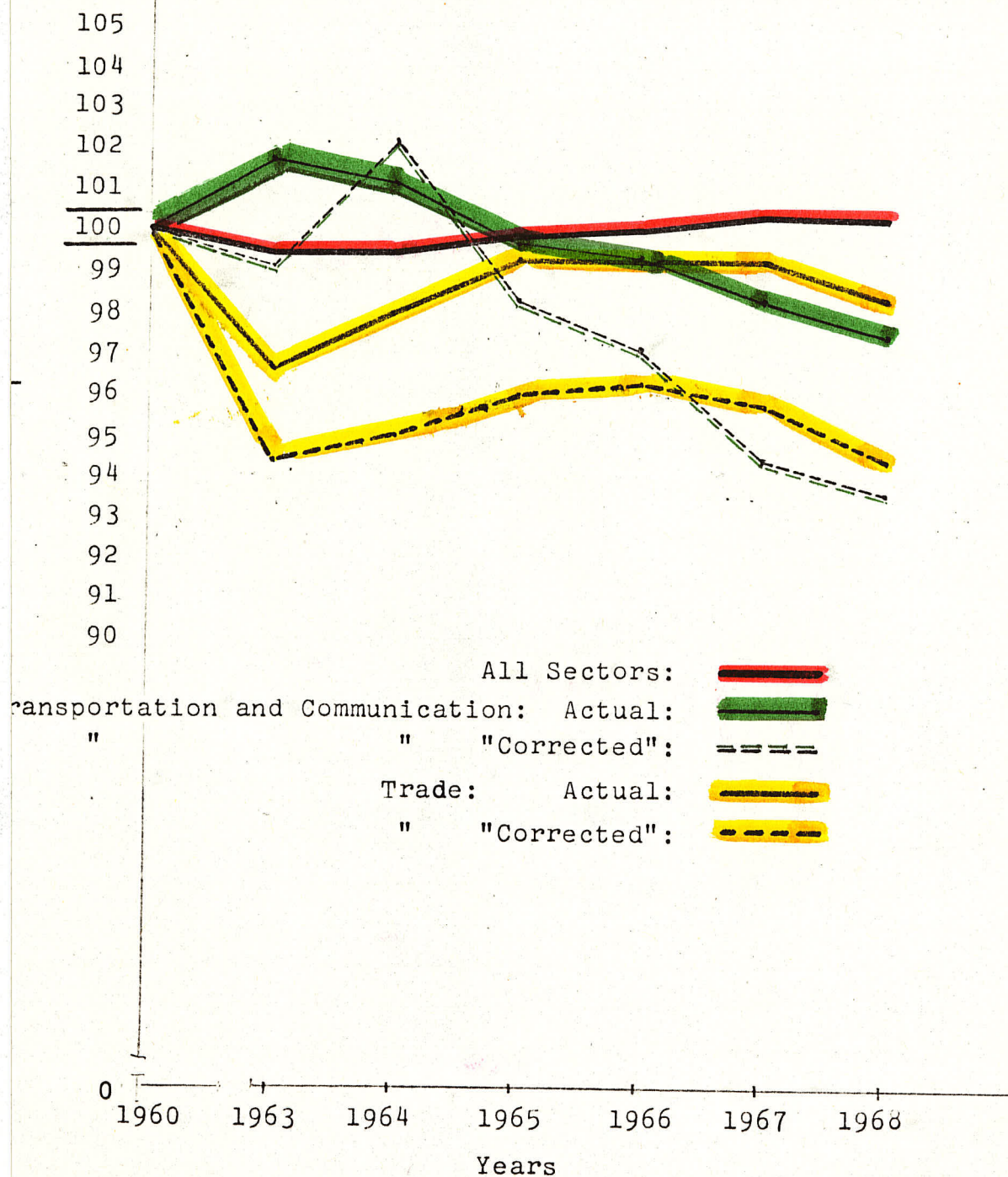
INDEX OF ACTUAL AND "CORRECTED" EMPLOYMENT
BY ECONOMIC SECTOR 1960 - 1968 (1960 = 100)

140

Figure IV-1 a.



INDEX OF ACTUAL AND "CORRECTED" EMPLOYMENT
BY ECONOMIC SECTOR 1960 - 1968 (1960 = 100)



of increase in labor productivity. No broken line can be derived for "all sectors" since the actual rate of change for all sectors is equal by definition to the average rate.

Actual Rate of Change in Employment

The diagrams illustrate the virtual stagnation of total employment in East Germany between 1960 and 1968. An absolute decline after 1960 was arrested in 1963 but it wasn't till 1966 that the 1960 level of employment was regained. In 1968 employment was still only 100.3% of the 1960 level.

Two sectors, construction and industry, experienced a greater than average increase in employment over the eight year period. The increase in industry was slow but steady after 1963, while the employment picture for construction was much more erratic, declining sharply between 1960 - 63 and rising very sharply between 1966 and 1968.

Two sectors, transportation and communication, and trade, showed a general but not heavy decline in employment during this period. The former rose between 1960 - 63, an unusual deviation from the normal pattern, but declined thereafter, falling below the 1960 level after 1964.

The remaining sector, agriculture, experienced a sharp

decline in employment, so that the level in 1968 was less than 82% of that in 1960.

"Corrected" Rate of Change in Employment

The broken lines in the diagrams indicate that the growth of employment in those sectors which had slight increases -- industry and construction -- would have been even more marked if labor productivity there had not increased above the average rate. For example, the level of employment in industry in 1968 would have been 106% of the 1960 level instead of slightly more than 101%. The increase of employment in construction would have been steadier than it actually was, rising continuously after 1963.

On the other hand, the other sectors would have experienced sharper declines in employment than they actually did. A certain part of the labor force was retained in these sectors because of their below average production increases. In agriculture, employment would have fallen very sharply between 1960 and 1963 (the 1963 level would have been only 85% of the 1960 level), but by 1968 productivity had increased so substantially in this sector that there was virtually no discrepancy between actual and "corrected" rates of change.

Actual Rate of Change in Investment

Figures IV-2 (a) and IV-2 (b) illustrate actual and "corrected" rates of change in investment by economic sector, based on absolute amounts. (Index numbers were not used because negative figures are involved.)

The experience of individual sectors differed widely. By 1968 the level of actual new investment in industry was 164% of that in 1960, and the comparative figure for agriculture was 216%. The growth of the latter was especially rapid after 1964.

Two other sectors, construction and trade, followed an erratic course in investment. They first experienced a decline in new investment between 1960 and 1963 (especially construction) and then fairly sharp increases after 1963. The net result was that the level of investment in the trade sector in 1968 was 311% of that in 1960, and the corresponding percentage for construction was 216.

Transportation and communication had a slow but steady increase in actual investment during the period, so that the 1968 level was 150% that of 1960.

"Corrected" Rate of Change in Investment

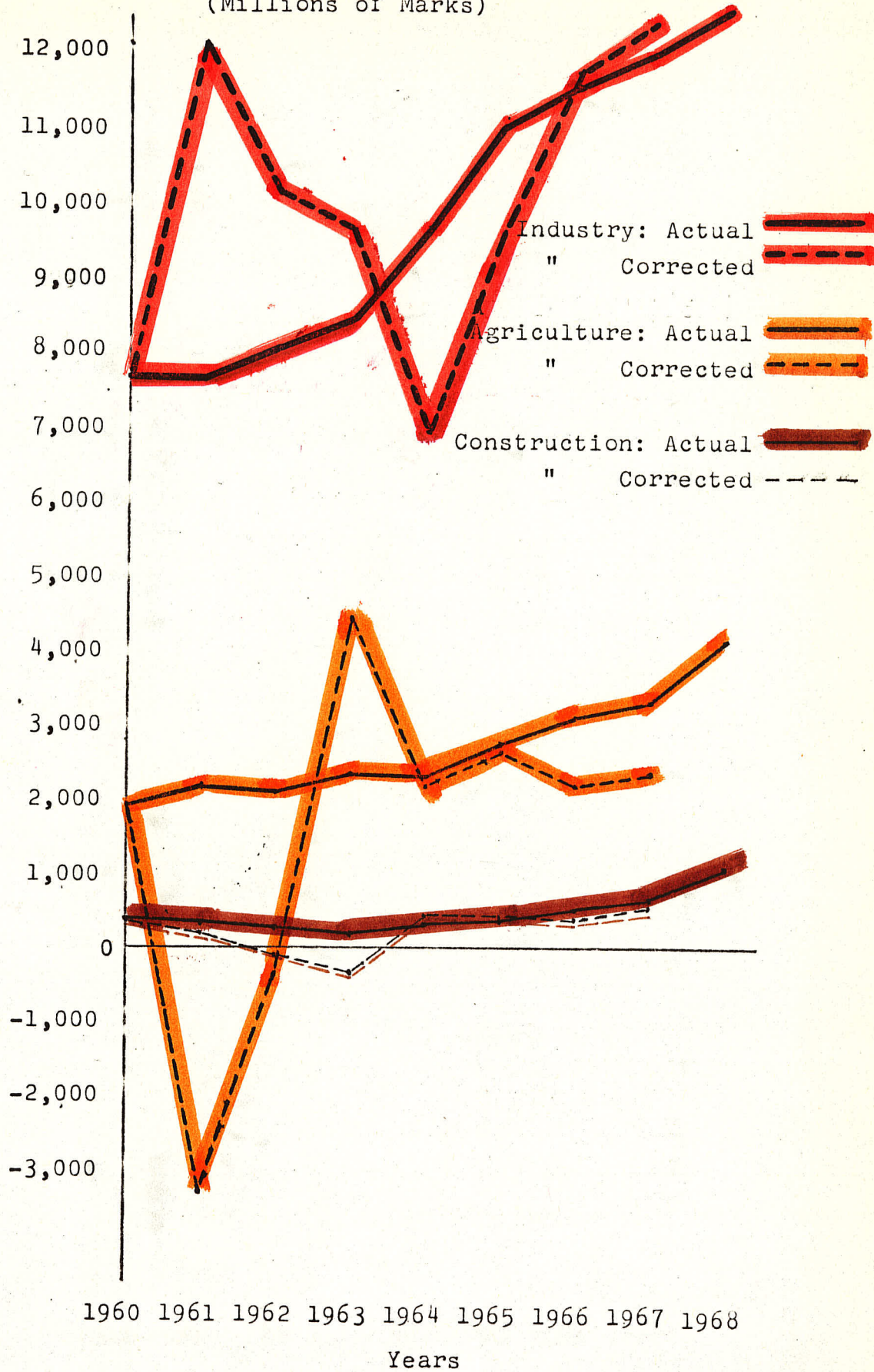
The broken lines in the diagrams suggest a number of possibilities regarding the allocation of investment funds

ANNUAL ACTUAL AND CORRECTED INVESTMENT
BY ECONOMIC SECTOR, 1960 - 1968

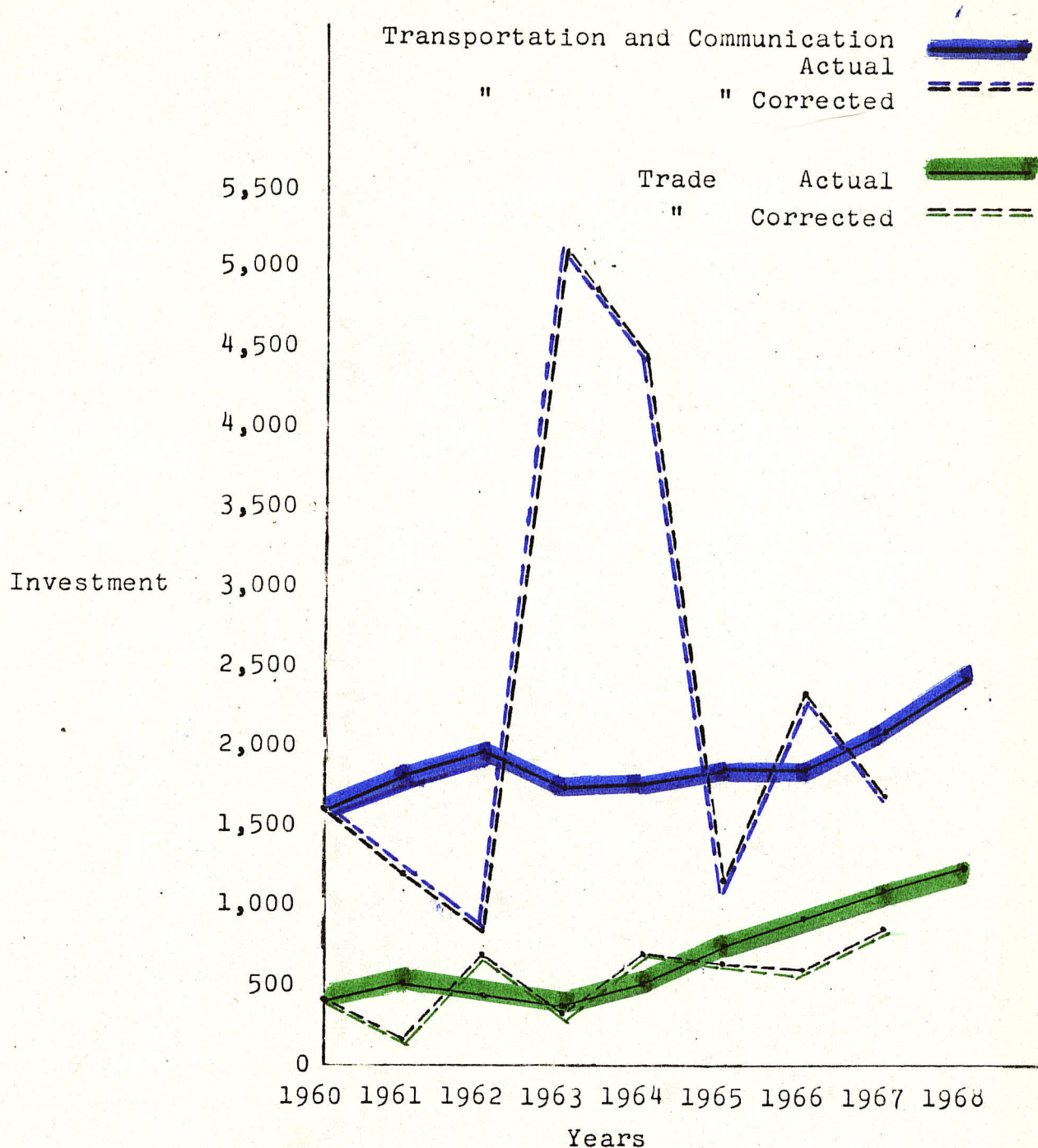
145

(Millions of Marks)

Investment



ANNUAL ACTUAL AND CORRECTED INVESTMENT
BY ECONOMIC SECTOR, 1960 - 1968
(Millions of Marks)



by sectors. Substantial investment funds, for example, flowed into agriculture because of greater than average capital productivity decreases in this sector. In fact, if agricultural capital productivity had grown at the average rate after 1960 so much capital could have been taken out of agriculture that investment for that year and the succeeding year would have been negative. This is true to a lesser extent for construction as well. In trade corrected investment was always positive but less overall than actual investment.

Capital productivity declined less than the average in industry and transportation and communication so that "corrected" investment would have been higher overall for these sectors than actual investment.

These results are summarized in Table IV-3. This shows that if planners could have counted on average capital productivity changes in each sector, investment in industry would have been 68.7% of total investment between 1961 and 1967 instead of only 63.9%; investment in construction would have been 1.6% of the total instead of 2.7%; the share of agricultural investment would have fallen from 16.9% of the total to only 9.8%. The share of total investment going to transportation and communication would have increased from 12.3% to 16.0%, and for trade it would have

TABLE IV-3

ACTUAL AND CORRECTED GROSS INVESTMENT BY ECONOMIC

SECTOR, 1961 - 1967

	Industry	Construc- tion	Agricul- ture and Forestry	Transportation and Communication	Trade	Total
a) Actual Total Investment Million M.	68,374	2,835	18,039	13,118	4,603	106,969
	(63.9% of Total)	(2.7% of Total)	(16.9% of Total)	(12.3% of Total)	(4.3% of Total)	100.0%
b) Corrected Total Investment Million M.	72,511	1,709	10,309	16,887	4,086	105,502
	(68.7% of Total)	(1.6% of Total)	(9.8% of Total)	(16.0% of Total)	(3.9% of Total)	100.0%
c) b as % of a	106.1	60.3	57.1	128.7	88.8	148

declined from 4.3% to 3.9%. Thus, very substantial increases would have gone to industry and transportation and communication, and substantial investment funds could have been released from agriculture (approximately 7,770 million Marks), construction and trade.¹

It must be stressed again that this is only one way of measuring the impact of changes in factor productivity on economic planning, but it indicates how profound the impact may actually be. Looked at in another way, if capital productivity had changed at an average rate in such sectors as agriculture, trade and construction, and if industry and transportation and communication had maintained their actual rate of productivity growth, no addition of capital to the latter sections would have been necessary in order to maintain the same production levels. This would have resulted in a saving of 4,137 million Marks of investment in industry and 3,769 million Marks in transportation and communication - or a total saving of 7,906 million Marks in investment over the seven year period.

¹ The total of corrected investment differs by slightly more than 1% from that of actual investment because of rounding of numbers in the calculations and possibly because arithmetic rather than geometric averages were used. This was not judged significant in light of the general way in which the results are used here.

A comparison between actual employment and actual investment trends in each sector (comparing Figures IV-1 (a) with IV-2 (a) and IV-1 (b) with IV-2 (b)) also produces some interesting results. In the case of agriculture and trade, employment moved in the opposite direction of investment. Obviously in these sectors a major effort was made to substitute capital for labor in production. In the case of trade the rapid increase of investment does not seem to have increased labor productivity appreciably, as is indicated by the "corrected" employment line lying considerably below the actual. This prevented an even sharper reduction in employment. In agriculture a somewhat similar result is evident. Ideally, as we have seen, employment should have dropped more quickly and further than it did.

In the case of construction and industry different patterns are evident. Initially both investment and employment dropped in construction and after 1963 both increased. The sharp increase in investment evidently led to an appreciable increase in labor productivity so that employment rose less rapidly than would otherwise have been necessary. In industry there is a similar pattern. Both investment and employment increased after 1963 but the increase in labor productivity permitted a relatively small increase in the labor force.

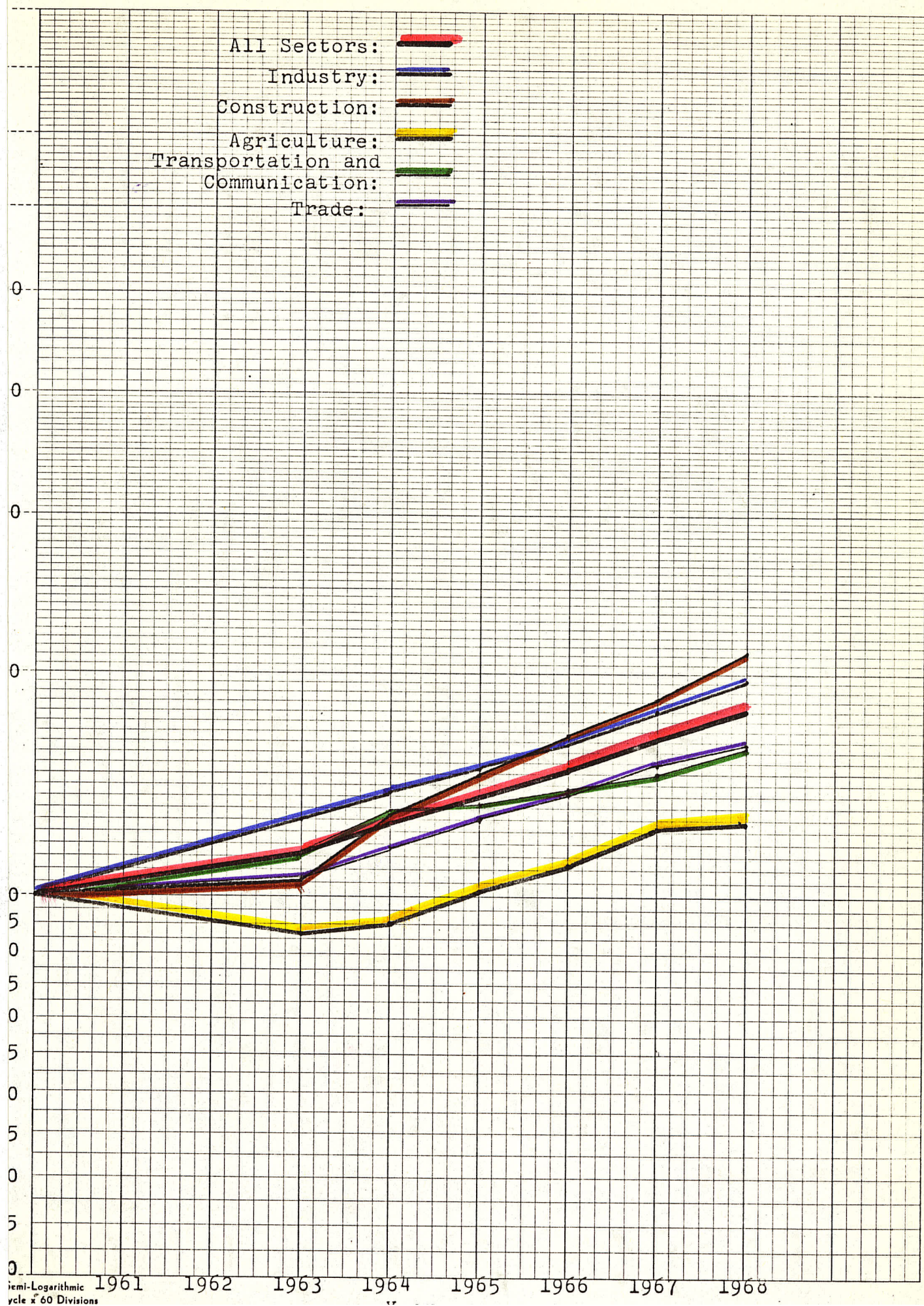
Changes in Net Product by Sector

Figure IV-3 illustrates the changes in Net Product for individual economic sectors between 1960 and 1968. For all sectors combined there was a steady and fairly substantial increase in net production during these years. The semi-logarithmic scale indicates that the rate of increase rose slightly after 1963 and has remained virtually constant since that time.

All of the individual sectors except agriculture had absolute increases in production throughout the period. Net production in agriculture declined absolutely between 1960 and 1963 and only reached the 1960 level in 1965. Substantial increases between 1965 - 67 have been somewhat dampened by a decline in the rate of growth between 1967 - 68. The rate of increase for most of the other sectors was remarkably constant after 1963. Construction has experienced the largest increase in net production since 1960 (156% of the 1960 level), followed by industry, trade, transportation and communication, and agriculture.

Table IV-4, which ranks the five sectors discussed above in terms of increases in employment, investment, and net production is a convenient way of summarizing the analysis up to this point.

INDEX OF NET NATIONAL PRODUCT BY ECONOMIC SECTOR, 1960 - 1968



If one ignores the "actual employment" and "actual investment" columns, the rankings of the other three columns are remarkably similar. In each case the fourth and fifth place are occupied by transportation and communication and agriculture and the second place belongs to industry. Construction is first, and trade third, in the "Corrected Employment" and Production columns, while their rank is reversed in the "Corrected Investment" column.

It appears from this analysis that the rate of increase of employment and investment in five major sectors of the East Germany economy was highly correlated with increases in the rate of production. This is especially the case when "corrected" investment figures are used, i.e. when the influence of productivity differences is removed from allocative decisions.

During the period under discussion, employment, investment, and production grew most quickly in the construction sector, followed closely by industry and trade. It might be noted that the course of change in construction was quite erratic, and that the pattern of growth for the industrial sector was more consistent than that for any other sector. Economic planning in East Germany has apparently called for periodically sharp increases, and occasional sharp decreases, in construction activity. (The

reasons for this will become clearer in the discussion of regional developments and in the following chapter). On the other hand there has been a sustained effort to increase industrial production through increased allocations of employment and investment.

TABLE IV-4

RANK OF SECTORS BY PERCENTAGE INCREASES, 1960 - 1967 (or 1968)

Sector	Actual Employment 1960 to 1968	"Corrected" Employment 1960 to 1968	Actual Investment 1960 - 1968	"Corrected" Investment 1960 - 1967	Net Prod 1960 - 1968
Construc- tion	1 (109.9)	1 (111.9)	2 (268)	3 (127.0)	1 (156)
Industry	2 (101.4)	2 (106.2)	4 (164)	2 (162.3)	2 (148)
Trade	3 (98.4)	3 (94.4)	1 (311)	1 (210.2)	3 (132)
Transporta- tion and Communi- cation	4 (97.6)	4 (93.7)	5 (150)	5 (105.9)	4 (131)
Agricul- ture	5 (81.9)	5 (81.7)	3 (216)	4 (123.9)	5 (114)

(Percentage of the 1960 level in brackets).

Finally the relative importance of the different economic sectors can be judged by comparing the proportion of employment, capital, and net product which can be attributed to them in 1960 and 1968 (1967 in the case of capital assets).

The Table below summarizes these comparisons.

TABLE IV-5 (a)

RELATIVE IMPORTANCE OF ECONOMIC SECTORS BY
EMPLOYMENT, CAPITAL ASSETS AND NET PRODUCT

1960 and 1968

Sector	Year	Percent of Total Employ- ment (Table	Percent of Capital Assets (1960 and 1967 (Table	Percent of Net National Product (Table
Industry	1960	41.4%	59.7%	56.4%
	1968	41.8	61.1	59.7
Agri- culture	1960	17.0	12.7	16.4
	1968	13.8	13.5	13.4
Trade	1960	11.6	5.4	13.0
	1968	11.4	5.4	12.2
Transporta- tion and Communi- cation	1960	7.2	20.5	5.5
	1968	7.0	17.8	5.1
Construc- tion	1960	6.1	1.7	7.0
	1968	6.7	2.2	7.8

It is clear from this table that the relative importance of the various sectors remained remarkably constant in the eight year interval. By all measurements industry increased slightly in importance, so that it is

now by far the most significant sector in the economy, while trade, and transportation and communication, declined slightly. Except for capital assets, agriculture's share declined more sharply than any other sector. The construction sector, in line with growth rates already observed, increased its share in the economy.

B) The Growth of Employment, Investment, and Production by Industrial Sector, Subsector, and Branch.

Actual and "corrected" series of employment and investment have been derived for industrial sectors for 1959 to 1967. Again, several diagrams are used to illustrate these developments for industry. The analysis is supplemented with the Tables found at the end of this chapter and in the Appendix.

Actual Employment Changes by Industrial Sectors

The solid lines in Figures IV-4 (a) and IV-4 (b) show actual employment changes for industry from 1959 to 1968. The red line for all industrial sectors combined

INDEX OF ACTUAL AND "CORRECTED" EMPLOYMENT BY
INDUSTRIAL SECTOR, 1959 - 1968 (1959 = 100)

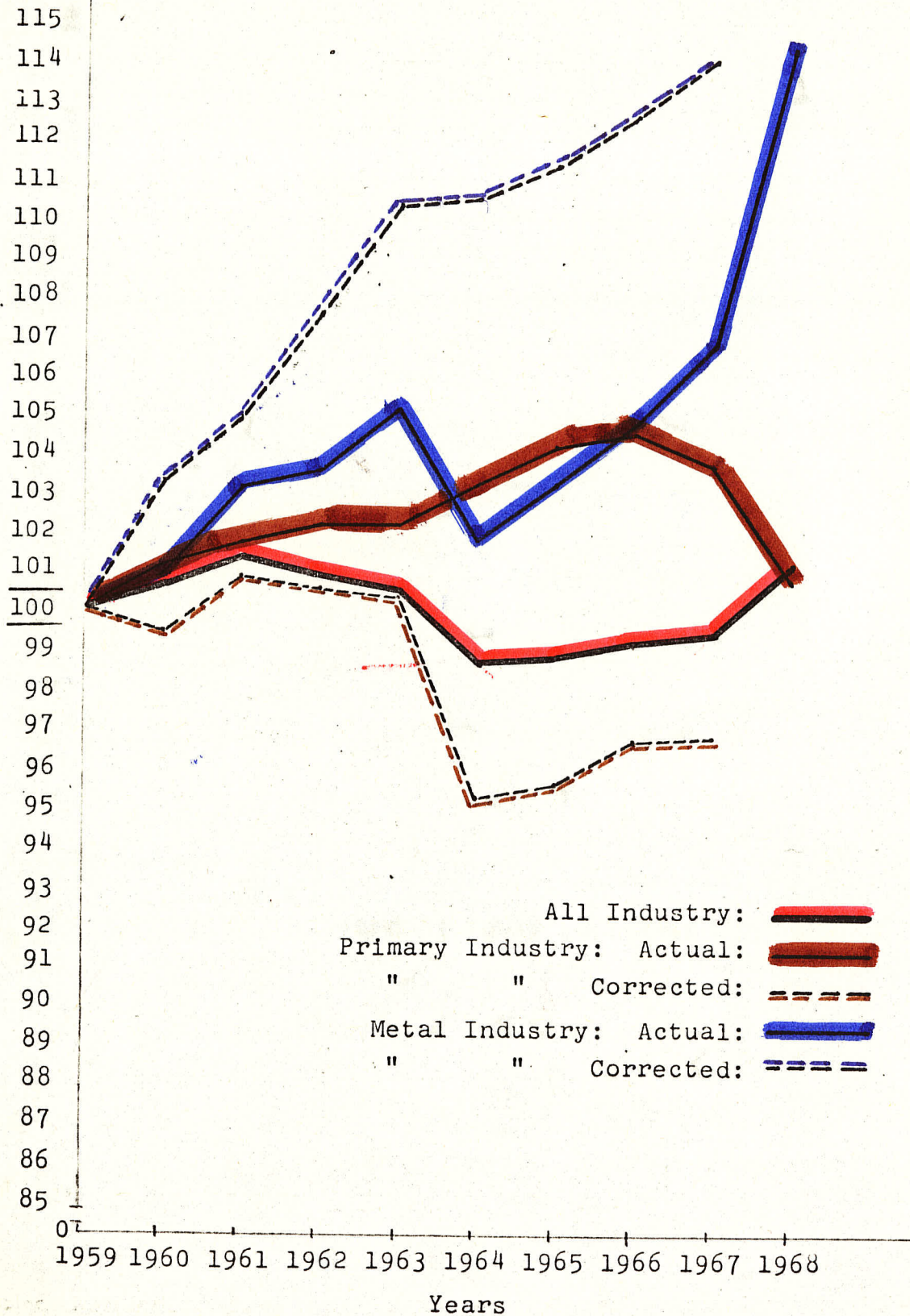
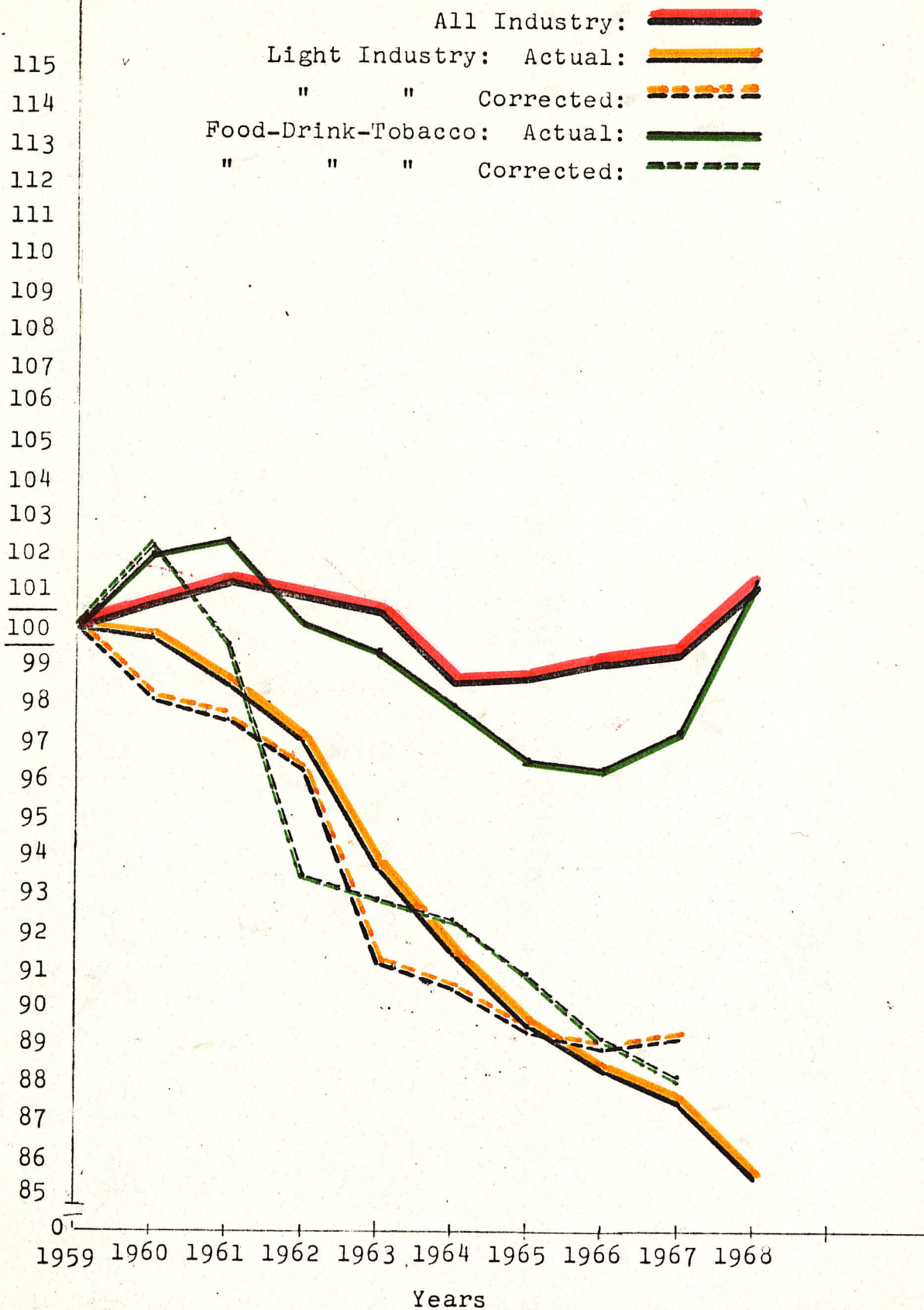


Figure IV-4 b.

INDEX OF ACTUAL AND "CORRECTED" EMPLOYMENT BY
INDUSTRIAL SECTOR, 1959 - 1968 (1959 = 100)



indicates a rather erratic trend.¹ Employment increased from 1959 to 1961, declined gradually from 1961 to 1963, and decreased more sharply from 1963 to 1964. It began to increase gradually after 1964, but only a sharp increase from 1967 - 68 brought it back to the employment level of 1959.

Actual changes for individual industrial sectors show wide variations. Two sectors, Primary and Metal had employment increases substantially above the industrial average. The increases for Metals were fairly steep, with the exception of an unusually sharp downturn in 1963 - 64, so that by 1968 employment in this sector was 114.3% of that in 1959. Employment in the Primary Industry rose steadily but more slowly to a peak in 1966 (when it was 104.6% of the 1959 level), after which it underwent a sharp decline to the point where its level was slightly below the industrial average in 1968 (at 100.8% of the 1959 level).

¹ There are some apparent, but not very significant, discrepancies between the trend line shown here and that given for industry in Figures 1 (a) and 1 (b). These result partly from the use of different base years (with 1959 employment being less than 1960) and from a slightly more restricted definition of employment in this section than in the previous one (Here employment = "Arbeiter and Angestellte" instead of the slightly more comprehensive "Berufstaetige". The distinction is not very significant for industry). Figures 1 (a) and 1(b) do not indicate shifts between 1960-63. Keeping this in mind it is not difficult to reconcile the apparent differences in the two lines.

The two other sectors, Food and Light Industry, experienced substantial declines during most of the period. Employment decreased steadily and substantially in Light Industry, so that in 1968 it was only 85.6% of the 1959 level. In Food there was an increase in employment from 1959 - 1961 and then, after a considerable drop, another increase from 1966 - 1968. In 1968 employment in this sector was 101.3% of the 1959 level.

"Corrected" Employment Changes by Industrial Sector

When differences in labor productivity growth are "removed" from the data, by assuming that all sectors had an average growth in productivity, it is possible to form some estimate of how much of the labor allocation was due to the productivity factor. The broken lines in Figures IV-4 (a) and IV-4 (b) illustrate this.

Several interesting results emerge from this analysis. The allocation of labor to the Metal Industry, for example, would have been substantially higher than it was in fact. In 1967 employment in this sector would have been 114% of the 1959 level instead of 106.8%. On the other hand, the allocation of labor to the Primary Industry would have been considerably lower, or 96.8% of the 1959 level in 1967 instead of about 104%. Apparently, in order to achieve

production goals, considerable labor had to be retained in the Primary Industry, because of its lower than average growth in labor productivity, while some labor could be withheld from the Metal Industry because of its higher than average productivity increases.

Similar considerations apply to the Food Industry. After 1960 there might have been a sharp and steady decline in employment in this industrial sector if productivity of labor had increased by the industrial average. In 1967 employment would then have been only 88% of the 1959 level instead of the actual 97.3%.

Light Industry would have had slightly less employment during most of this period if its labor productivity had risen by the average rate and production goals had remained the same. However, after 1965 productivity was increasing faster than the industrial average and in 1967 the "corrected" level of employment was higher than the actual: 89.1% of the 1959 level instead of 87.5%.

TABLE IV-5 (b)
RANKING OF INDUSTRIAL SECTORS BY EMPLOYMENT INCREASES

Sector	Actual Employment (with 1967 as % of 1959)	"Corrected Employ- ment (1967 as % of 1959)
Metals	1 (106.8)	1 (114.0)
Primary	2 (103.8)	2 (96.8)
Food	3 (97.3)	4 (88.1)
Light	4 (87.5)	3 (89.1)

In Table IV-5 (b), the ranking by actual employment increases indicates the priority assigned to the different industrial sectors in terms of labor allocation. The Metals and Primary sectors received top priority, followed in order by Food and Light.

It is significant, however, that the "corrected" employment series gives a slightly different ranking and reveals some other interesting features. In this series there is a much wider gap between first ranked Metals and second ranked Primary sectors. Further, Light Industry replaces the Food Industry as third in priority ranking. It is apparent that ranking based only on actual increases in labor allocations would have given a misleading picture

of real planning priorities for industry.

Intra-Sector Analysis of Employment

In this section the allocation of labor within the industrial sectors will be examined. In the Metal Industry employment rose most sharply, above the average for the sector as a whole, in the following subsectors:¹

1. General Machinery (1967 = 121.6% of 1959)
2. Precision Tools, Optics (1967 = 116.6% of 1959)
3. Electro-Technical (1967 = 116.4% of 1959)
4. Heavy Machinery (1967 = 109.4% of 1959)

In Primary Industry employment rose sharply, above the sectoral average, in the following subsectors:

1. Metallurgy (1967 = 132.7% of 1959)
2. Energy (1967 = 111.6% of 1959)
3. Chemicals (1967 = 107.4% of 1959)

At the same time there were absolute declines in

¹ See Table IV-29. Within the General Machinery subsector machines for the Metal Industry received the greatest employment increases (295% of the 1959 level in 1967) followed by machines for the Food Industry (128.8%) and for Primary Industry (124.3%). In the Precision Tools - Optics subsector, measuring instruments and watches had increases of employment by 1967 to 128% of the 1959 level. See Table A-6, Appendix.

mining and in the building materials subsector.¹

In the Light Industry sector every subsector had absolute declines in employment between 1959 and 1967 but Glass-Ceramics fell the least (99.9% of the 1959 level). The glass products branch within this subsector actually had a slight increase in employment.²

No subsectors are given for the Food Industry but employment increased substantially in such branches as fish processing (130.5% in 1967 of 1959 level) and meat processing (107.2%).³ These results are correlated later with allocation trends in investment and actual increases in production.

Actual Investment Changes by Industrial Sectors

The flow of actual investment into various industrial

1 See Table IV-29. The sharp employment increase in Metallurgy is accounted for almost entirely by the iron and steel branch. In the Energy subsector electricity and gas are the major components. In Chemicals employment grew most rapidly in plastics (128.5% in 1967 of the 1959 level), synthetic fibres (118.6%), and rubber and asbestos goods (112.5%). In Mining employment declined most sharply in non-ferrous metal mines (5.7% of 1959 level in 1967) and in hard coal (74.3%). Employment in lignite coal and potash remained virtually constant -- see Table A-5, Appendix.

2 See Table A-7 Appendix.

3 See Table A-8 Appendix.

sectors is illustrated by the solid lines in Figures IV-5 (a) and IV-5 (b). For all sectors combined there was an absolute decline in investment in 1961, a gradual increase from 1962 - 63 and a sharper increase from 1964-65. The rate of increase first slowed down and then increased again between 1966-67, and this was followed by a marked decrease in the rate of growth in 1968. Despite the latter decrease the flow of new investment in 1968 was 160.3% of that in 1960, or an increase of 60.3%.

Once again the individual sectors present a varied picture with regard to investment allocation. Two sectors, Metals and Food, experienced greater than average increases throughout the period. Metals declined in 1962, but experienced a rapid growth thereafter, except in 1968. However, in 1968 the flow of new investment into the Metals sector was about 226.4% of 1960. The growth of investment for the Food Industry was even more spectacular, especially after 1963. In 1968 the flow of new investment into this sector amounted to 399.5% of 1960.

The two other sectors, Primary and Light Industries, had lower than average increases in investment during virtually the whole of the eight year period. Investment in Light Industry was increased dramatically in 1967 so that even though the rate of growth declined in 1968 the

Figure IV-5 a. INDUSTRIAL SECTOR, 1960 - 1968 (1960 = 100)

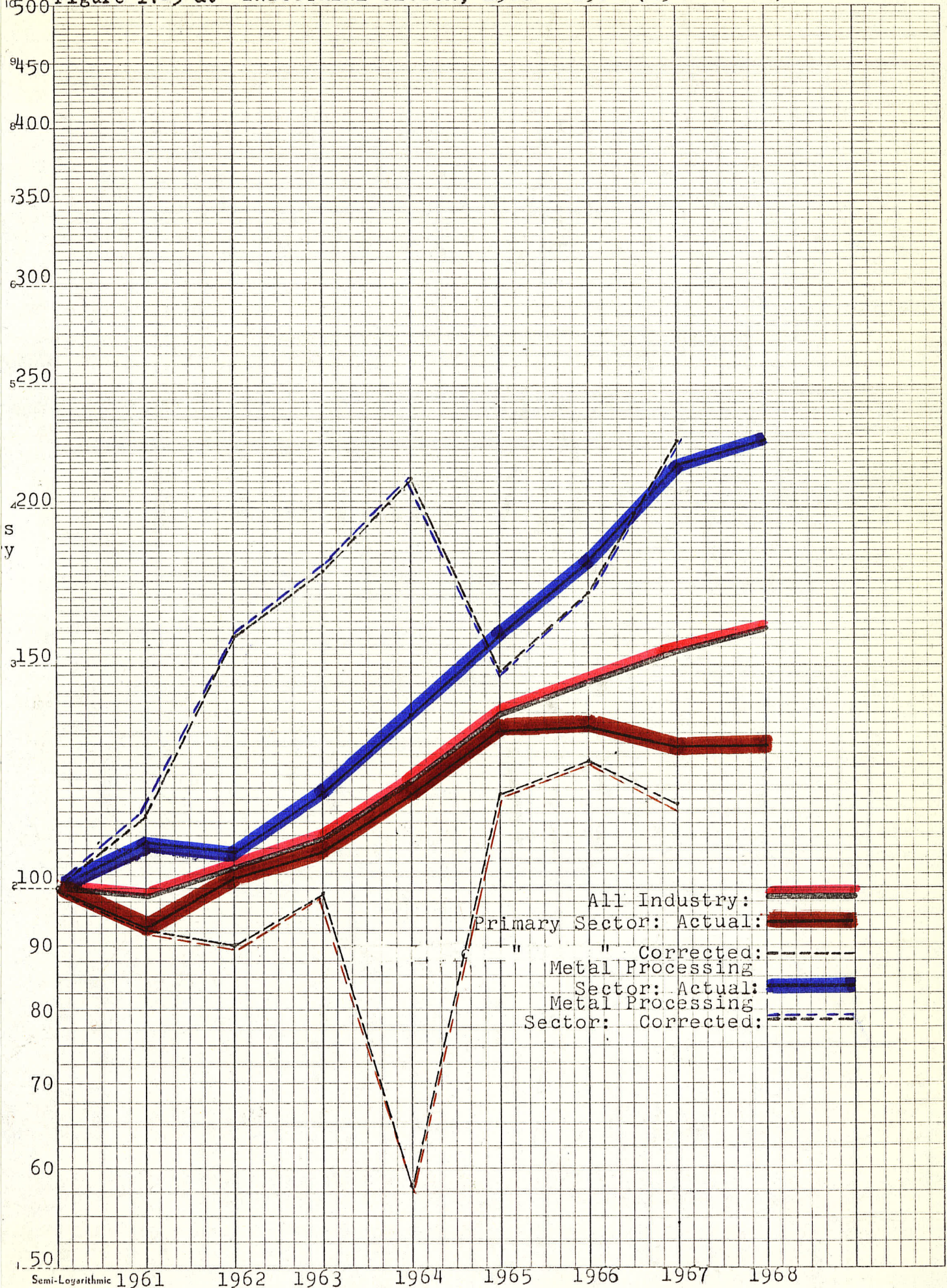
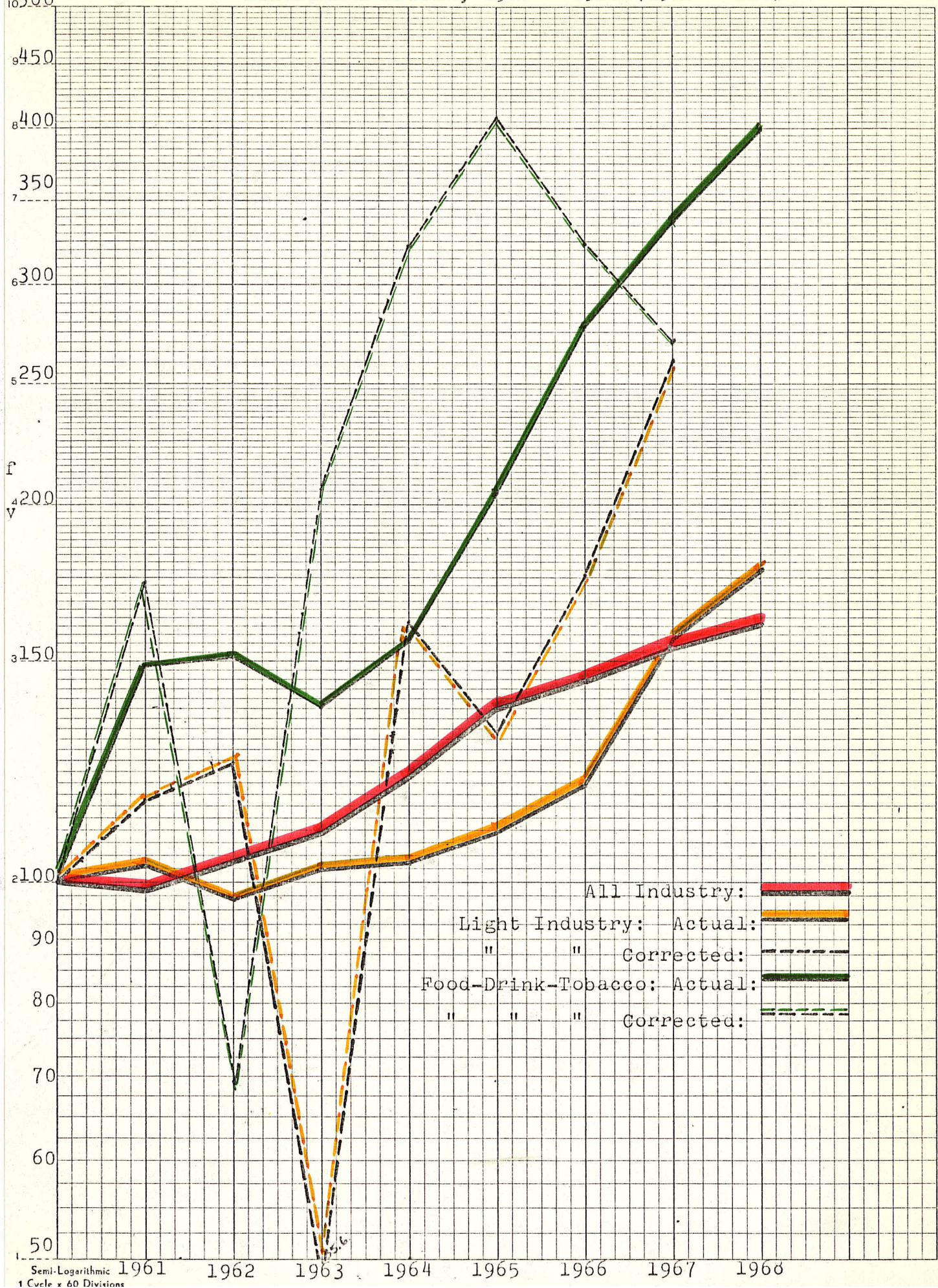


Figure IV-5 b. INDUSTRIAL SECTOR, 1960 - 1968 (1960 = 100)



level in that year was 177.3% of the 1960 level, higher than the industrial average. Investment in the Primary Industry increased fairly steadily between 1961 and 1966, but there was a decline in 1967 and a slowing down of growth in 1968. At the end of that year investment was 129.9% of the 1960 level.

"Corrected" Investment Changes by Industrial Sector

Table IV-2 indicates the "corrected" levels of investment for each industry sector, derived in the same way as corrected investment for economic sectors. In most cases, Light Industry excepted, the trend of actual investment is confirmed by the corrected trend, as can be seen in Figures IV-5 (a) and IV-5 (b). That is, the industries with a faster than average increase in investment would have had investment grow even more rapidly if their increase in productivity had been as low as the average rate for the industry, while the rate of investment growth for the more slowly growing Primary sector would have been slightly lower-if its decrease in productivity had been as small as the industrial average.¹ The picture is different for Light Industry. Capital productivity

¹ As is indicated in Table IV-38 capital productivity increased slightly in Metals, Food, and Light Industries, while it declined quite sharply in the Primary sector and less noticeably for all industry combined.

increased quite rapidly after 1964, reversing an earlier trend so that by 1967 its productivity increase was considerably higher than the average rate. By this later period more investment would have flowed into this sector if its rate of productivity had fallen to the average industrial level.

Table IV-6 summarizes a few of the interesting results of this analysis. If capital productivity in each sector had grown at the average rate, considerable capital investment (about 5,238 million Marks) could have been pulled out of the Primary Sector and placed into the other sectors in the period 1961 - 1967, while maintaining the production levels that were actually achieved.¹ The share of total investment allocated to the Primary sector would have decreased from 64.9% to 56.7%, while it would have increased from 20.9% to 25.0% for the Metal Processing sector and slightly less for the other sectors. In other words, much (above two-fifths) of the investment taken from the primary sector would have been allocated to metal processing.

If the Primary sector had increased its rate of change in capital productivity to the average level while the other

¹ Once again, there is a discrepancy of less than 2% between total actual and total corrected investment (Cf. p. 149, f.n. 1.)

TABLE IV-6

TOTAL ACTUAL AND CORRECTED GROSS INVESTMENT BY INDUSTRIAL

SECTOR - 1961 - 1967

	Primary Sector	Metal Process- ing Sector	Light Industry	Food-Drink Tobacco	Total Million Marks
a) Actual Gross Investment Million M.	36,817 (64.9% of Total)	11,871 (20.9% of Total)	5,116 (9.0% of Total)	2,949 (5.2% of Total)	56,753
b) Corrected Gross Investment Million M.	31,579 (56.7% of Total)	13,909 (25.0% of Total)	6,518 (11.7% of Total)	3,704 (6.6% of Total)	55,710
c) b as % of a	85.8	117.2	127.4	125.6	

sectors had maintained their actual rate, production goals could have been met with a saving of 5,238 million Marks in gross investment. Therefore, once again the impact of different rates of productivity change on absolute and relative investment allocation is substantial.

Intra-Sectoral Analysis of Actual Investment Changes

Investment figures are not available for branches but are given for subsectors from 1960-67 (Table IV-33) at the end of the chapter). Since the Food Industry is not divided into subsectors no further investment information is available for this sector.

In Metals the following subsectors received an above average infusion of investment between 1960-67:

1. Precision Tools-Optics (In 1967, 408.1% of 1960)
2. Castings and Forgings (In 1967, 251.6% of 1960)
3. Metalwares (In 1967, 234.9% of 1960)
4. Vehicles (In 1967, 226.0% of 1960)
5. Electro-Technical (In 1967, 221.1% of 1960)

In Light Industry the subsectors receiving greater than average increases in investment were:

1. Printing (In 1967, 277.7% of 1960)
2. Clothing (In 1967, 169.9% of 1960)
3. Woodworking-Cultural (In 1967, 166.4% of 1960)

Textiles and cellulose-paper were just below the average.

In Primary Industry the following subsectors received above average increases:

1. Metallurgy (In 1967, 224.0% of 1960)
2. Chemicals (In 1967, 173.8% of 1960)

Since this sector lagged behind the others in new investment it is important to note which of the subsectors lagged the most. These were:

1. Mining (In 1967, 98.0% of 1960)
2. Building Materials (In 1967, 101.6% of 1960)
3. Energy (In 1967, 104.8% of 1960)

A comparison between employment and investment trends in each industrial sector (comparing Figure IV-4 (a) with IV-5 (a) and IV-4 (b) with IV-5 (b) brings out some other interesting facts. The decline in employment for all industry can be contrasted with the substantial increase in investment, indicating once again the marked substitution of capital for labor in East

German industry. In the case of the Metal Industry, employment and investment increased together, although the former not as consistently or nearly as much as the latter. Both labor and capital productivity increases in this industry were above average, the increase in capital leading evidently to a very marked increase in labor productivity (indicated by the difference between the "actual" and "corrected" lines in Figure IV-4 (a)).

In the Primary Industry employment and investment both increased between 1962 and 1966, after which both began to fall. Both labor and capital productivity grew at below average rates, indicating that both factors were overcommitted to this particular sector.

The Light and Food Industries followed another pattern. In the former investment increased, especially after 1964, while employment declined, indicating a radical substitution of capital for labor. It wasn't, however, until the stepped-up capital infusions of the post 1964 period that labor productivity began to increase appreciably, as indicated by the convergence of the solid and broken lines in Figure IV-4(b). In the Food Industry investment was increased at a remarkable rate after 1963, which follows by only a year a fairly rapid downturn in employment. Here,

however, the infusion of investment did not lead to an increase in the rate of growth of labor productivity so that even more employment might have been pulled out of that sector.

Analysis of Changes in Gross Production by Industrial Sector, Subsector and Branch (Data: Tables IV-26 and IV-27 at end of chapter, and Tables A-1 to A-4 in Appendix.)

Production trends in industry for 1959 - 1968 are illustrated in Figure IV-6 where trend lines are drawn on a semi-logarithmic scale. The figure indicates, first of all, that gross industrial production for all sectors combined, represented by the red line, grew at a very steady rate during the whole interval (at an average rate of 5.9% per annum). A slight slowing down of the rate of growth was observable in 1964 and 1968. At the end of 1968 gross production was 164.7% of the 1959 level.

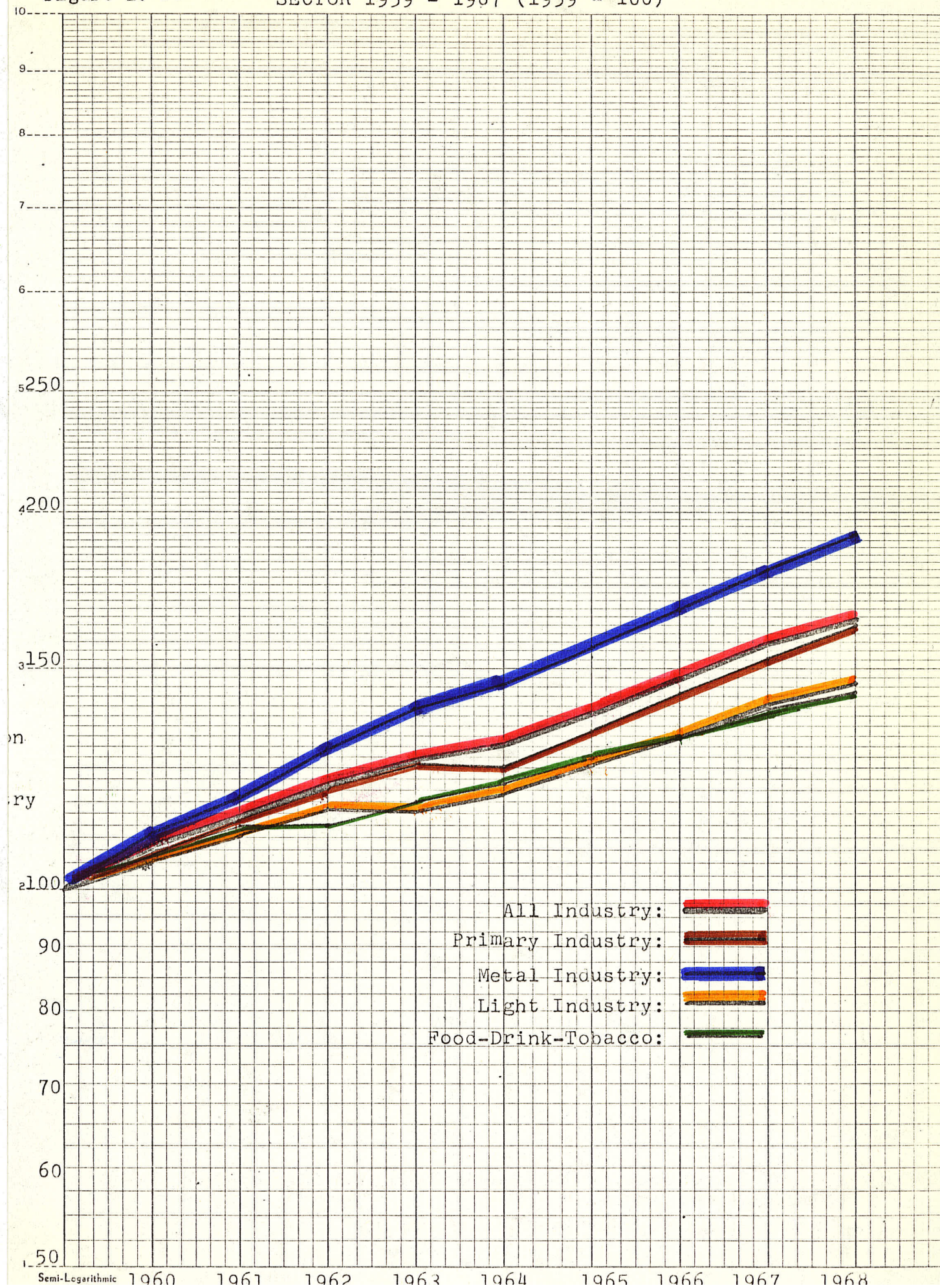
Only one sector, Metals, grew faster than this, at an average annual rate of growth of 7.6%. Growth here was also very steady, with a slight slowdown in 1964. At the end of 1968 gross production for this sector was 192.6% of the 1959 level.

The other sectors did not grow as quickly as the average, but their growth rates were not far behind.

INDEX OF GROSS PRODUCTION BY INDUSTRIAL SECTOR 1959 - 1967 (1959 = 100)

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Figure IV-6.



Primary Industry, in second place, grew steadily at an average annual rate of growth of 5.5%, except for an absolute downturn in 1964.

Light Industry and Food grew at almost equal rates. The former had an average annual rate of growth of 4.4% and the latter 4.3%. Light Industry had fairly steady growth, except for a slight absolute downturn in 1963 and a low rate of growth in 1964. Food production stagnated in 1962 but enjoyed steady growth both before and after.

In terms of growth in production the sectors can therefore be ranked as follows:

1. Metals (In 1968, 192.6% of 1959)
2. Primary (In 1968, 163.2% of 1959)
3. Light (In 1968, 145.9% of 1959)
4. Food (In 1968, 144.4% of 1959)

Intra-Sectoral Analysis of Production Changes

This analysis follows the rank order above and attempts to throw more light on production changes within the different sectors. Particular attention is given to those subsectors and branches which seem to account for the above (or below) average growth of their respective sectors.

In the Metal Industry several subsectors increased

production more rapidly than the sector as a whole. The leading subsectors were:

1. Electro-Technical (In 1967, 209.1% of 1959)
2. Precision Tools - Optics (In 1967, 205.8% of 1959)
3. Metalwares (In 1967, 194.2% of 1959)
4. General Machinery (In 1967, 194.2% of 1959)

Within these leading subsectors several branches grew more rapidly than the subsector as a whole. In the Electro-Technical field it was a wide range of electrical products, some of which are listed under Electronic and Electrical Equipment in Table A-2. In Precision Tools-Optics the leading branches were Measuring Instruments and Watches and Office Machinery. In Metalwares no branches are listed, while in General Machinery the leading branches were those which produced machines for the Metal and Food industries.

In the Primary Industry production grew faster than the average in the following subsectors:

1. Chemicals (In 1967, 180% of 1959)
2. Energy (In 1967, 172.8% of 1959)
3. Building Materials (In 1967, 163.4% of 1959)

There was a slight absolute decline in mining

production. However, it should be noted that the sharpest declines in mining occurred in 1964 and there was an increase in production between 1964 and 1967.

The leading branches in the three fastest growing subsectors above were: In Chemicals:

1. Plastics (293% of 1959)
2. Pharmaceuticals (221.5% of 1959)
3. Synthetic Fibres (212% of 1959)
4. Rubber and Asbestos (192.9% of 1959)

In Energy, electricity and gas were the only important branches and in building materials only concrete products are listed separately.

In Light Industry the following subsectors experienced greater than average growth:

1. Glass-Ceramics (163.6% of 1959)
2. Woodworking-Cultural (162.7% of 1959)
3. Leather-Fur Products (142.3% of 1959)
4. Cellulose-Paper (140.6% of 1959) - average growth.

The leading branches were:

In Glass-Ceramics: Ceramic products.

In Woodworking-Cultural: Toys, Recreation Equipment and Furniture and Upholstery.

In Leather-Fur Products: Simulated Leather Goods and Fur and Leather Clothing.

There are no subsectors for the Food Industry.

The leading branches in this industry in terms of production growth were:

1. Fruit and Vegetable Processing (170.7% of 1959).
2. Wines and Spirits (170.6% of 1959)
3. Fish Processing (154.2% of 1959)
4. Meat Processing (140.6% of 1959)

The tables on the following pages summarize the analysis up to this point. Table IV-7 ranks the various industrial sectors and subsectors by employment, investment, and gross production. It tells us something about the use of labor and capital in the expansion of industrial production.

I. As noted previously, the Metal Processing Industry expanded production most quickly during this period. It enjoyed the greatest increase in its labor force, and the second highest increase in annual investment.

As the bottom of that same table indicates, several subsectors contributed to this record with very high rates

TABLE IV-7

RANK OF INDUSTRIAL SECTORS AND SUBSECTORS BY EMPLOYMENT,
INVESTMENT, AND GROSS PRODUCTION. (WITH PERCENTAGE OF BASE
YEAR IN BRACKETS)

Rank	Actual Employment 1959-1967	"Corrected" Employment 1959-1967	Actual Investment 1960-1967	"Corrected" Investment 1960-1967	Gross Product 1959-1967
Leading Sectors					
1	Metals (106.8)	Metals (114.0)	Food (337.1)	Food (270.0)	Metals (180.0)
2	Primary (103.8)	Primary (96.8)	Metals (216.0)	Light (261.8)	Primary (152.8)
3	Food (97.3)	Light (89.1)	Light (155.8)	Metals (225.6)	Light (140.6)
4	Light (87.5)	Food (88.1)	Primary (129.5)	Primary (116.9)	Food (139.0)
FIVE LEADING SUBSECTORS IN EACH SECTOR					
Metals					
1	General Machinery (121.6)		Precision Tools-Optics (408.1)		Electro-Technical (209.1)
2	Precision Tools-Optics (116.6)		Castings and Forgings (251.6)		Precision Tools-Optics (205.8)
3	Electro-Technical (116.4)		Metalwares (234.9)		Metalwares (194.2)
4	Heavy Machinery (109.4)		Vehicles (226.0)		General Machinery (194.2)
5	Metalwares (105.0)		Electro-Technical (221.1)		Heavy Machinery (171.0)
Light Industry					
1	Glass (99.9)		Printing (277.7)		Glass (163.6)
2	Ceramics (93.4)		Clothing (169.9)		Ceramics (162.7)
3	Leather-Fur (92.6)		Woodworking (166.4)		Woodworking (142.3)
4	Cellulose-Paper (91.2)		Textiles (153.6)		Leather-Fur (140.6)
5	Printing (88.1)		Cellulose-Paper (152.5)		Cellulose-Paper (133.9)

TABLE IV-7 Continued

RANK OF INDUSTRIAL SECTORS AND SUBSECTORS BY EMPLOYMENT, INVESTMENT,
AND GROSS PRODUCTION. (WITH PERCENTAGE OF BASE YEAR IN BRACKETS)

RANK	Actual Employment 1959-1967	"Corrected" Employment 1959-1967	Actual Investment 1960-1967	"Corrected" Investment 1960-1967	Gross Product 1959-1967
Primary Industry					
1	Metallurgy (132.7)		Metallurgy (224.0)		Chemicals (180.0)
2	Energy (111.6)		Chemicals (173.8)		Energy (172.8)
3	Chemicals (107.4)		Energy (104.8)		Building Materials (163.4)
4	Building (93.9)		Building Materials (101.6)		Metallurgy (114.9)
5	Materials (83.0)		Mining (98.0)		Mining (99.9)

TABLE IV-8
 RANK OF INDUSTRIAL BRANCHES IN METALS INDUSTRY
 BY EMPLOYMENT AND GROSS PRODUCTION, 1959-1967
 (PERCENTAGE IN 1967 OF BASE YEAR IN BRACKETS)

Leading Subsectors	Rank	Actual Employment 1959-1967	Gross Production 1959-1967
Three Leading Branches in Leading Subsectors of Metals Industry ¹			
General Machinery	1	Machines for Metals (294.8)	Machines for Metals (378.2)
	2	Machines for Food (128.8)	Machines for Food (249.2)
	3	Machines for Primary (124.3)	Machines for Primary (184.7)
Precision Tools - Optics	1	Measuring Instruments and Watches (128.1)	Measuring Instruments and Watches (239.6)
	2	Office Machines (112.8)	Office Machines (215.5)
	3	Optical Instruments (103.7)	Optical Instruments (166.1)
Electro-Technical	1	Electrical Products (119.7)	Electrical Products (217.7)
	2	Cables and Electrical Materials (115.4)	Electrical Machines, Switches, Transformers (177.8)
	3	Electrical Machines, Switches, Transformers (103.9)	Cables and Electrical Materials (172.2)
Heavy Machinery	1	Machine Tools (114.0)	Machine Tools (173.7)
	2	Power Machines (109.7)	Transport Equipment (168.8)
	3	Transport Equipment (100.5)	Power Machines (146.2)

¹ No branches are listed for: Metalwares, and Castings and Forgings.

TABLE IV-8 Continued

RANK OF INDUSTRIAL BRANCHES IN METALS INDUSTRY

BY EMPLOYMENT AND GROSS PRODUCTION, 1959-1967

(PERCENTAGE IN 1967 OF BASE YEAR IN BRACKETS)

Leading Subsectors	Rank	Actual Employment 1959-1967	Gross Production 1959-1967
Three Leading Branches in Leading Subsectors of Metals Industry			
Vehicles	1	Tractors (123.6)	Trucks (210.0)
	2	Trucks (123.6)	Tractors (206.4)
	3	Automobiles (98.3)	Automobiles (167.7)
Other Rapidly Growing Branches in Metals Industry			
		Machines for Agriculture (118.6)	Steel Structures (142.8)
		Machines for Construction (117.2)	Machines for Agriculture (176.9)
		Machines for Light Industry (103.5)	Machines for Con-

TABLE IV-9
RANK OF INDUSTRIAL BRANCHES IN PRIMARY AND FOOD
INDUSTRY BY EMPLOYMENT AND GROSS PRODUCTION,
1959 - 1967 (PERCENTAGE in 1967 of BASE YEAR
IN BRACKETS)

Subsectors	Rank	Actual Employment 1959-1967	Gross Production 1959-1967
Leading Branches in Subsectors of Primary Industry			
Metallurgy (only one)		Iron and Steel (102.1)	Iron and Steel (91.9)
Energy (only one)		Electricity and Gas (112.2)	Electricity and Gas (173.3)
Chemicals	1	Plastics (128.5)	Plastics (293.0)
	2	Synthetic Fibres (118.6)	Pharmaceuticals (221.5)
	3	Rubber and Asbestos Goods (112.5)	Synthetic Fibres (212.0)
	4	Mineral Oil and Tar (105.3)	Rubber and Asbestos Goods (192.9)
Building Materials (only one)		Concrete Products (1964-1967) (97.8)	Concrete Products (1964-1967) (115.7)
Mining	1	Potash and Salt Mines (101.5)	Potash and Salt Mines (137.7)
	2	Lignite Coal (100.5)	Lignite Coal, Coke, etc. (91.8)
	3	Hard Coal and Coke (74.3)	Hard Coal and Coke (76.5)

TABLE IV-9 Continued

RANK OF INDUSTRIAL BRANCHES IN PRIMARY AND FOOD
INDUSTRY BY EMPLOYMENT AND GROSS PRODUCTION,
1959 - 1967 (PERCENTAGE IN 1967 OF BASE YEAR
IN BRACKETS)

Subsectors	Rank	Actual Employment 1959-1967	Gross Production 1959-1967
Leading Branches in Food Industry			
No Subsectors	1	Fishing, Fish Processing (130.5)	Fruit and Vegetable Processors (170.7)
	2	Meat Processing (107.2)	Wines and Spirits (170.6)
	3	Fruit and Vegetable Processing (102.1) (all others below 100% of 1959)	Fishing and Fish Pro- cessing (154.2) Meat Processing (140.6)

TABLE IV-10

RANK OF INDUSTRIAL BRANCHES IN LIGHT INDUSTRY BY
EMPLOYMENT AND GROSS PRODUCTION, 1959 - 1967
(PERCENTAGE IN 1967 of BASE YEAR IN BRACKETS)

Leading Subsectors	Rank	Actual Employment (1959 - 1967)	Gross Production (1959 - 1967)
Leading Branches in Leading Subsectors of Light Industry			
Glass-Ceramics	1	Glass and Glass Products (100.9)	Ceramic and Ceramic Products (116.5)
	2	Ceramic and Ceramic Products (98.8)	Glass and Glass Products (161.3)
Leather-Fur Products	1	Fur and Leather Clothing (99.2)	Simulated Leather Goods (179.8)
	2	Shoes (except rubber wear) (96.4)	Fur and Leather Clothing (157.5)
	3	Leather Goods (92.7)	Shoes (except rubber wear) (143.1)
	4	Simulated Leather Goods (88.6)	Leather Goods (113.3)
Woodworking-Cultural	1	Toys, Sports Equipment, etc. (114.6)	Toys, Sports Equipment, etc. (217.1)
	2	Musical Instruments (100.5)	Furniture and Upholstery (172.4)
	3	Furniture and Upholstery (88.3)	Musical Instruments (151.2)
	4	Wooden Parts for Construction (79.0)	Wooden Parts for Construction (135.7)
Cellulose-Paper	1	Cellulose and paper and pasteboard (95.6)	Cellulose and Paper Products (152.8)
	2	Cellulose and Paper Products (87.7)	Bookbinding (146.8)
	3	Bookbinding (85.9)	Cellulose, Paper and Pasteboard (129.7)

TABLE IV-10 Continued

RANK OF INDUSTRIAL BRANCHES IN LIGHT INDUSTRY BY

EMPLOYMENT AND GROSS PRODUCTION, 1959 - 1967

(PERCENTAGE in 1967 of BASE YEAR IN BRACKETS)

Leading Subsectors	Rank	Actual Employment (1959-1967)	Gross Production (1959-1967)
Leading Branches in Leading Subsectors of Light Industry			
Printing (only one)		Printeries (87.8)	Printeries (134.6)
Textiles	1	Weaving (82.5)	Knitting (157.1)
	2	Knitting (81.8)	Weaving (132.6)
	3	Spun and Yarn Goods (78.7)	Spun and Yarn Goods (127.6)
Clothing	1	Underwear (105.9)	Underwear (145.0)
	2	Outerwear (87.7)	Outerwear (133.3)
	3	Work Clothes (80.9)	Work Clothes (123.0)

of growth. It is interesting to note that the leader, Electro-Technical, had only the third highest increase in labor within that sector, and the fifth highest increase in investment. Table IV-8 reveals that very substantial increases in the production of certain electrical appliances, machines, switches, transformers, and cables account for this efficient growth. The second fastest growing subsector, Precision Tools-Optics had the second highest increase in labor during this period, and by far the largest increase in annual investment. The latter increased by 308.1% over 1960 while production increased by only 105.8%. The fastest growing branch in this subsector was Measuring Instruments and Watches, but the two other branches, Office Machines and Optical Instruments (Table A-2) also had very substantial increases.

No further detail is available for the Metalwares subsector. The substantial growth of the General Machinery subsector was accomplished with relatively large increases in labor and relatively small increases in investment. It is not surprising that the leading branch in this subsector was the one producing machines for the fastest growing

sector, Metals. The large increase in production of machinery for the Food Industry (249.2% of the 1959 level) illuminates the unusually large increase in the rate of investment in that industry.

The Heavy Machinery and Vehicles subsectors had several branches which grew at a strong pace, especially machine tools, transport equipment, power machines, trucks, tractors, and automobiles. These should all be considered "leading" edges of industrial growth and most of them were supported, as Table IV-8, indicates, with above average increases in labor. Unfortunately investment figures are not available by branches.

II. Turning to Light Industry we discover that the growth of the leading subsector, Glass-Ceramics, was accomplished with the smallest decrease in the labor force and with a relatively small increase in investment. Production in Woodworking increased almost as quickly, with a substantial increase in investment. Leather-Fur production, like Glass-Ceramics, had a relatively high retention rate in employment and a relatively small increase in investment. The growth of Cellulose-Paper was more in line with the changes in both labor and investment within that subsector. In Textiles production increased quite rapidly because of a relatively heavy infusion of new investment, and despite a

sharp fall in employment. It is interesting to note that output in Printing grew very slowly (it was not in the five leading subsectors), despite an increase of 177.7% in investment, higher than that experienced by any other subsector. Like Precision-Tools and Optics in the Metal Processing industry, investment in this field did not prove very effective in promoting production.

Table IV-10 indicates the growth of particular branches and products within Light Industry. The fastest rate of growth was experienced in such consumer items as simulated leather goods, toys and sporting equipment, musical instruments and furniture and upholstery. Labor productivity increased dramatically in the production of simulated leather goods, so that the sharp increase in production could be achieved with a substantial fall in employment. On the other hand, the growth of toys, sporting equipment and musical instruments required a relatively high rate of growth in the labor force.

III. In Primary Industry the leading subsector was Chemicals, which increased production by 80% in the eight year interval. It did this with the highest increase in the labor force (7.4%) and the second highest increase in investment (73.8%). Table A-1 indicates that the achievements in Chemicals were the result primarily of extremely rapid growth in such new

products as plastics and synthetic fibres, and in the old established industry of East Germany, pharmaceuticals. Increases in the latter were accomplished with a substantial decline in the labor force, while the other leading branches required above average increases in employment.

In contrast to the effectiveness of both labor and capital in promoting growth in chemical production, extremely high increases in both factors led to a surprisingly slow growth in Metallurgical production. This subsector was only fourth in production growth (14.9%) and first in both labor increases (32.7%) and investment growth (124.0%). The production of certain products within this subsector increased, as can be seen from Table A-2 but the absolute decline in production in the major branch, Iron and Steel (Table IV-9), is enough to account for the relatively poor showing of this subsector.

The Energy subsector, with electricity and gas as major components, fared much better. Production grew much faster than both labor and investment. The same can be said for the Building Materials subsector, whose main branch, concrete products, increased production by 15.7% in a four year period while employment was declining.

The Mining subsector experienced an absolute decline

in production, accompanied by a slight decrease in investment and a sharp absolute decrease in labor (11%). Within this subsector one branch, potash and salt mines, actually had an increase in both labor and production. The decline for the subsector as a whole is accounted for by the apparent closing down of iron ore mines and the sharp decline in production of hard coal and coke. Lignite coal, a vital source of energy and fuel for the postwar East German region, also declined in production despite a small absolute increase in employment.

IV. In the Foods sector a very large increase in investment resulted in a relatively small growth in production (256.5% vs. 39%). The fact that "corrected" investment would have been even higher for this sector than actual investment (over the whole period) indicates that this industry was very productive in relation to the growth of capital assets (from which the productivity figures underlying the "corrected" estimates are derived), but relatively very unproductive with regard to new investment.¹

¹ New investment in Foods increased almost ten times as quickly as capital assets between 1960 and 1967 (229.7% vs 25.1% - see S.J.D.D.R. 1969, pp. 47 and 49) while in other sectors the ratio was almost even (for all industry it was 57.2% vs. 51.5%). It has been suggested that this was due to the relatively small share of total investment going to Foods (see the following analysis), with a consequent deterioration of capital assets and a poor utilization of new investment. Cf. Deutsches Institut fuer Wirtschaftsforschung, "Die Brutto-Anlageinvestitionen der mitteldeutschen Industrie 1955 bis 1966", Wochenbericht, Nr. 23, June 9, 1967.

Table IV-9 indicates that the greatest increases in production occurred in the fruit and vegetable processing industry, and in wines and spirits. The first had only a small increase in labor, while employment in wines and spirits actually dropped from 1959 to 1967. Fish and meat processing also grew rapidly, with above average increases in the labor force.

SUMMARY OF PRECEDING:

1. METALS: Production increased much more rapidly than labor and almost as rapidly as investment, so that it made effective use of both. It was characterized by substantial growth in all subsectors. Those making most effective use of labor and capital investment were Electro-Technical and Metalwares. Less effective were the subsectors Precision Tools-Optics, Castings and Forgings, and Vehicles. Leading branches were:

1. Machines for the Metals Industry.
2. Machines for the Food Industry.
3. Measuring Instruments and Watches.
4. Electrical Products (e.g. Refrigerators).
5. Office Machines.
6. Trucks.
7. Tractors.

All of these branches increased production by more than 100% during the period 1959-1967.

II. PRIMARY INDUSTRY: Production grew more rapidly than either labor or investment, but "corrected" figures indicate that even faster growth was possible. The growth of the subsectors was very mixed. One, Mining, declined absolutely, while Chemicals grew very rapidly. The latter used increases in investment and labor very effectively, relative to the other sectors, while Metallurgy did not. Energy and Building Materials, along with Chemicals, accounted for a major part of the growth in the Primary sector, each making effective use of increases in the factors of production. The leading branches were:

1. Plastics
2. Pharmaceuticals
3. Synthetic Fibres
4. Rubber and Asbestos Goods
5. Electricity and Gas.

All of these branches grew by more than 70% during the period.

III. LIGHT INDUSTRY: This industry was third in most of the growth indexes. Three of the leading subsectors,

Glass-Ceramics, Leather-Fur, and Textiles made effective use of relatively small increases in investment. Just the opposite was the case for Printing. Woodworking and Cellulose-Paper increased production at a rate related to their increases in the productive factors. The leading branches were:

1. Toys, Sports Equipment and Ornaments.
2. Simulated Leather Goods.
3. Furniture and Upholstery.
4. Ceramic and Ceramic Products.
5. Glass and Glass Products.

All of these branches increased production by more than 60%.

IV. FOOD: This sector used labor and capital investment rather poorly, especially investment. The leading branches were:

1. Fruit and Vegetable Processing.
2. Wines and Spirits.
3. Fishing and Fish Processing.
4. Meat Processing.

All of these branches increased production by more than 40%.

CHANGING IMPORTANCE OF INDUSTRIAL SECTORS

The impact of the growth just observed on the relative importance of each industrial sector and sub-sector can be observed in Table IV-11. The results can be summarized as follows for Sectors:

I. METALS:

Share of Total Employment Increased: 36.4% to 41.1%.

Share of Total Investment Increased: 17.7% to 25.4%.

Share of Total Production Increased: 33.1% to 38.4%.

Despite the increases in all areas, the share of total investment in 1968 (25.4%) was still relatively small in comparison with the share of production (38.4%). The gap, however, was definitely diminishing.

II. PRIMARY INDUSTRY:

Share of Total Employment was Stable: 25.8% & 25.7%.

Share of Total Investment Decreased: 69.1% to 56.2%.

Share of Total Production Decreased: 29.4% to 28.9%.

Despite decreases in both investment and production this sector still accounts for a major part of both for all industry. It still accounts for more than half of all investment, and less than one third of all production.

TABLE IV-11
RELATIVE IMPORTANCE OF INDUSTRIAL SECTORS AND SUBSECTORS BY PERCENT
OF TOTAL EMPLOYMENT, INVESTMENT, AND GROSS PRODUCTION

Industry: Sectors and Subsectors	Employment			Investments			Gross Production		
	1959	1967	1968	1969	1967	1968	1959	1967	1968
I. Primary Industries	25.8	26.9	25.7	69.1	59.3	56.2	29.4	28.6	28.9
1. Energy	2.2	2.5		15.9	11.6		1.6	1.7	
2. Mining	7.5	6.7		24.1	16.1		4.2	2.7	
3. Metallurgy	3.1	4.2	4.3	5.9	8.3	7.5	6.4	4.7	4.7
4. Chemicals	9.6	10.4	11.6	17.5	19.8	21.9	15.2	17.4	17.8
5. Building Materials	3.4	3.2	3.1	5.6	3.6	4.4	2.0	2.1	2.1
II. Metal Processing Industries	36.4	39.1	41.1	17.7	23.9	25.4	33.1	38.0	38.4
1. Heavy Machinery	6.3	6.9		3.5	4.2		5.7	6.3	
2. General Machinery	6.2	7.6		4.2	5.2		5.4	6.6	
3. Vehicles	6.7	5.4		2.9	4.2		7.0	6.5	
4. Shipbuilding	1.4	1.4		0.8	0.6		1.9	1.9	
5. Castings and Forgings	1.7	1.7		1.1	1.7		1.2	1.0	
6. Metalwares	3.2	3.3		1.0	1.5		2.4	3.0	
7. Electro-Technical	7.5	8.8		3.4	4.5		7.5	10.0	
8. Precision Tools - Optics	3.4	4.0		0.8	2.0		2.0	2.7	

III. LIGHT INDUSTRY:

Share of Total Employment Decreased: 30.3% to 25.7%.

Share of Total Investment Increased: 9.9% to 10.9%.

Share of Total Production Decreased: 23.0% to 20.1%.

Despite increases in the share of investment and decreases in the share of production, this sector, like Metals, still has a relatively small share of the former in relation to the latter. In 1968 it accounted for 20.1% of all industrial production but received less than 11% of all new investment. At the same time it accounts for an unusually high share of the labor force: 25.7%, although this share has been declining.

IV. FOOD:

Share of total Employment was Stable at 7.5%.

Share of Total Investment Increased: 3.2% to 7.5%.

Share of Total Production Decreased: 14.5% to 12.6%.

This sector still has a relatively small share of both labor and capital, though the share of the former has stabilized while the investment share has been increasing and the production share has been decreasing.

CHANGING IMPORTANCE OF INDUSTRIAL SUBSECTORS:

The decline and growth in the share of total production by subsectors can be summarized as follows:

In the Metal Processing Industry:

Declining Subsectors: Mining, Metallurgy. The latter declined despite an increasing share of employment and investment.

Growing Subsectors: Chemicals, with increasing share of investment and employment.

In the Metal Processing Industry:

Declining Subsectors: Vehicles, Castings and Forgings (though both increased their share of investment).

Growing Subsectors: Heavy Machinery, General Machinery, Metalwares, Electro-Technical and Precision Tools-Optics (all increased their share of both labor and investment).

In Light Industry:

Declining Subsectors: Textiles, Clothing, Leather-
Fur, Cellulose-Paper, and
Printing. (The first three
had fairly stable share of
investment and decreasing share
of labor. The last two in-
creased share of investment and
decreased share of labor.

Stable Subsectors: Glass-Ceramics and Woodworking-
Cultural. The former had de-
creasing share of investment
and stable share of labor. The
latter increased share of invest-
ment and decreased the share of
labor.

TABLE IV-12

NET NATIONAL PRODUCT BY ECONOMIC SECTOR - IN
COMPARABLE PRICES¹

Year	Net Product of all Economic Sectors	Net Product of:				Million Marks
		Industry and Pro- ductive Handi- crafts ²	Construc- tion	Agriculture ³ Communications	Domestic Trade Other Producing Sectors	
1960	73,071	41,244	5,143	11,991	9,516	1,152
1963	79,069	47,288	5,301	11,106	9,768	1,268
1964	83,583	49,749	5,989	11,422	10,379	1,324
1965	87,710	51,930	6,449	12,147	10,975	1,453
1966	92,088	54,522	6,868	12,733	11,547	1,492
1967 ⁴	97,201	57,557	7,373	13,525	12,076	1,629
1968 ⁴	102,245	61,034	8,023	13,660	12,524	1,747

1 Figures taken from S.J.D.D.R., 1969, p. 40.

2 Does not include building handicrafts.

3 Includes forestry.

4 Tentative figures.

TABLE IV-13
PER CENT OF TOTAL NET PRODUCT BY SECTOR

Year	Net Product of all Economic Sector	Net Product of:					
		Industry and Productive Handicrafts	Construction	Agriculture	Transportation, Communications	Domestic Trade Other Producing Sectors	
1960	100	56.4	7.0	16.4	5.5	13.0	1.6
1963	100	59.8	6.7	14.0	5.5	12.4	1.6
1964	100	59.5	7.2	13.7	5.6	12.4	1.6
1965	100	59.2	7.4	13.8	5.4	12.5	1.7
1966	100	59.2	7.5	13.8	5.3	12.5	1.6
1967	100	59.2	7.6	13.9	5.2	12.4	1.7
1968	100	59.7	7.8	13.4	5.1	12.2	1.7

TABLE IV-14

INDEX OF NET PRODUCT GROWTH BY SECTOR, 1960 = 100

Year	Net Product of all Economic Sector	Net Product of:				
		Industry and Productive Handicrafts	Construction	Agriculture	Transportation, Communications	Domestic Trade Other Producing Sectors
1960	100	100	100	100	100	100
1963	108	115	103	93	108	110
1964	114	121	116	95	117	115
1965	120	126	125	101	118	126
1966	126	132	134	106	122	130
1967	133	140	143	113	125	141
1968	140	148	156	114	131	152

TABLE IV-16
PER CENT OF EMPLOYMENT BY SECTOR

Year	All Sectors	Industry and Productive Handicrafts	Construction	Agriculture	Transportation, Communication	Trade	Misc. Prod.	Service Sector
1960	100	41.4	6.1	17.0	7.2	11.6	1.2	15.5
1963	100	41.2	6.0	16.4	7.4	11.3	1.5	16.3
1964	100	41.6	6.0	15.7	7.3	11.4	1.7	16.3
1965	100	41.6	6.1	15.4	7.2	11.5	1.8	16.5
1966	100	41.7	6.1	14.9	7.2	11.5	1.9	16.7
1967	100	41.7	6.3	14.6	7.1	11.5	2.2	16.7
1968	100	41.8	6.7	13.8	7.0	11.4	2.3	16.9
INDEX OF EMPLOYMENT GROWTH BY SECTOR 1960 = 100								
1960	100	100	100	100	100	100	100	100
1963	99.5	98.9	97.4	96.2	101.8	96.7	116.2	105.0
1964	99.6	100.2	97.5	92.2	101.1	98.0	138.2	104.5
1965	99.9	100.2	100.0	90.4	99.8	99.4	141.8	106.2
1966	100.0	100.6	99.6	88.0	99.4	99.3	156.6	107.9
1967	100.4	101.1	102.7	86.2	98.4	99.3	180.0	108.2
1968	100.3	101.4	109.9	81.9	97.6	98.4	189.2	109.5

TABLE IV-17
 INDEX OF EMPLOYMENT BY SECTOR WITH ASSUMED AVERAGE GROWTH IN PRODUCTIVITY
 IN EACH SECTOR
 (ABSOLUTE NO.'S [IN 1000] IN BRACKETS)

Year	All Sectors	Industry and Pro- ductive Handi- crafts	Construction	Agriculture	Transportation, Communication	Trade	Other Producing Sectors
1960	100	100 (3,182)	100 (470)	100 (1,304)	100 (554)	100 (890)	
1963	99.5	105.4 (3,353)	98.8 (445)	85.1 (1,110)	99.1 (549)	94.4 (840)	
1964	99.6	105.0 (3,343)	101.5 (477)	82.9 (1,082)	102.2 (566)	95.0 (846)	
1965	99.9	104.7 (3,333)	104.4 (490)	84.3 (1,099)	98.3 (544)	96.0 (854)	
1966	100	104.8 (3,336)	105.9 (498)	84.2 (1,098)	97.1 (537)	96.3 (857)	
1967	100.4	105.4 (3,351)	108.2 (509)	85.1 (1,110)	94.5 (523)	95.8 (853)	
1968	100.3	106.2 (3,378)	111.9 (526)	81.7 (1,065)	93.7 (519)	94.4 (840)	

TABLE IV-18

LABOR PRODUCTIVITY BY SECTOR¹

Year	All Sectors	Industry and Productive Handicrafts	Construction	Agriculture	Transportation, Communication	Trade	Other Producing Sectors
1960	9,508	12,962	10,947	9,198	7,271	10,690	12,050
1963	10,341	15,024	11,582	8,852	7,697	11,352	11,413
1964	10,915	15,598	13,076	9,505	8,433	11,901	10,023
1965	11,427	16,282	13,736	10,306	8,607	12,400	10,715
1966	11,985	17,035	14,678	11,100	8,948	13,068	9,967
1967	12,601	17,884	15,278	12,033	9,250	13,664	9,482
1968 ⁴	13,258	18,912	15,545	12,796	9,730	14,297	9,657

Marks Net Product Per Employed Person

1 Calculated as Net Product ÷ Employment.

2 Does not include building handicrafts.

3 Includes Forestry.

4 Based on tentative Net Product Figures.

TABLE IV-19

INDEX OF LABOR PRODUCTIVITY, 1960 = 100

Year	All Sectors	Industry and Pro- ductive Handi- crafts	Construction	Agriculture	Transportation, Communication	Trade	Other Producing Sectors
1960	100	100	100	100	100	100	100
1963	108.8	115.9	105.8	96.2	105.9	106.2	94.7
1964	114.8	120.3	119.5	103.3	116.0	111.3	83.2
1965	120.2	125.6	125.5	112.1	118.4	116.0	88.9
1966	126.1	131.4	134.1	120.7	123.1	122.3	82.7
1967	132.5	138.0	139.6	130.8	127.2	127.8	78.7
1968	139.4	145.9	142.0	139.1	133.8	133.7	80.1

TABLE IV-20
INVESTMENT BY ECONOMIC SECTOR¹

Year	All Sectors	Industry	Construction	Agri- culture ²	Transportation, Communication	Trade	Misc. Prod.	Service Sector
Million Marks								
1960	16,096	7,646	403	1,899	1,626	402	64	4,056
1963	17,091	8,460	239	2,359	1,743	376	68	3,846
1964	18,745	9,691	356	2,324	1,781	506	75	4,012
1965	20,489	11,003	389	2,725	1,844	758	82	3,688
1966	21,984	11,585	506	3,078	1,847	901	110	3,957
1967	24,005	12,016	668	3,312	2,105	1,122	131	4,651
1968	26,470	12,540	1,080	4,100	2,437	1,250	145	4,918

1 Adapted from S.J.D.D.R. 1969, Table 4, pp. 44-45.

2. Includes forestry.

3 Tentative figures.

TABLE IV-21
PER CENT OF TOTAL INVESTMENT BY SECTOR

Year	All Sectors	Industry	Construc- tion	Agricul- ture	Transportation, Communication	Trade	Misc. Prod.	Service Sector
1960	100	47.5	2.5	11.8	10.1	2.5	0.4	25.2
1963	100	49.5	1.4	13.8	10.2	2.2	0.4	22.5
1964	100	51.7	1.9	12.4	9.5	2.7	0.4	21.4
1965	100	53.7	1.9	13.3	9.0	3.7	0.4	18.0
1966	100	52.7	2.3	14.0	8.4	4.1	0.5	18.0
1967	100	50.1	2.8	13.8	8.8	4.7	0.5	19.3
1968	100	47.4	4.1	15.5	9.2	4.7	0.5	18.6

INDEX OF INVESTMENT 1960 = 100								
1960	100	100	100	100	100	100	100	100
1963	106.2	110.6	59.3	124.2	107.2	93.5	106.3	94.8
1964	116.5	126.7	88.3	122.4	109.5	125.9	117.2	98.9
1965	127.3	143.9	96.5	143.5	113.4	188.6	128.1	90.9
1966	136.6	151.5	125.6	162.1	113.6	224.1	171.9	97.6
1967	149.1	157.2	165.8	174.4	129.5	279.1	204.7	114.7
1968	164.5	164.0	268.0	215.9	149.9	310.9	226.6	121.3

TABLE IV-22

CAPITAL ASSETS (GRUNDMITTELBESTAND) BY ECONOMIC SECTOR¹

Year	All Sectors	Industry and Productive Handicrafts ²	Construction	Agriculture ³	Transportation, Communication	Trade	Other Producing Sectors
Million Marks ⁴							
1960	161,381	96,279	2,808	20,486	33,078	8,730	
1963	192,962	114,442	4,027	26,697	37,765	10,031	
1964	204,788	124,153	4,335	27,070	38,754	10,476	
1965	216,710	132,392	4,559	28,400	40,111	11,248	
1966	228,433	139,681	4,880	30,289	41,428	12,155	
1967	238,222	145,563	5,252	32,175	42,415	12,817	

1 Average figures, adapted from S.J.D.D.R. 1969, Table 8, p. 48.

2 Does not include building handicrafts.

3 Includes forestry.

4 In current prices, based on price levels resulting from price revisions under the New Economic System.

TABLE IV-23
PER CENT OF CAPITAL ASSETS BY SECTOR

Year	All Sectors	Industry and Productive Handicrafts	Construction	Agriculture	Transportation, Communication	Trade	Other Producing Sectors
1960	100	59.7	1.7	12.7	20.5	5.4	
1963	100	59.3	2.1	13.8	19.6	5.2	
1964	100	60.6	2.1	13.2	19.0	5.1	
1965	100	61.1	2.1	13.1	18.5	5.2	
1966	100	61.2	2.1	13.3	18.1	5.3	
1967	100	61.1	2.2	13.5	17.8	5.4	

INDEX OF CAPITAL ASSETS BY SECTOR, 1960 = 100						
1960	100	100	100	100	100	100
1963	119.6	118.9	143.4	130.3	114.2	114.9
1964	126.9	129.0	154.4	132.1	117.2	120.0
1965	134.3	137.5	162.4	138.6	121.3	128.8
1966	141.6	145.1	173.8	147.9	125.2	139.2
1967	147.6	151.2	187.0	157.1	128.2	146.8

TABLE IV-24
CAPITAL PRODUCTIVITY BY SECTOR¹

Year	All Sectors	Industry and Productive Handicrafts ²	Construction	Agriculture ³	Transportation, Communication	Trade	Other Producing Sectors
Marks Net Product Per 1000 Marks of Capital Assets							
1960	452.8	428.4	1,831.6	585.3	121.7	1,090.0	
1963	409.8	413.2	1,316.4	416.0	114.9	973.8	
1964	408.1	400.7	1,381.5	421.9	121.8	990.7	
1965	404.7	392.2	1,414.6	427.7	118.6	975.7	
1966	403.1	390.3	1,407.4	420.4	118.9	950.0	
1967	408.0	395.4	1,403.8	420.4	118.8	942.2	

1 Calculated as Net Product ÷ Capital Assets.

2 Does not include building handicrafts.

3 Includes forestry.

TABLE IV-25
INDEX OF CAPITAL PRODUCTIVITY, 1960 = 100

Year	All Sectors	Industry and Productive Handicrafts	Construction	Agriculture	Transportation, Communication	Trade	Other Producing Sectors
1960	100	100	100	100	100	100	100
1963	90.5	96.5	71.9	71.1	94.4	89.3	
1964	90.1	93.5	75.4	72.1	100.1	90.9	
1965	89.4	91.6	77.2	73.1	97.5	89.5	
1966	89.0	91.1	76.8	71.8	97.7	87.2	
1967	90.1	92.3	76.6	71.8	97.6	86.4	

TABLE IV-26

(1000 MARK UNCHANGING PLAN PRICES)¹

GROSS INDUSTRIAL PRODUCTION BY INDUSTRY SECTORS AND SUBSECTORS, 1959 - 1968											
Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Production by Sec- tors and Subsectors as Percent of Total
											1959 1967 1968
I. PRIMARY INDUSTRIES	18,869,378	20,202,736	21,521,467	22,893,352	23,948,297	23,720,659	25,304,649	27,111,898	28,829,837	30,807,505	29.4 28.6 28.9
1. Energy	1,022,095	1,136,666	1,200,917	1,282,933	1,346,789	1,452,895	1,480,725	1,658,461	1,765,796)	4,542,196)	1.6 1.7
2. Mining	2,698,227	2,626,075	2,729,965	2,872,903	2,979,858	2,587,282	2,597,211	2,587,654	2,696,086)	5,042,347)	4.2 2.7
3. Metallurgy	4,134,790	4,577,391	4,825,967	5,002,221	5,072,907	4,072,300	4,272,188	4,510,837	4,752,448	19,022,995	6.4 17.4
4. Chemicals	9,744,293	10,470,374	11,302,349	12,176,130	12,961,730	13,807,315	15,055,751	16,366,318	17,542,023	2,199,967	15.2 2.1
5. Building Materials	1,268,973	1,392,230	1,462,269	1,559,165	1,567,013	1,800,867	1,898,774	1,988,628	2,073,484		2.0 2.1

¹ Data obtained from S.J.D.D.R., 1952, pp. 296-299; 1960-61, pp. 262-265; 1962, pp. 242-245; 1963, pp. 72-75; 1964, pp. 92-95; 1965, pp. 106-109; 1966, pp. 114-117; 1967, pp. 114-117, 1969, p. 100. The figures for 1968 are estimates derived from the index of gross production in S.J.D.D.R., 1969, p. 100. Percentage increases for 1968 were derived from this index and applied to the absolute figures for 1967. Apparently due to the introduction of a new industry classification system no comparable absolute figures were made available in the 1969 yearbook.

TABLE IV-26 Continued

GROSS INDUSTRIAL PRODUCTION BY INDUSTRY SECTORS AND SUBSECTORS. 1959 - 1968
(1000 MARK UNCHANGING PLAN PRICES)

Industry: Sectors and Subsectors	Production by Sec- tors and Subsectors as Percent of Total													
	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
I. METAL PROCESSING INDUSTRIES	21,252,228	23,584,641	25,227,888	27,584,076	29,630,079	30,986,711	33,209,479	35,614,872	38,243,105	40,926,541	33.1	38.0	38.4	
1. Heavy Machinery	3,657,400	3,993,576	4,247,107	4,667,478	4,854,576	5,185,050	5,577,073	5,839,423	6,254,125		5.7	6.3		
2. General Machinery	3,431,940	3,916,294	4,467,635	4,940,921	5,223,248	5,577,810	5,871,017	6,259,776	6,663,173		5.4	6.6		
3. Vehicles	4,462,637	4,831,274	5,098,321	5,340,820	6,043,154	5,584,625	5,746,358	6,093,649	6,534,661		7.0	6.5		
4. Shipbuilding	1,192,518	1,345,154	1,212,400	1,254,379	1,303,368	1,549,174	1,727,669	1,719,630	1,849,751		1.9	1.9		
5. Castings and Forgings	762,341	831,901	879,381	909,529	911,411	927,343	978,305	1,007,019	1,024,328		1.2	1.0		
6. Metalwares	1,565,121	1,727,700	1,892,269	2,058,239	2,230,251	2,392,634	2,548,777	2,772,615	3,039,696		2.4	3.0		
7. Electro- technical	4,839,853	5,500,723	5,923,084	6,755,284	7,161,763	7,826,534	8,507,253	9,413,601	10,119,194		7.5	10.0		
8. Precision Tools/ Optics	1,340,388	1,438,019	1,507,691	1,657,426	1,602,268	1,943,541	2,253,027	2,509,159	2,758,177		2.0	2.7		

TABLE IV-26 Continued

GROSS INDUSTRIAL PRODUCTION BY INDUSTRY SECTORS AND SUBSECTORS, 1959 - 1968 (1000 MARK UNCHANGING PLAN PRICES)

Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Production by Sec- tors and Subsectors as Percent of Total		
											1959	1967	1968
III. LIGHT INDUSTRIES	14,726,556	15,513,665	16,272,385	17,104,012	16,950,167	17,574,445	18,463,564	19,471,152	20,710,484	21,489,047	23.0	20.5	20.1
1. Woodworking -													
Cultural	2,375,590	2,606,614	2,800,782	3,023,750	3,020,012	3,179,411	3,348,387	3,551,764	3,866,049		3.7	3.8	
2. Textiles	6,260,157	6,533,842	6,671,169	6,881,226	6,911,149	7,059,699	7,423,835	7,835,172	8,384,023		9.8	8.3	7.9
3. Clothing	2,179,134	2,216,968	2,427,885	2,637,329	2,401,427	2,475,903	2,577,713	2,709,350	2,794,700		3.4	2.8	
4. Leather-Fur													
Products	1,370,606	1,452,227	1,542,485	1,628,122	1,616,107	1,659,305	1,757,868	1,862,770	1,949,674		2.1	1.9	
5. Cellulose/													
Paper	1,107,720	1,157,026	1,214,482	1,260,688	1,281,408	1,348,141	1,401,251	1,475,270	1,557,316		1.7	1.6	
6. Printing	600,373	645,720	667,769	669,559	679,010	716,062	735,635	759,617	796,015		1.0	.8	
7. Glass/Ceramics	832,976	899,268	947,813	1,003,338	1,041,054	1,135,924	1,218,875	1,277,209	1,362,707		1.3	1.3	
IV. FOOD-DRINK-TOBACCO	9,332,860	10,128,860	10,525,764	10,528,574	10,962,450	11,372,774	11,898,329	12,365,899	12,972,230	13,478,147	14.5	12.9	12.6
ALL INDUSTRIES	64,181,022	69,429,902	73,547,504	78,110,014	81,490,993	83,654,589	88,876,021	94,563,821	100,755,656	106,701,240	100.0	100.0	100.0

TABLE IV-27
INDEX OF GROSS INDUSTRIAL PRODUCTION BY INDUSTRY SECTORS AND SUBSECTORS
1959 - 1968 (1959 = 100)

Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Average Annual Rate of Growth 1959-1967
I. PRIMARY INDUSTRIES											
1. Energy	100	107.1	114.1	121.3	126.9	125.7	134.1	143.7	152.8	163.2	5.5%
2. Mining	100	111.2	117.5	125.5	132.8	142.2	144.9	162.3	172.8		7.1
3. Metallurgy	100	97.3	101.1	106.4	110.4	95.9	96.2	95.9	99.9		0
4. Chemicals	100	110.7	116.7	121.0	122.7	98.5	103.3	109.1	114.9		1.8
5. Building Materials	100	107.5	116.0	125.0	133.2	141.7	154.5	168.0	180.0		7.6
		109.7	115.2	122.9	123.5	141.9	149.6	156.7	163.4		6.3
II. METAL PROCESSING INDUSTRIES											
1. Heavy Machinery	100	111.0	118.7	129.8	139.4	145.0	156.3	167.6	180.0	192.6	7.6
2. General Machinery	100	109.2	116.1	127.6	132.7	141.8	152.5	159.7	171.0		7.0
3. Vehicles	100	114.1	130.2	144.0	152.2	162.5	171.1	182.4	194.2		8.6
4. Shipbuilding	100	108.3	114.2	119.7	135.4	125.1	128.8	136.6	146.4		4.9
5. Castings and Forgings	100	112.8	101.7	105.2	116.0	129.9	144.9	144.2	155.1		5.6
6. Metalwares	100	109.1	115.4	119.3	119.6	121.6	128.3	132.1	134.4		3.8
7. Electro-Technical	100	110.4	120.9	131.5	142.5	152.9	162.9	177.2	194.2		8.6
8. Precision Tools/Optics	100	113.7	122.4	139.6	149.4	161.7	175.8	194.5	209.1		9.6
		107.3	112.5	123.7	134.5	145.0	168.1	187.2	205.8		9.4

TABLE IV-27 Continued

INDEX OF GROSS INDUSTRIAL PRODUCTION BY INDUSTRY SECTORS AND SUBSECTORS
1959 = 1968 (1959 = 100)

Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Average Annual Rate of Growth 1959 - 1967
III. LIGHT INDUSTRIES	100	105.3	110.5	116.1	115.1	119.3	125.4	132.2	140.6	145.9	4.4%
1. Woodworking -											
2. Cultural	100	109.7	117.9	127.3	127.1	133.8	141.0	149.5	162.7		6.3
3. Textiles	100	104.4	106.6	109.9	110.4	112.8	118.6	125.2	133.9		3.7
4. Clothing	100	101.8	111.4	121.0	110.2	113.6	118.3	124.3	128.3		3.2
5. Leather-Fur											
6. Products	100	106.0	112.5	118.8	117.9	121.1	128.3	135.9	142.3		4.5
7. Cellulose/Paper	100	104.5	109.6	113.8	115.7	121.7	126.5	132.2	140.6		4.4
8. Printing	100	107.6	111.2	111.5	113.1	119.3	122.5	126.5	132.6		3.7
9. Glass/Ceramics	100	108.0	113.8	120.5	125.0	136.4	146.3	153.3	163.6		6.3
IV. FOOD-DRINK-TOBACCO	100	108.5	112.8	112.8	117.5	121.9	127.5	132.5	139.0	144.4	4.3
ALL INDUSTRIES	100	108.2	114.6	121.7	127.0	130.3	138.5	147.3	157.0	164.7	5.9

TABLE IV-28

EMPLOYMENT IN SECTORS AND SUBSECTORS OF EAST GERMAN INDUSTRY, 1959 - 1968¹

PERCENT OF TOTAL
EMPLOYMENT

Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968 ²	1959 ³	1967	1968
I. PRIMARY INDUSTRIES	711,882	720,213	724,389	726,869	726,949	734,533	741,601	744,604	738,552	717,667	25.8%	26.9%	25.7%
1. Energy	61,522	64,279	66,048	66,522	67,872	69,100	70,139	70,390	68,645	184,446	2.2	2.5	6.6
2. Mining	206,041	190,663	189,359	191,252	191,892	192,878	190,385	189,838	183,315	120,378	7.5	6.7	4.3
3. Metallurgy	86,795	102,980	107,840	107,486	106,788	107,855	112,459	114,079	112,150	325,019	3.1	4.2	11.6
4. Chemicals	264,733	268,853	269,025	271,466	272,185	275,621	280,645	282,038	284,286	87,794	9.6	10.4	3.1
5. Building Materials	92,791	93,438	92,117	90,143	88,212	89,079	87,973	88,259	87,156		3.4	3.2	

¹ Source: S.J.D.D.R., 1959, pp. 296-299; 1960/61, pp. 262-265; 1962, pp. 242-245; 1963, pp. 12-15; 1964, pp. 92-95; 1965, pp. 106-109; 1966, pp. 114-117; 1967, pp. 114-117; 1968, pp. 116-119.

² Ibid, 1969, p. 103. Adapted from data classified under the new ELN system.

³ Taken from H. Kohler, Economic Integration in the Soviet Bloc, p. 199

TABLE IV-28 Continued

EMPLOYMENT IN SECTORS AND SUBSECTORS OF EAST GERMAN INDUSTRY, 1959 - 1968											PERCENT OF TOTAL EMPLOYMENT		
Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1959	1967	1968
III. METAL PROCESSING INDUSTRIES	1,005,040	1,013,861	1,036,342	1,040,784	1,056,050	1,023,354	1,037,361	1,053,277	1,072,983	1,148,475	36.4	39.1	41.1
1. Heavy Machinery	173,174	174,339	175,559	176,973	178,576	181,202	182,384	185,545	189,483		6.3	6.9	
2. General Machinery	171,467	176,725	197,671	197,493	198,706	200,974	204,242	206,723	208,425		6.2	7.6	
3. Vehicles	185,781	184,430	182,474	178,847	184,826	140,619	143,515	146,277	148,285	806,289	6.7	5.4	
4. Shipbuilding	39,266	38,923	37,106	36,072	37,673	38,115	38,180	37,995	38,619		1.4	1.4	
5. Castings and Forgings	46,555	47,300	47,306	46,644	45,554	44,729	44,681	45,116	45,446		1.7	1.7	
6. Metalwares	87,242	86,782	86,840	88,836	90,182	89,269	89,668	90,374	91,596		3.2	3.3	
7. Electro-Technical	208,111	211,702	215,157	221,797	225,451	230,662	232,594	236,875	242,188	342,186	7.5	8.8	
8. Precision Tools/ Optics	93,444	93,660	94,229	94,152	95,062	97,784	102,097	104,392	108,941		3.4	4.0	

TABLE IV-28 Continued

EMPLOYMENT IN SECTORS AND SUBSECTORS OF EAST GERMAN INDUSTRY, 1959 - 1968											PERCENT OF TOTAL EMPLOYMENT		
Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1959	1967	1968
III. LIGHT INDUSTRIES	838,252	836,917	826,307	812,737	785,859	766,275	750,609	739,870	733,311	717,379	30.3	26.7	25.7
1. Woodworking -													
2. Cultural	151,192	151,747	152,949	151,930	148,349	143,828	141,161	140,213	140,055	262,190	5.5	5.1	9.4
3. Textiles	330,604	330,390	322,671	311,908	301,614	290,011	280,935	273,869	269,412		2.0	9.8	
4. Clothing	118,472	117,319	116,353	117,487	108,299	105,515	103,590	102,053	100,707		4.3	3.7	
5. Leather-Fur													
6. Products	69,754	69,636	68,297	67,234	65,336	65,283	65,333	65,047	65,152		2.5	2.4	
7. Cellulose/Paper	62,467	62,362	62,610	61,750	60,697	59,654	58,351	58,101	56,992		2.3	2.1	
8. Printing	39,189	38,667	37,742	37,243	36,111	35,790	35,113	34,739	34,513		1.4	1.3	
9. Glass/Ceramics	66,574	66,796	65,685	65,185	65,453	66,194	66,126	65,848	66,480		2.4	2.4	
IV. FOOD-DRINK-TOBACCO	207,267	211,403	212,139	207,615	206,173	203,122	200,335	199,704	201,647	210,032	7.5	7.3	7.5
ALL INDUSTRIES	2,762,441	2,782,394	2,799,177	2,788,005	2,775,031	2,727,284	2,729,906	2,737,455	2,746,493	2,793,553	100.0	100.0	100.0

TABLE IV-29

EMPLOYMENT INDEX FOR SECTORS AND SUBSECTORS OF EAST GERMAN INDUSTRY, 1959 - 1968 (1959 = 100)

Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
I. PRIMARY INDUSTRIES	100	101.17	101.76	102.1	102.12	103.18	104.2	104.60	103.75	100.8
1. Energy	100	104.48	107.36	108.1	110.32	112.32	114.0	114.41	111.58	
2. Mining	100	92.54	91.90	92.8	93.13	93.61	92.4	92.14	88.97	
3. Metallurgy	100	118.6	124.2	123.8	123.0	124.3	123.6	131.4	132.7	138.7
4. Chemicals	100	101.6	101.6	102.5	102.8	104.1	106.0	106.5	107.4	122.8
5. Building Materials	100	100.7	99.3	97.2	95.1	96.0	94.8	95.1	93.9	94.6
II. METAL PROCESSING INDUSTRIES	100	100.9	103.1	103.6	105.1	101.8	103.2	104.8	106.8	114.3
1. Heavy Machinery	100	100.7	101.4	102.2	103.1	104.6	105.1	107.1	109.4	
2. General Machinery	100	103.1	115.3	115.2	115.9	117.2	119.1	120.6	121.6	
3. Vehicles	100	99.3	98.2	96.3	99.5	75.7	77.3	78.7	79.8	
4. Shipbuilding	100	97.5	94.5	81.9	95.9	97.1	97.2	96.8	98.4	
5. Castings and Forgings	100	101.6	101.6	100.2	97.8	96.1	96.0	96.9	97.6	
6. Metalwares	100	99.5	99.5	101.8	103.4	102.3	102.8	103.6	105.0	
7. Electro-Technical	100	101.7	103.4	106.6	106.3	110.8	111.8	113.8	116.4	
8. Precision Tools/ Optics	100	100.2	100.8	100.8	101.8	104.6	109.3	111.7	116.6	

TABLE IV-29 Continued

EMPLOYMENT INDEX FOR SECTORS AND SUBSECTORS OF EAST GERMAN INDUSTRY, 1959 - 1968 (1959 = 100)

Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
III. LIGHT INDUSTRIES	100	99.8	98.6	97.0	93.7	91.4	89.5	88.3	87.5	85.6
1. Woodworking -	100	100.4	101.2	100.5	98.1	95.1	93.4	92.7	92.6	
Cultural	100	99.9	97.6	94.3	91.2	87.7	85.0	82.8	81.5	79.3
2. Textiles	100	99.0	98.2	99.2	91.4	89.1	87.4	86.1	85.0	
3. Clothing	100	99.8	97.9	96.4	93.7	93.6	93.7	93.3	93.4	
4. Leather-Fur Products	100	99.8	100.2	98.9	97.2	95.5	93.4	93.0	91.2	
5. Cellulose/Paper	100	98.7	96.3	95.0	92.1	91.3	89.6	88.6	88.1	
6. Printing	100	100.3	98.7	97.9	98.3	99.4	89.3	98.9	99.9	
7. Glass/Ceramics	100									
IV. FOOD-DRINK-TOBACCO	100	102.0	102.4	100.2	99.5	98.0	96.7	96.4	97.3	101.3
ALL INDUSTRIES	100	100.7	101.3	100.9	100.5	98.7	98.8	99.1	99.4	101.1

TABLE IV-30

CORRECTED ABSOLUTE EMPLOYMENT WITH ASSUMED AVERAGE GROWTH IN PRODUCTIVITY FOR EACH SECTOR AND INDEX, 1959 = 100

Industry: Sectors and Subsectors	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
I. PRIMARY INDUSTRIES	711,882	709,679	717,902	716,173	714,798	677,967	680,454	687,867	688,836	706,986
100	99.7	100.8	100.6	100.6	100.4	95.2	95.6	96.7	96.8	99.3
II. METAL PROCESSING INDUSTRIES	1,005,040	1,038,477	1,054,848	1,081,640	1,106,556	1,110,129	1,119,376	1,132,641	1,145,362	1,177,267
100	103.3	105.0	107.6	107.6	110.3	110.5	111.4	112.7	114.0	117.1
III LIGHT INDUSTRIES	838,252	822,222	818,967	807,288	763,316	757,854	749,093	745,347	746,596	744,034
100	98.1	97.7	96.3	96.3	91.1	90.5	89.4	88.9	89.1	88.8
IV. FOOD-DRINK-TOBACCO	207,267	209,447	206,685	193,883	192,610	191,342	188,341	184,685	182,453	182,073
100	101.1	99.7	93.5	93.5	92.9	92.3	90.9	89.1	88.1	87.8
ALL INDUSTRIES	2,762,441	2,779,825	2,798,402	2,798,984	2,779,280	2,737,292	2,737,264	2,750,540	2,763,247	2,810,360
100	100.6	101.3	101.3	101.3	100.6	99.1	99.1	99.6	100.0	101.7

TABLE IV-31
LABOR PRODUCTIVITY IN INDUSTRY¹
MARKS GROSS PRODUCT PER WORKER AND SALARIED EMPLOYEE

Industry: Sectors and Subsectors	1959	1961	1963	1965	1967	1968
I. PRIMARY INDUSTRIES	26,506	29,710	32,944	34,122	39,036	42,927
1. Energy	16,614	18,183	19,843	21,111	25,724	
2. Mining	13,100	14,417	15,529	13,642	14,707	
3. Metallurgy	47,639	44,751	47,505	37,989	41,272	41,888
4. Chemicals	36,808	42,012	47,695	53,647	61,706	58,523
5. Building Materials	13,676	15,874	17,764	21,584	23,762	25,058
II. METAL PROCESSING INDUSTRIES	21,146	24,343	28,058	32,013	35,642	35,636
1. Heavy Machinery	21,120	24,192	27,185	30,579	33,006	
2. General Machinery	20,015	22,601	26,286	28,745	31,969	
3. Vehicles	24,021	27,940	32,696	40,040	44,068	
4. Shipbuilding	30,371	32,674	36,721	45,251	47,897	
5. Castings and Forgings	16,375	18,589	20,007	21,895	22,540	
6. Metalwares	17,940	21,790	24,731	28,425	33,186	
7. Electro-Technical	23,256	27,529	31,855	36,576	41,782	
8. Precision Tools/Optics	14,344	16,000	18,955	22,068	25,318	

¹ Calculated as Gross Product ÷ Employment (Arbeiter und Angestellte)

TABLE IV-31 Continued

LABOR PRODUCTIVITY IN INDUSTRY
MARKS GROSS PRODUCT PER WORKER AND SALARIED EMPLOYEE

Industry: Sectors and Subsectors	1959	1961	1963	1965	1967	1968
III. LIGHT INDUSTRIES	17,568	19,693	21,569	24,598	28,242	29,955
1. Woodworking -						
Cultural	15,712	18,312	20,358	23,720	27,604	
2. Textiles	18,936	20,675	22,914	26,426	31,120	32,361
3. Clothing	18,394	20,867	22,174	24,884	27,751	
4. Leather-Fur Products	19,649	22,585	24,735	26,906	29,925	
5. Cellulose/Paper	17,733	19,398	21,112	24,014	27,325	
6. Printing	15,320	17,693	18,803	20,951	23,064	
7. Glass/Ceramics	12,512	14,430	15,905	18,433	20,498	
IV. FOOD-DRINK-TOBACCO	45,028	49,617	53,171	59,392	64,331	64,172
ALL INDUSTRIES	23,233	26,275	29,366	32,588	36,685	38,196

TABLE IV-32
INDEX OF LABOR PRODUCTIVITY IN INDUSTRY, 1959 = 100

Industry: Sectors and Subsectors	1959	1961	1963	1965	1967	1968	Average Annual Rate of Growth 1959-1967
I. PRIMARY INDUSTRIES	100	112.1	124.3	128.7	147.3	162.0	5.0%
1. Energy	100	109.4	119.4	127.1	154.8		5.6
2. Mining	100	110.1	118.5	104.1	112.3		1.4
3. Metallurgy	100	93.9	99.7	79.7	86.6	87.9	-1.6
4. Chemicals	100	114.1	129.6	145.8	167.6	159.0	6.6
5. Building Materials	100	116.1	129.9	157.8	173.8	183.2	7.1
II. METAL PROCESSING INDUSTRIES	100	115.1	132.7	151.4	168.6	168.5	6.7
1. Heavy Machinery	100	114.6	128.7	144.8	156.3		5.7
2. General Machinery	100	112.9	131.3	143.6	159.7		6.0
3. Vehicles	100	116.3	136.1	166.7	183.5		7.9
4. Shipbuilding	100	107.6	120.9	149.0	157.7		5.9
5. Castings and Forgings	100	113.5	122.2	133.7	137.7		4.0
6. Metalwares	100	121.5	137.9	158.4	185.0		8.0
7. Electro-Technical	100	118.4	137.0	157.3	179.7		7.6
8. Precision Tools/Optics	100	111.5	132.2	153.9	176.5		7.4

TABLE IV-32 Continued

INDEX OF LABOR PRODUCTIVITY IN INDUSTRY, 1959 = 100

Industry: Sectors and Subsectors	1959	1961	1963	1965	1967	1968	Average Annual Rate of Growth 1959-1967
III. LIGHT INDUSTRIES	100	112.1	122.8	140.0	160.8	170.5	6.1
1. Woodworking - Cultural	100	116.6	129.6	151.0	175.7		7.3
2. Textiles	100	109.2	121.0	139.6	164.3	170.9	6.4
3. Clothing	100	113.4	120.6	135.3	150.9		5.3
4. Leather-Fur Products	100	114.9	125.9	136.9	152.3		5.4
5. Cellulose/Paper	100	109.4	119.1	135.4	154.1		5.5
6. Printing	100	115.5	122.7	136.8	150.6		5.3
7. Glass/Ceramics	100	115.3	127.1	147.3	163.8		6.3
IV. FOOD-DRINK-TOBACCO	100	110.2	118.1	131.9	142.9	142.5	4.6
ALL INDUSTRIES	100	113.1	126.4	140.3	157.9	164.4	5.9

TABLE IV-33

INVESTMENT IN INDUSTRY SECTORS AND SUBSECTORS, 1960 - 1968
(NOT INCLUDING GENERAL REPAIRS)
MILLION MARKS¹ - CURRENT PRICES

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967	1968	Percent of Total 1957 ³	Percent of Total 1962	Percent of Total 1967 ²
I. PRIMARY INDUSTRIES	4,499	4,208	4,593	4,815	5,349	5,976	6,050	5,843	5,843	52.0	67.8	59.3
1. Energy	1,037	1,075	1,155	1,150	1,242	1,329	1,204	1,087		4.5	17.1	11.6
2. Mining	1,571	1,350	1,397	1,529	1,669	1,753	1,710	1,540		15.9	20.6	16.1
3. Metallurgy	385	447	508	561	594	723	749	862	803	14.1	7.5	8.3
4. Chemicals	1,139	979	1,168	1,280	1,562	1,836	2,025	1,960	1,970	11.7	17.3	19.8
5. Building Materials	367	357	365	295	282	335	362	373	467	5.8	5.4	3.6

¹ Data from S.J.D.D.R. 1968, p. 53; S.J.D.D.R. 1967, p. 52; and S.J.D.D.R. 1969, p. 46. Because of price changes in 1967 absolute figures for that year were derived from the adjusted indexes in Table 4, S.J.D.D.R. 1968, p. 54, and not from the unadjusted figures on p. 53. Figures for 1968 were calculated by applying the percentage increase in each sector, as recorded in Table 5, p. 46 in the 1969 S.J.D.D.R., to the absolute figures for 1967. Because of classification changes these figures are not completely comparable.

² Based on tentative figures for 1967.

³ Taken from H. Köhler, *op. cit.*, pp. 206-207

TABLE IV-33 Continued

INVESTMENT IN INDUSTRY SECTORS AND SUBSECTORS, 1960 - 1968
(NOT INCLUDING GENERAL REPAIRS)
MILLION MARKS - CURRENT PRICES

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967	1968	Percent of Total 1957	Percent of Total 1962	Percent of Total 1967
II. METAL PROCESSING INDUSTRIES	1,153	1,258	1,234	1,374	1,583	1,832	2,100	2,490	2,610	38.0 ¹	18.2	23.9
1. Heavy Machinery	229	235	274	284	333	372	417	437		4.0	4.0	4.2
2. General Machinery	272	275	267	316	333	390	460	532			3.9	5.2
3. Vehicles	191	193	151	206	295	367	395	432			2.2	4.2
4. Shipbuilding	50	40	33	23	38	48	49	57			.5	.6
5. Castings and Forgings	70	76	73	76	80	102	145	176			1.1	1.7
6. Metalwares	65	85	71	94	98	98	131	153			1.1	1.5
7. Electro-Technical	223	277	281	279	307	335	364	493		10.2	4.2	4.5
8. Precision Tools/Optics	53	77	84	96	99	120	139	216		4.2	1.2	2.0

¹ Given as 37.8 in Köhler, but this is apparently a typographical error.

TABLE IV-33 Continued

INVESTMENT IN INDUSTRY SECTORS AND SUBSECTORS, 1960 - 1968
(NOT INCLUDING GENERAL REPAIRS)
MILLION MARKS - CURRENT PRICES

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967	1968	Percent of Total 1957	Percent of Total 1962	Percent of Total 1967
III. LIGHT INDUSTRIES	647	665	628	663	668	710	774	1,008	1,147	5.0	9.3	10.4
1. Woodworking -												
Cultural	98	112	102	102	112	121	149	163			1.5	1.7
2. Textiles	233	233	207	253	236	253	260	358	400		3.1	3.7
3. Clothing	19	15	17	22	14	16	24	32			.3	.3
4. Leather-Fur												
Products	39	39	42	33	32	43	49	58			.6	.6
5. Cellulose/ Paper	112	113	100	98	105	97	110	171			1.5	1.8
6. Printing	16	15	24	12	27	26	31	44			.4	.5
7. Glass/Ceramics	130	138	136	143	142	154	151	181			2.0	1.8
IV. FOOD-DRINK-TOBACCO	209	311	315	288	325	428	577	705	835	5.0	4.7	6.4
ALL INDUSTRIES	6,508	6,442	6,770	7,140	7,925	8,946	9,501	10,029	10,435	100.0	100.0	100.0

TABLE IV-34
INVESTMENT INDEX FOR INDUSTRY SECTORS AND SUBSECTORS 1960 - 1968¹

Industry: Sectors and Subsectors	1960	1961	1963	1965	1967 ²	1968
I. PRIMARY INDUSTRIES	100	93.5	107.0	132.8	129.5	129.9
1. Energy	100	103.7	110.9	128.2	104.8	
2. Mining	100	85.9	97.3	111.6	98.0	
3. Metallurgy	100	116.1	145.7	187.8	224.0	208.6
4. Chemicals	100	86.0	112.4	161.2	173.8	173.0
5. Building Materials	100	97.3	80.4	91.3	101.6	127.3

¹ Taken from S.J.D.D.R. 1968, p. 54.

² Based on tentative figures for 1967.

TABLE IV-34 Continued
INVESTMENT INDEX FOR INDUSTRY SECTORS AND SUBSECTORS 1960 - 1968

Industry: Sectors and Subsectors	1960	1961	1963	1965	1967	1968
II. METAL PROCESSING INDUSTRIES	100	109.1	119.2	158.9	216.0	226.4
1. Heavy Machinery	100	102.6	124.0	162.4	190.7	
2. General Machinery	100	101.1	116.2	143.4	195.5	
3. Vehicles	100	101.0	107.9	192.1	226.0	
4. Shipbuilding	100	80.0	46.0	96.0	113.5	
5. Castings and Forgings	100	108.6	108.6	145.7	251.6	
6. Metalwares	100	130.8	144.6	150.8	234.9	
7. Electro-Technical	100	124.2	125.1	150.2	221.1	
8. Precision Tools/ Optics	100	145.3	181.1	226.4	408.1	

TABLE IV-34 Continued
INVESTMENT INDEX FOR INDUSTRY SECTORS AND SUBSECTORS 1960 - 1968

Industry: Sectors and Subsectors	1960	1961	1963	1965	1967	1968
III. LIGHT INDUSTRIES	100	102.8	102.5	109.7	155.8	177.3
1. Woodworking - Cultural	100	114.3	104.1	123.5	166.4	
2. Textiles	100	100.0	108.6	108.6	153.6	171.7
3. Clothing	100	78.9	115.8	84.2	169.9	
4. Leather-Fur Products	100	100.0	84.6	110.3	149.0	
5. Cellulose/Paper	100	100.9	87.5	86.6	152.5	
6. Printing	100	93.8	75.0	162.5	277.7	
7. Glass/Ceramics	100	106.2	110.0	118.5	139.4	
IV. FOOD-DRINK-TOBACCO	100	148.8	137.8	204.8	337.1	399.5
ALL INDUSTRIES	100	99.0	109.7	137.5	154.1	160.3

TABLE IV-35

CAPITAL ASSETS (GRUNDMITTELBESTAND) IN INDUSTRY - MILLION MARKS CURRENT PRICES¹

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967	Percent in 1960	Percent in 1966
I. PRIMARY INDUSTRIES	47,179	50,108	53,895	57,942	63,106	67,577	71,930	75,348	58.8	61.7
1. Energy	12,409	13,095	14,365	15,756	16,984	18,084	19,317		15.5	16.6
2. Mining	12,145	13,256	14,323	15,442	16,910	18,484	19,781		15.1	17.0
3. Metallurgy	5,253	5,457	5,811	6,226	6,722	7,298	7,851	8,082	6.5	6.7
4. Chemicals	14,488	15,072	15,824	16,663	18,293	19,352	20,529	22,017	18.0	17.6
5. Building Materials	2,884	3,228	3,572	3,855	4,197	4,359	4,452	4,549	3.6	3.8

¹ Data for 1960-1966 found in Table 7, 1968 S.J.D.D.R., p. 56-57. Figures for 1967 are estimates derived with the use of coefficients calculated from overlapping data for the years 1960, 1963 and 1966, based on Table 9, p. 49, S.J.D.D.R. 1969.

TABLE IV-35 Continued

CAPITAL ASSETS (GRUNDMITTELBESTAND) IN INDUSTRY - MILLION MARKS CURRENT PRICES¹

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967	Percent in	
									1960	1966
II. METAL PROCESSING INDUSTRIES	15,440	16,400	17,366	18,458	19,950	21,321	22,760	24,369	19.2	19.5
1. Heavy Machinery	3,350	3,627	3,831	3,998	4,297	4,490	4,739		4.2	4.1
2. General Machinery	3,236	3,409	3,614	3,729	4,056	4,319	4,635		4.0	4.0
3. Vehicles	2,420	2,584	2,699	2,854	3,075	3,350	3,782		3.0	3.2
4. Shipbuilding	833	860	883	980	1,013	1,049	1,055		1.0	.9
5. Castings and Forgings	976	1,012	1,033	1,105	1,195	1,254	1,328		1.2	1.1
6. Metalwares	1,042	1,101	1,245	1,340	1,437	1,515	1,564		1.3	1.3
7. Electro-Technical	2,497	2,687	2,910	3,210	3,533	3,762	4,069		3.1	3.5
8. Precision Tools/Optics	1,086	1,120	1,151	1,242	1,344	1,502	1,588		1.4	1.4

TABLE IV-35 Continued

CAPITAL ASSETS (GRUNDMITTELBESTAND) IN INDUSTRY - MILLION MARKS CURRENT PRICES¹

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967	Percent in 1960	Percent in 1966
III. LIGHT INDUSTRIES	10,849	11,254	11,672	12,263	12,996	13,516	13,830	13,846	13.5	11.9
1. Woodworking - Cultural	1,420	1,474	1,515	1,582	1,693	1,815	1,869		1.8	1.6
2. Textiles	4,718	4,896	5,021	5,182	5,420	5,564	5,601	5,570	5.9	4.8
3. Clothing	250	265	285	288	306	318	326		.3	.3
4. Leather-Fur Products	797	822	846	867	904	882	899		1.0	.8
5. Cellulose/Paper	1,867	1,885	2,027	2,160	2,294	2,380	2,429		2.3	2.1
6. Printing	585	602	604	673	695	729	773		.7	.7
7. Glass/Ceramics	1,232	1,310	1,374	1,511	1,684	1,828	1,933		1.5	1.7
IV. FOOD-DRINK-TOBACCO	6,844	7,041	7,222	7,540	7,884	7,859	8,072	8,515	8.5	6.9
ALL INDUSTRIES	80,312	84,803	90,155	96,203	103,936	110,273	116,592	122,077	100.0	100.0

TABLE IV-36
INDEX OF CAPITAL ASSETS IN INDUSTRY, 1960 - 1967

Industry: Sectors and Subsectors		1960	1961	1962	1963	1964	1965	1966	1967
II. METAL PROCESSING INDUSTRIES		100	106.2	112.5	119.5	129.2	138.1	147.4	157.8
1. Heavy Machinery	100	108.3	114.4	119.3	128.3	134.0	141.5		
2. General Machinery	100	105.3	111.7	115.2	125.4	133.5	143.2		
3. Vehicles	100	106.8	111.5	118.0	127.1	141.7	156.3		
4. Shipbuilding	100	103.3	106.1	117.7	121.6	125.9	126.7		
5. Castings and Forgings	100	103.7	105.9	113.2	122.4	128.5	136.1		
6. Metalwares	100	105.6	119.5	128.5	137.9	145.3	150.1		
7. Electro-Technical	100	107.6	116.5	128.6	141.5	150.7	163.0		
8. Precision Tools/Optics	100	103.2	106.0	114.3	123.8	138.3	146.2		

TABLE IV-36 Continued
INDEX OF CAPITAL ASSETS IN INDUSTRY, 1960 - 1967

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967
III. LIGHT INDUSTRIES	100	103.7	107.6	113.0	119.8	124.6	127.5	127.6
1. Woodworking -								
Cultural	100	103.8	106.7	111.4	119.2	127.8	131.6	
2. Textiles	100	103.8	106.4	109.8	114.9	117.9	118.9	118.1
3. Clothing	100	106.1	114.0	115.4	122.4	127.3	130.4	
4. Leather-Fur Products	100	103.1	106.2	108.8	113.5	110.7	112.8	
5. Cellulose/ Paper	100	101.0	108.6	115.7	122.9	127.5	130.1	
6. Printing	100	106.6	106.9	119.2	123.0	129.0	136.8	
7. Glass/ Ceramics	100	106.3	111.5	122.6	136.7	148.3	136.9	
IV. FOOD-DRINK- TOBACCO	100	102.9	105.5	110.2	115.2	114.8	117.9	124.4
ALL INDUSTRIES	100	105.6	112.3	119.8	129.4	137.3	145.2	152.0

TABLE IV-37

CAPITAL PRODUCTIVITY IN INDUSTRY¹
NUMBER OF MARKS GROSS PRODUCTION PER 1000 MARKS CAPITAL ASSETS

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967
I. PRIMARY INDUSTRIES	428.2	429.5	424.8	413.3	375.9	374.5	376.9	382.6
1. Energy	91.6	91.7	89.3	85.5	85.5	81.9	85.9	
2. Mining	216.2	205.9	200.6	193.0	153.0	140.5	130.8	
3. Metallurgy	871.4	884.4	860.8	814.8	605.8	585.4	574.5	588.0
4. Chemicals	722.7	749.9	769.5	779.1	734.8	776.0	797.2	796.8
5. Building Materials	482.7	453.0	436.5	406.5	429.1	435.6	446.7	455.8

¹ Calculated as Gross Product + Capital Assets. Capital asset figures for 1967 estimated as indicated previously.

TABLE IV-37 Continued

CAPITAL PRODUCTIVITY IN INDUSTRY
NUMBER OF MARKS GROSS PRODUCTION PER 1000 MARKS CAPITAL ASSETS

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967
II. METAL PROCESSING INDUSTRIES	1,527.5	1,538.3	1,588.4	1,605.3	1,553.2	1,557.6	1,564.8	1,569.3
1. Heavy Machinery	1,192.1	1,171.0	1,218.3	1,214.3	1,206.7	1,242.1	1,232.2	
2. General Machinery	1,210.2	1,310.5	1,367.2	1,400.7	1,375.2	1,359.4	1,350.5	
3. Vehicles	1,996.4	1,973.0	1,978.8	2,117.4	1,816.4	1,675.3	1,611.2	
4. Shipbuilding	1,614.8	1,409.8	1,420.6	1,411.6	1,529.3	1,647.0	1,630.0	
5. Castings and Forgings	852.4	869.0	880.5	824.8	776.0	780.2	758.3	
6. Metalwares	1,658.1	1,718.7	1,653.2	1,664.4	1,665.0	1,682.4	1,772.8	
7. Electro-Technical	2,202.9	2,204.4	2,321.4	2,237.3	2,215.3	2,261.4	2,313.5	
8. Precision Tools/Optics	1,324.1	1,346.2	1,440.0	1,451.1	1,446.1	1,500.0	1,580.1	

TABLE IV-37 Continued

CAPITAL PRODUCTIVITY IN INDUSTRY
NUMBER OF MARKS GROSS PRODUCTION PER 1000 MARKS CAPITAL ASSETS

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967
III. LIGHT INDUSTRIES	1,430.0	1,445.9	1,465.4	1,382.2	1,352.3	1,366.1	1,407.9	1,495.8
1. Woodworking -								
Cultural	1,835.6	1,900.1	1,995.9	1,909.0	1,878.0	1,844.8	1,900.4	
2. Textiles	1,384.9	1,362.6	1,370.5	1,333.7	1,302.5	1,334.3	1,398.9	1,505.2
3. Clothing	8,875.9	9,161.8	9,253.8	8,338.3	8,091.2	8,106.0	8,330.9	
4. Leather-Fur Products	1,822.1	1,876.5	1,924.5	1,864.0	1,835.5	1,993.1	2,072.1	
5. Cellulose/ Paper	619.7	644.3	622.0	593.2	587.7	588.8	607.4	
6. Printing	1,142.9	1,109.3	1,108.5	1,008.9	1,030.3	1,009.1	982.7	
7. Glass/ Ceramics	729.9	723.5	730.2	689.0	674.5	666.8	660.7	
IV. FOOD-DRINK-TOBACCO	1,480.0	1,494.9	1,457.9	1,453.9	1,442.5	1,514.0	1,532.0	1,523.6
ALL INDUSTRIES	864.5	867.3	866.4	847.1	804.9	806.0	811.1	825.4

TABLE IV-38

INDEX OF CAPITAL PRODUCTIVITY IN INDUSTRY (1960 = 100)

Industry: Sectors and Subsectors		1960	1961	1962	1963	1964	1965	1966	1967
I. PRIMARY INDUSTRIES									
1. Energy	100	100.3	99.2	96.5	87.8	87.5	88.0	89.4	
2. Mining	100	100.1	97.5	93.3	93.3	89.4	93.8		
3. Metallurgy	100	95.2	92.8	89.3	71.1	65.0	60.5		
4. Chemicals	100	101.5	98.8	93.5	69.5	67.2	65.9		67.5
5. Building Materials	100	103.8	106.5	107.8	104.4	107.7	110.3		110.3
	100	93.9	90.4	84.2	88.9	90.2	92.5		94.4
II. METAL PROCESSING INDUSTRIES									
1. Heavy Machinery	100	100.7	104.0	105.1	101.7	102.0	102.4		102.7
2. General Machinery	100	98.2	102.2	101.9	101.2	104.2	103.4		
3. Vehicles	100	108.3	113.0	115.7	113.6	112.3	111.6		
4. Shipbuilding	100	98.8	99.1	106.1	90.1	83.9	80.7		
5. Castings and Forgings	100	87.3	88.0	87.4	94.7	102.0	100.9		
6. Metalwares	100	102.0	103.3	96.8	91.0	91.5	89.0		
7. Electro- Technical	100	103.7	99.7	100.4	100.4	101.5	106.9		
8. Precision Tools/ Optics	100	100.1	105.4	101.6	100.6	102.7	105.0		
	100	101.7	108.8	109.6	109.2	113.3	119.3		

TABLE IV-38 Continued
INDEX OF CAPITAL PRODUCTIVITY IN INDUSTRY (1960 = 100)

Industry: Sectors and Subsectors	1960	1961	1962	1963	1964	1965	1966	1967
III. LIGHT INDUSTRIES	100	101.1	102.5	96.7	94.6	95.5	98.5	104.6
1. Woodworking -								
Cultural	100	103.5	108.7	104.0	102.3	100.5	103.5	
2. Textiles	100	98.4	99.0	96.3	94.1	96.4	101.0	108.7
3. Clothing	100	103.2	104.1	93.9	91.2	91.3	93.6	
4. Leather-Fur Products	100	103.0	105.6	102.3	100.7	109.4	113.7	
5. Cellulose/ Paper	100	104.0	100.4	95.7	94.8	95.0	98.0	
6. Printing	100	97.1	97.0	88.3	90.2	88.3	86.0	
7. Glass/ Ceramics	100	99.1	100.0	94.4	92.4	91.4	90.5	
IV. FOOD-DRINK- TOBACCO	100	101.0	98.5	98.2	97.5	102.3	103.5	103.0
ALL INDUSTRIES	100	100.3	100.2	98.0	93.1	93.2	93.8	95.5

CHAPTER V

A. STRUCTURAL CHANGES AND THE FOREIGN TRADE SECTOR

As we have noted previously, the foreign trade sector may be related to the economic planning system and to structural changes in several ways.

To the extent that the domestic planning system is tied in with the planning system of an international trading organization, domestic goals will be influenced directly by the foreign trade sector. East Germany's involvement in COMECON would lead one to assume some connection between the goals of that organization and the course of industrial development in East Germany. To test this empirically one can examine the nature and extent of East Germany's trade with Comecon countries, both in itself (by type of product and industrial sector) and in comparison with trade to other countries. This will enable us in the next chapter to arrive at some estimate of the impact of Comecon planning on East German industry.

Even if no trading bloc like Comecon existed, one would expect foreign trade to have a significant effect on the growth (and therefore the structure) of East German industry. Virtually every industrial nation will be forced to import

goods from abroad, to overcome scarcities in its domestic resource base. A country like East Germany, separated as it is from a large part of its prewar territory, could be expected to have unusually strong needs of this kind. Raw materials and investment goods in particular might be imported, either to replace similar domestic goods which are being produced inefficiently, or to support rapidly growing industries whose raw material and investment needs outstrip supply. One would expect then to see some correlation between increases in imports and the decline of inefficient raw material or capital goods producers at home. There might also be a correlation between such imports and rapidly growing finished goods producers at home. It might be said in the first case that the possibility of foreign trade directly produces structural changes in domestic industries, leading to their relative or absolute decline. In the second case foreign trade helps to stimulate the growth of some industries beyond what might otherwise be possible.

In order to pay for these imports the home country will have to engage in export trade. The goods chosen for export may be related to the most rapidly expanding industrial sectors in several ways. The home country may encourage their export because they come from a growing

industry which is increasingly capable of meeting domestic demand. On the other hand, the growth of the industry may itself be due to foreign demand. In this last instance foreign demand has a direct influence on changes in industrial structure, regardless of the source of that demand. At the same time it would appear that the foreign demand of trading partners involved with the home country in a common trade bloc would stimulate home industry more directly than the foreign demand of non-bloc countries. This might be true because the bloc countries would consciously pursue specialization of production and trade, and perhaps enter into long-run contracts tied in with long-run planning, more readily than would other countries. One might expect, then, to see a stronger correlation between exports to these bloc countries and rapidly growing industrial sectors in East Germany, than between such exports to other countries and the same sectors. In other words, if it is seen that export growth is related to the rate of growth of various industrial sectors, this relationship should be even more obvious in East Germany's export trade with Comecon countries than in its exports to non-bloc countries. Whether this is so should become clearer in the following analysis and in the next chapter.

East German Foreign Trade by Major Regions:

Table V-1 illustrates the growth of East German imports and exports from 1959 to 1968, both in total and in relation to three different types of country groupings.

Total exports increased by 71.4% between 1960 and 1968, while imports increased by 54.4% in the same period. It should be noted that these increases are larger than the increase in Net Product of all domestic economic sectors (which, we have seen, was about 40%) and greater than the growth of industrial production (52%.) In other words, industrial expansion in East Germany has been accompanied by an even greater expansion in foreign trade.

Increases in exports and imports to socialist countries exceeded the average rate, so that the share of these countries in East Germany's trade increased during this period. In 1960 75.6% of East Germany's exports went to socialist countries. By 1968 this had increased slightly to 76.7%. The corresponding figures for imports are 73.7% in 1960 and 75.5% in 1968. The significance of this is dependent to a large extent, however, on the choice of a base year. If 1962 had been chosen as the base year for imports the share going to socialist countries would have been observed to decline from 79.3% to 75.5% in 1968. The same reversal of trend would be true for exports from 1963 to 1968. In this case even a comparison of 1959 and

TABLE V-1

EAST GERMAN FOREIGN TRADE BY MAJOR REGIONS, 1959 - 1968¹

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
WITH ALL COUNTRIES										
Export Index, 1960 = 100	97.0	100	103.4	107.4	122.9	132.8	139.1	145.2	156.6	171.4
Import Index, 1960 = 100	91.9	100	102.6	109.7	106.2	120.0	128.0	146.5	149.4	154.4
WITH SOCIALIST COUNTRIES ²										
Export Index, 1960 = 100	99.1	100	102.1	112.0	128.4	136.3	137.6	142.9	155.7	173.9
Import Index, 1960 = 100	93.2	100	104.9	118.1	112.3	122.2	126.6	142.7	148.2	158.3
Percent of Total Exports	77.2	75.6	74.7	78.7	79.0	77.6	74.8	74.4	75.2	76.7
Percent of Total Imports	74.7	73.7	75.3	79.3	77.9	75.0	72.8	71.8	73.0	75.5

¹ Data is based on information in Table 2, S.J.D.D.R. 1969, pp. 296-297.

² Socialist Countries include: Albania, Bulgaria, China, Yugoslavia, North Korea, Cuba (after 1962), Mongolia, Poland, Rumania, Czechoslovakia, the U.S.S.R., Hungary, and North Vietnam.

TABLE V-1 Continued

EAST GERMAN FOREIGN TRADE BY MAJOR REGIONS, 1959 - 1968

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
WITH CAPITALIST COUNTRIES ¹										
Export Index, 1960 = 100	93.3	100	100.6	93.8	108.3	123.4	142.6	145.9	154.1	161.4
Import Index, 1960 = 100	90.0	100	96.7	85.9	88.7	114.5	132.2	161.6	155.6	144.8
Percent of Total Exports	19.4	20.2	19.6	17.6	17.8	18.7	20.7	20.3	19.9	19.0
Percent of Total Imports	21.5	22.0	20.7	17.2	18.4	21.0	22.7	24.3	22.9	20.6
WITH UNDERDEVELOPED COUNTRIES ²										
Export Index, 1960 = 100	78.8	100	139.0	97.0	94.1	115.2	149.1	182.4	184.0	175.0
Import Index, 1960 = 100	79.4	100	92.3	87.3	90.6	110.1	130.7	133.9	139.3	137.1
Percent of Total Exports	3.4	4.2	5.7	3.8	3.2	3.7	4.5	5.3	5.0	4.3
Percent of Total Imports	3.8	4.4	3.9	3.5	3.7	4.0	4.4	4.0	4.1	3.9

¹ Includes all non-socialist countries of Europe in addition to Australia, Japan, Canada, New Zealand, and the U.S.A.

² All countries of Africa, Asia and Latin and South America not included in either the socialist or capitalist category.

1968 would indicate a slight decline in the share of exports going to socialist countries. The best that one can say is that this share has remained virtually constant in the past decade.

Both exports and imports to capitalist countries increased by less than the average rate during this period. In particular it might be noted that the growth of imports from these countries was less than the growth of domestic industry in East Germany, so that the dependence of the latter on the former might be said to have declined slightly. Exports, however, increased at a rate in excess of the industrial growth rate (61.4% vs. 52%).

It should also be noted that during some years, especially between 1963 and 1966, exports and imports to and from capitalist countries increased very rapidly, while trade with the socialist countries was almost stagnating. The export and import indexes for capitalist countries also suggest one other interesting possibility. In several periods a lag between export and import growth seems evident. For example, a sharp increase in exports in 1963 led to a sharp increase in imports, in 1964, not in 1963. Further substantial increases in exports in 1964 and 1965 were followed by sharp import increases in 1965 and 1966. Then, a marked slowdown in export growth in 1966 (exports increased by

only 2.3% that year, compared with 15.6% the previous year) did not result in a drop in imports till 1967. In that year imports dropped absolutely while exports continued to grow at a slow but positive rate. It appears that large export gains in a given year may produce reserves of foreign currency which affect import plans only in the following year. An unanticipated drop in exports, as in 1966, does not affect import plans that year, but may force a drastic curtailment in imports in the following year.

Trade with underdeveloped countries forms only a small part of the total. Exports to these countries grew very rapidly in the period from 1964 - 66 (about 94% in that three year period) but import growth lagged far behind. Between 1960 and 1968 the share of total East German exports going to underdeveloped countries increased only from 4.2% to 4.3%, while the share of total imports coming from these countries declined from 4.4% to 3.9%.

More detail on the origin and destination of East German exports is provided in Table V-2. It illustrates the growth of exports to the two major European trading blocs, Comecon for the socialist countries and the European Common Market (EEC) for West Europe.

Exports to the Comecon countries were increased by 78% between 1960 and 1968, compared with only 55% to E.E.C. countries. A similar discrepancy in growth rates between the two blocs is apparent in imports (Table V-3), although for both blocs imports grew more slowly than exports.

Some of the countries enjoying the largest increases in trade with East Germany, like France and Italy, accounted for only a very small part of total trade. The importance of the various countries to East Germany, and the relative change in their importance, is illustrated in Table V-4, where the five leading countries are ranked in order of their share of both East German exports and imports.

Table V-4 indicates that in the period from 1959 to 1968 the U.S.S.R. was by far the most important exporter and importer for East Germany. Its share declined slightly in both sectors but remained above 40% in each instance in 1968. In both exports and imports the share of West Germany, including West Berlin, declined, so that it dropped from second to third place, replaced by Czechoslovakia whose trade with East Germany has grown very rapidly. Poland, whose share of exports in 1959 was considerably higher than its share of imports (8.7% vs. 5.2%) ended up losing its

TABLE V-2

EAST GERMAN FOREIGN TRADE WITH SELECTED GROUPS AND COUNTRIES

INDEX OF EXPORTS: 1960 = 100

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Average Annual % Rate of Change 1960-68

COMECON COUNTRIES¹

All											
Comecon Countries	98	100	107	117	134	142	143	145	159	178	7.5
Albania	138	100	78	58	79	87	104	108	143	133	3.6
Bulgaria	73	100	121	92	142	126	141	153	181	220	10.5
Czechoslovakia	91	100	119	113	120	131	152	161	165	209	9.7
Hungary	93	100	106	119	129	132	134	150	195	205	9.4
Mongolia	55	100	64	50	57	111	167	90	105	130	3.3
Poland	101	100	113	127	136	128	147	152	155	158	5.9
Rumania	99	100	122	114	131	130	139	177	186	185	8.0
U.S.S.R.	102	100	99	118	138	150	142	138	152	169	6.8

¹ Data from S.J.D.D.R. 1967, p. 384, 1965, pp. 389 and 390.

TABLE V-2 continued

EAST GERMAN FOREIGN TRADE WITH SELECTED GROUPS AND COUNTRIES

INDEX OF EXPORTS: 1960 = 100

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Average Annual % Rate of Change 1960-68

E.C.C. COUNTRIES AND WEST BERLIN

All											
E.E.C. Countries	94	100	94	89	103	115	130	136	139	115	5.6
Belgium & Luxembourg	78	100	96	108	108	134	166	162	169	186	8.1
France	150	100	128	114	126	147	187	258	300	400	19
West Germany	-	100	91	83	93	99	109	114	110	127	3.0
West Berlin	-	100	92	107	137	173	178	185	183	183	7.9
Italy	59	100	103	94	106	99	119	152	223	232	11.0
Netherlands	93	100	105	88	107	151	183	163	173	189	8.4

TABLE V-3

EAST GERMAN FOREIGN TRADE WITH SELECTED GROUPS AND COUNTRIES

IMPORT INDEX: 1960 = 100

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Average Annual % Change 1960-68
COMECON COUNTRIES ¹											
All											
Comecon Countries	93	100	111	124	117	128	131	148	154	166	6.5
Albania	106	100	145	110	70	141	139	132	139	141	4.4
Bulgaria	83	100	121	139	133	147	171	198	209	223	10.5
Czechoslovakia	85	100	117	120	116	134	141	157	170	176	7.4
Hungary	88	100	111	106	102	120	133	162	164	183	7.9
Mongolia	156	100	175	84	137	97	132	124	156	189	8.4
Poland	96	100	94	100	100	133	129	142	151	206	9.4
Rumania	63	100	97	84	71	121	140	128	136	149	5.1
U.S.S.R.	96	100	112	130	122	126	126	145	148	156	5.7

¹ Data: S.J.D.D.R. 1967, p. 385, and 1965, pp. 389 and 391.

TABLE V-3 Continued
EAST GERMAN FOREIGN TRADE WITH SELECTED GROUPS AND COUNTRIES

IMPORT INDEX: 1960 = 100											
	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	Average Annual % Change 1960-68
E.C.C. COUNTRIES & WEST BERLIN											
All	97	100	102	88	90	117	131	169	156	138	4.1
E.E.C. Countries	54	100	96	81	48	59	91	149	138	88	-1.4
Belgium & Luxembourg	77	100	152	80	91	125	229	250	210	148	5.0
France	-	100	91	87	86	118	116	160	143	138	4.1
West Germany	-	100	120	123	130	144	164	185	148	121	2.4
West Berlin	84	100	158	99	140	133	201	226	239	273	13.5
Italy	67	100	98	67	84	122	121	137	202	138	4.1
Netherlands											

TABLE V-4

RANK OF COUNTRIES BY SHARE OF TRADE WITH EAST GERMANY
1959 AND 1968

Rank	Country	1959 % of Total	Country	1968 % of Total
Exports				
1	U.S.S.R.	43.9	U.S.S.R.	41.4
2	West Germany (inc. W. Berlin)	10.7	Czechoslovakia	10.6
3	Poland	8.7	West Germany (inc. W. Berlin)	8.8
4	Czechoslovakia	8.1	Poland	7.7
5	Hungary	4.1	Hungary	5.1
Imports				
1	U.S.S.R.	45.8	U.S.S.R.	44.1
2	West Germany (inc. W. Berlin)	11.3	Czechoslovakia	9.7
3	Czechoslovakia	7.9	West Germany (inc. W. Berlin)	8.5
4	Poland	5.2	Poland	6.6
5	Hungary	4.1	Hungary	5.1

export position by 1969 and has become the fourth most important trading partner with East Germany. Hungary increased its share of both imports and exports between 1959 and 1968 and retained its fifth position.

West Germany was the only western country with a substantial share in East German trade throughout the 1960's. For reasons which might be explained by an analysis of trading arrangements between the two Germanies, exports to West Berlin grew much more rapidly than exports to West Germany, while the reverse was true for imports. It seems that West Berlin industry is increasingly dependent on supplies from East Germany.

Exports and Imports by Product Sector

The analysis up to this point has concentrated on the regional and social-political distribution of East German trade. It has shown that the major part of this trade is accounted for by socialist countries in Eastern Europe, primarily the U.S.S.R. and Czechoslovakia. The socialist share of both exports and imports has remained fairly constant, but the share of the Comecon countries has

definitely increased.

Among the capitalist countries only West Germany plays a major role in East German trade. Its share has been declining in the past decade, though in absolute terms there have been substantial increases in both exports and imports.

Having analyzed trade by regional and bloc-sectors we turn now to a product analysis. In Table V-5 the relative contributions of the different product sectors in East Germany to that country's foreign trade have been summarized. Several important observations emerge from this table.

First, in the Exports sector more than half of all exports have come from the Metal Processing Industry which, as we have seen, was also the most rapidly growing industry. Its share of exports exceeds its share of home production by a considerable margin (55.9% to 38.4% in 1968). Its share of both home production and exports has been increasing through the 1960's. In second place is the Primary Industry whose share of exports has been declining (along with its share of home production). The share of Light and Food Industries, on the other hand, does not follow the trend of these industries in the domestic market. In the latter this share decreased during the 1960's while the share of

TABLE V-5
EXPORTS AND IMPORTS BY PRODUCT SECTOR
1960 - 1968¹

Product Sector	1960	1966	1967	1968
Percent				
EXPORTS				
Products of Primary Industry	30.5	24.2	24.3	22.6
Products of Metal Industry	51.8	53.6	53.7	55.9
Products of Light and Food Industry	15.8	19.6	19.3	19.5
Other Products	1.9	2.6	2.7	2.0
TOTAL	100	100	100	100
IMPORTS				
Products of Primary Industry	41.8	36.7	35.4	33.8
Products of Metal Industry	14.4	29.1	30.1	33.2
Products of Light and Food Industry	27.7	22.0	23.3	22.8
Products of Agriculture and Forestry	15.4	11.7	10.7	9.8
Others	0.7	0.5	0.5	0.4
TOTAL	100	100	100	100

¹ Taken from S.J.D.D.R. 1969, Table V, p. 300.

exports was increasing.

In the Imports sector the position of the Metal Processing and Primary Industries are reversed from that in exports. Apparently the poor resource base in East Germany forced the country to devote a high proportion of the funds allocated for imports to raw materials. However, in recent years the importation of investment goods has been growing in significance, as is reflected in the growth of imports by the Metal Industry during the past decade. By 1968 the Metal share of imports was less than one percentage point behind the Primary industry sector.

The share of imports going to the Light and Food industries, and to agriculture, declined during the decade. Since this trend is the opposite of that found in the export sector it would indicate the growing self-sufficiency and even surplus production of the East German economy in these fields.

A more detailed picture of export growth within the fastest growing sector is given in Table V-6. Attention is focused on the export of those products within the Metal Processing sector whose production increased most rapidly during the 1960's (see p. 177).

In the introduction to this analysis it was stated that there might be a considerable correspondence between the growth of a home industry and the growth of its exports. It was also suggested that this correspondence might be even more marked in the case of exports to socialist countries, especially those in Comecon, than in the case of exports going to non-bloc countries.

Table V-6 allows us to test this assumption. Unfortunately it was not possible to derive series of data for the Comecon countries specifically, but it should be noted that in most cases non-Comecon socialist countries (China, Yugoslavia, North Korea, Cuba, and North Vietnam) accounted for less than 10% of the total trade with the socialist bloc. Therefore the term "socialist countries" can be taken in the present context to stand for Comecon members. Exports to these countries can then be contrasted with exports going to members of the West European Common Market (E.E.C.).

It may be observed first of all that during the brief period covered by this analysis, 1964-1967, the export trade of East Germany to all countries increased by 18% (Cf. Table V-1). During that period exports to Comecon countries grew relatively slowly, by only 12%, while exports to E.E.C. countries increased by 20.8% (Table V-2).

TABLE V-6
EXPORT OF SELECTED PRODUCTS OF THE METAL PROCESSING INDUSTRY,
BY COUNTRY GROUPINGS,¹ 1964 - 1967
1000 VALUTA MARK

Country Grouping	All Machines		Machines for Metals		Machines for Food Industry		Measuring Instruments		Electrical Household Appliances		Office Machines		Trucks	
	1964	1967	1964	1967	1964	1967	1964	1967	1964	1967	1964	1967	1964	1967
All Countries	5,428,490	6,963,267	661,518	785,233	79,982	151,163	86,540	34,195	56,774	90,879	296,402	422,419	272,531	500,701
Socialist Countries	4,930,841	6,175,149	587,888	685,242	75,988	122,201	78,493	29,462	42,189	76,390	241,136	372,252	220,975	444,846
E.C.C. Countries	176,811	202,726	35,048	31,277	706	1,552	1,946	813	9,143	8,067	26,880	23,881	14,530	14,991
PERCENTAGE INCREASE IN EXPORTS 1964-1967														
All Countries	28.3		18.7		89.0		-60.5		60.1		42.5		85.9	
Socialist Countries	25.2		16.6		60.8		-62.5		81.1		54.4		101.3	
E.C.C. Countries	14.7		-10.7		119.8		-58.2		-11.8		-11.2		3.2	

¹ Source: S.J.D.D.R. 1967, p. 398, and 1969, p. 313.

Table V-6 indicates that exports of all types of machines from the Metal Processing industry, to all countries, increased considerably faster during this period than exports in general (28.3% vs. the 18% already noted). Even more significant for the testing of our assumption is the fact that the export of these machines to the Comecon (socialist) countries increased more than twice as fast as total exports to these countries (25.2% vs. 12%), while the export of machines to the E.E.C. countries increased less rapidly than exports in general (14.7% vs. 18%). In other words, the socialist portion of the export sector of East Germany's fastest growing industry expanded much more rapidly than the European Common Market portion. This supports the suggestion that changes in East German industry are tied more closely to export demand from socialist countries than to the export demand of non-socialist trading partners.

It is interesting to note that the export of investment-type goods within the Metal Processing sector increased, on the whole, much less rapidly than the export of consumer or "final" goods. Under investment goods one would include the machines produced for other industries, and possibly also measuring instruments. The export of the latter item actually decreased substantially during this period.

"Final products" such as electrical household appliances and office machines were exported to socialist countries at a rapidly growing rate but seemed to find less acceptance in the E.E.C. countries than before 1964.

Table V-7 provides more detail on this subject. Exports to three Comecon countries, the U.S.S.R., Poland, and Czechoslovakia, can be contrasted with exports to the major trading partner within the E.E.C., West Germany. It is also possible to compare the rate of export expansion of various products. This will be done first.

Products 1 - 9 derive from the Metal Processing Industry, products 10 - 11 from the leading sector of the Primary Industry, Chemicals, and products 12 - 14 from Light Industry.

Within the Metals sector the export of capital goods, such as metal cutting machine tools, machines for metallurgy and electro-technical machines (in contrast to electro-technical products) did not increase very rapidly between 1964 and 1968 (with the exception of metal cutting machines to Poland). This, however, is in contrast to the period 1960 - 1964, when exports of these items to the socialist countries increased substantially. The reversal in trend might be due to the expiration of export obligations prior

to 1964, which in turn might reflect the growing ability of the socialist countries to produce their own capital goods more efficiently, and it might also be due to an increasing demand within East German industry for the use of these machines.

The export of chemical products increased more sharply than "final" goods in the Metals sector, while the growth of Light Industry exports is spotty but impressive.

Unfortunately the data permit only a few comparisons between exports going to socialist countries and to West Germany (these goods are: metal cutting machine tools, electronic tubes, and typewriters). In the best example, metal cutting machine tools, exports to West Germany declined between 1960 and 1964, and increased very slightly between 1964 and 1968. Just the opposite pattern was true for most of the socialist countries. Exports of this product to these partners increased substantially in the first period. In the second period exports to the U.S.S.R. declined, to Czechoslovakia they increased slightly, while to Poland they continued to increase at a high rate. In general it can be concluded that in this particular example the expansion of trade with the socialist countries was more substantial and steady than with West Germany.

TABLE V-7
EXPORT OF SELECTED PRODUCTS TO MAJOR IMPORTERS¹

Product and Importing Country	Absolute Amounts			Index (1964 = 100)		
	1960	1964	1968	1960	1964	1968
1) Metal Cutting Machine Tools (1000 VM)						
U.S.S.R.	81,605	135,076	126,100	60.4	100	93.4
Czechoslovakia	32,188	40,607	46,748	79.3	100	115.1
Poland	12,285	31,234	64,304	39.3	100	205.9
West Germany ²	23,797	17,996	18,035	132.2	100	100.2
2) Electronic Tubes (1000 VM)						
U.S.S.R.						
Czechoslovakia						
Poland	3,901	12,897	10,106	30.3	100	78.4
West Germany	656	675	5,210	97.2	100	771.9
3) Typewriters (Units)						
U.S.S.R.						
Czechoslovakia	27,588	39,681	53,407	69.5	100	134.6
Poland	17,321	18,276	21,454	94.8	100	117.4
West Germany (small)	12,359	7,597	15,179	162.7	100	199.8

¹ Source: S.J.D.D.R. 1969, pp. 306-312

² Does not include W. Berlin.

TABLE V-7 Continued

EXPORT OF SELECTED PRODUCTS TO MAJOR IMPORTERS

Produce and Importing Country	Absolute Amounts			Index (1964 = 100)	
	1960	1964	1968	1960	1964 1968
4) Electric Household Appliances (1000 VM)					
U.S.S.R.					
Czechoslovakia	2,891	10,893	8,871	26.5	100 81.4
Poland					
West Germany					
5) Machines for Metallurgy (1000 VM)					
U.S.S.R.					
Czechoslovakia	5,649	28,067	7,684	20.1	100 27.4
Poland					
West Germany					
6) Trucks (Units)					
U.S.S.R.					
Czechoslovakia	3,262	1,720	3,985	189.7	100 231.7
Poland					
West Germany					
7) Tractors and Agricultural Machinery (1000 VM)					
U.S.S.R.					
Czechoslovakia	1,655	155,888	230,447	1.1	100 147.8
Poland	41,508	109,824	106,708	37.8	100 97.2
West Germany					

TABLE V-7 Continued
EXPORT OF SELECTED PRODUCTS TO MAJOR IMPORTERS

Product and Importing Country	Absolute Amounts			Index (1964 = 100)		
	1960	1964	1968	1960	1964	1968
8) Electro-Technical Machines and Products (1000 VM)						
U.S.S.R. (machines)	4,740	41,247	33,097	11.5	100	80.2
Czechoslovakia (products)	10,795	31,599	60,788	34.2	100	192.4
Poland						
West Germany						
9) Optical-Mechanical Instruments (1000 VM)						
U.S.S.R.	23,770	58,971	66,691	40.3	100	113.1
Czechoslovakia	16,043	18,779	33,224	85.4	100	176.9
Poland						
West Germany						
10) Plastic Products (1000 VM)						
U.S.S.R.	22,085	22,227	48,824	99.4	100	219.7
Czechoslovakia						
Poland						
West Germany						

TABLE V-7 Continued

EXPORT OF SELECTED PRODUCTS TO MAJOR IMPORTERS

Product and Importing Country	Absolute Amounts			Index (1964 = 100)		
	1960	1964	1968	1960	1964	1968
11) Pharmaceuticals (1000 VM)						
U.S.S.R.						
Czechoslovakia	3,007	3,965	10,434	75.8	100	263.2
Poland						
West Germany						
12) Glass and Ceramic Products (1000 VM)						
U.S.S.R.	26,905	31,851	37,886	84.5	100	119.0
Czechoslovakia						
Poland	6,793	11,058	13,131	61.4	100	118.8
West Germany						
13) Furniture and Upholstery (1000 VM)						
U.S.S.R.	42,916	264,598	242,895	16.2	100	91.8
Czechoslovakia						
Poland						
West Germany						
14) Toys (1000 VM)						
U.S.S.R.	3,883	42,056	53,316	9.2	100	126.8
Czechoslovakia	4,543	3,061	11,984	148.4	100	391.5
Poland						
West Germany						

Table V-8 helps us to test some of our assumptions about the growth of imports in the period 1960 to 1968. It was stated previously that a growing industrial nation like East Germany might concentrate on the importation of raw materials and capital goods, either to substitute for inefficient resources or to supplement good but inadequate resources in the rapidly growing manufacturing sectors. One might also expect a decline in the importation of consumer goods whose production, we have seen, was increasing rapidly during this period. The analysis might be organized as follows:

1. Under "Replacement Goods for Poor or Inadequate Resources" one might place such items as hard coal, bar steel, and oil (items 1 - 3).
2. Under "Supplementary Investment Goods and Resources" one can place such items as: metal cutting machine tools, machines for Light and Food Industry, Agricultural Machinery, Machines for Metallurgy, and possibly Trucks and Tractors (items 4 - 9). Also included would be items 13 - 14, as support for the rapidly growing Chemical industry.
3. Items 10 - 12 (Typewriters, Household Washing

TABLE V-8

IMPORT OF SELECTED PRODUCTS FROM MAJOR TRADING PARTNERS

Product and Country of Origin	Absolute Amounts			Index (1964 = 100)	
	1960	1964	1968	1960	1968
1. Hard Coal (1000 Ton)					
U.S.S.R.	5,060	6,234	2,830	81.2	45.4
Czechoslovakia	504.2	1,072.2	874.1	47.0	81.5
Poland	2,025	1,929	2,321	105.0	120.3
West Germany	241.0	855.4	167.3	28.2	19.6
2. Bar Steel (Ton)					
U.S.S.R. (Fine)	145	166	252	87.4	151.8
Czechoslovakia	11,693	18,608	8,509	62.8	45.7
Poland (Crude)		811	3,270		403.2
West Germany (Fine)	7,401	1,042	3,305	710.3	317.2
3. Oil (1000 Ton)					
U.S.S.R.	1,811	3,979	7,538	45.5	189.4
Czechoslovakia					
Poland					
West Germany					

TABLE V-8 Continued

IMPORT OF SELECTED PRODUCTS FROM MAJOR TRADING PARTNERS

Product and Country of Origin	Absolute Amounts			Index (1964 = 100)	
	1960	1964	1968	1960	1964
4. Metal Cutting Machine Tools (1000 VM)					
U.S.S.R.	427	12,217	51,975	3.5	100
Czechoslovakia	15,172	49,774	41,259	30.5	100
Poland	2,270	7,296	26,454	31.1	100
West Germany	7,140	8,989	5,631	79.4	100
					425.4
					82.9
					362.6
					62.6
5. Machines for Light and Food Industry (1000 VM)					
U.S.S.R.					
Czechoslovakia (only Food)	716	1,286	14,774	55.7	100
Poland		3,650	18,185		100
West Germany					1148.8
					498.2
6. Agricultural Machinery (1000 VM)					
U.S.S.R.					
Czechoslovakia		6,860	5,281		100
Poland					77.0
West Germany					
7. Machines for Metallurgy (1000 VM)					
U.S.S.R.					
Czechoslovakia	4,568	3,803	5,190	120.1	100
Poland					136.5
West Germany					

TABLE V-8 Continued

IMPORT OF SELECTED PRODUCTS FROM MAJOR TRADING PARTNERS

Product and Country of Origin	Absolute Amounts			Index (1964 = 100)	
	1960	1964	1968	1960	1968
8. Trucks (Units)					
U.S.S.R.		662	3,549	100	536.1
Czechoslovakia		818	670	100	81.9
Poland	419				
West Germany					
9. Tractors (Units)					
U.S.S.R.	1,308	167	3,099	100	1855.7
Czechoslovakia	970	714	298	100	41.7
Poland					
West Germany					
10. Typewriters (Units)					
U.S.S.R.		(in 1965)			
Czechoslovakia		21,389	22,942	100	107.3
Poland					
West Germany					

TABLE V-8 Continued

IMPORT OF SELECTED PRODUCTS FROM MAJOR TRADING PARTNERS

Product and Country of Origin	Absolute Amounts			Index (1964 = 100)		
	1960	1964	1968	1960	1964	1968
11. Household Washing Machines (Units)						
U.S.S.R.						
Czechoslovakia	34,292	79,955	49,630	42.9	100	62.1
Poland						
West Germany						
12. Electro-Technical Products (1000 VM)						
U.S.S.R.	18,343	39,020	47,617	47.0	100	122.0
Czechoslovakia						
Poland						
West Germany						
13. Phosphorous Raw Materials (1000 Ton)						
U.S.S.R.	181	288	429	62.9	100	149.0
Czechoslovakia						
Poland						
West Germany						
14. Titanium Dioxide (Titanioxiid) (Ton)						
U.S.S.R.						
Czechoslovakia						
Poland						
West Germany	1,192	1,947	5,945	61.2	100	305.3

Machines, and Electro-Technical Products)

might be classified as consumer goods.

In line with our previous assumptions one would expect the importation of items 1 - 9 and 13 - 14 to expand at a substantial rate, and especially more quickly than items 10 - 12. With the exception of a few items in the first list, such as bar steel, hard coal, and metal cutting machines from Czechoslovakia, the growth rate of imports generally supports these assumptions. Hard coal imports grew very rapidly between 1960 and 1964 but the rate has slackened considerably since then, perhaps because of the rapid expansion of oil imports from the U.S.S.R. The importation of crude and fine bar steel has increased at a very high rate. Machines for use in growing industries in East Germany were also imported at an increasing rate. The decline in the importation of agricultural machinery corresponds to the relative decline of that sector within the economy.

In the few cases where the data permits comparisons between imports from West Germany and the major socialist partners, it is not easy to detect any clear pattern. Hard coal imports from Germany declined more rapidly than from the socialist countries in 1964 - 1968, but they

had grown more rapidly between 1960 and 1964. In the case of bar steel almost the opposite is true. Imports from West Germany of this product had declined sharply between 1960 and 1964, but increased very rapidly after 1964, more so than imports of the same fine bar steel from the U.S.S.R.

In the case of metal cutting machine tools, imports from the U.S.S.R. and Poland increased much more rapidly than from West Germany during the whole of the period 1960 to 1968.

Overall it would seem that in these vital products, East Germany's imports from its socialist partners tended to increase more rapidly than its imports from West Germany during most of the period.

In general it may be said that in the period covered by this analysis, the expansion of the foreign trade sector in East Germany tended to correspond to the varying rates of growth of different sectors within the economy. In particular, those sectors in East German industry which expanded most rapidly, notably Metals, also increased their exports at a rate considerably above the average. The exports of the fastest growing subsectors within the Metals Industry grew at high but varying rates.

Consumer or final goods moved into the export market at a much faster rate than investment goods, reflecting either the growing needs of the home industry for the latter, or (and perhaps both) the rapid growth of capital goods production within other socialist countries. Exports of some consumer goods to E.E.C. countries, however, declined during the same period.

In general the Comecon countries were more heavily involved in the export of these goods emanating from the most rapidly expanding industrial sector in East Germany than were the E.E.C. countries. This despite the fact that in the period 1964 - 1967 total exports to the E.E.C. countries expanded more quickly than exports to Comecon partners. This supports the assumption that the expansion of East German industry (and therefore structural changes in industry) may be related to its export relations with the Comecon countries in a more decisive way than to its relations with the European Common Market countries. To scholars in Eastern Europe this may seem obvious, but it is still an assumption worth testing.

The import picture shows that East Germany substantially increased its imports of those investment and resource goods which could substitute for, or supplement, resources and

and investment goods at home, The importation of consumer goods increased more slowly. While the data was not adequate to confirm this, it suggested that the importation of those investment and resource items which were generally tied to rapidly expanding industrial sectors in East Germany increased more rapidly from socialist countries than from West Germany.

B. STRUCTURAL CHANGES AND REGIONAL ECONOMIC DEVELOPMENT

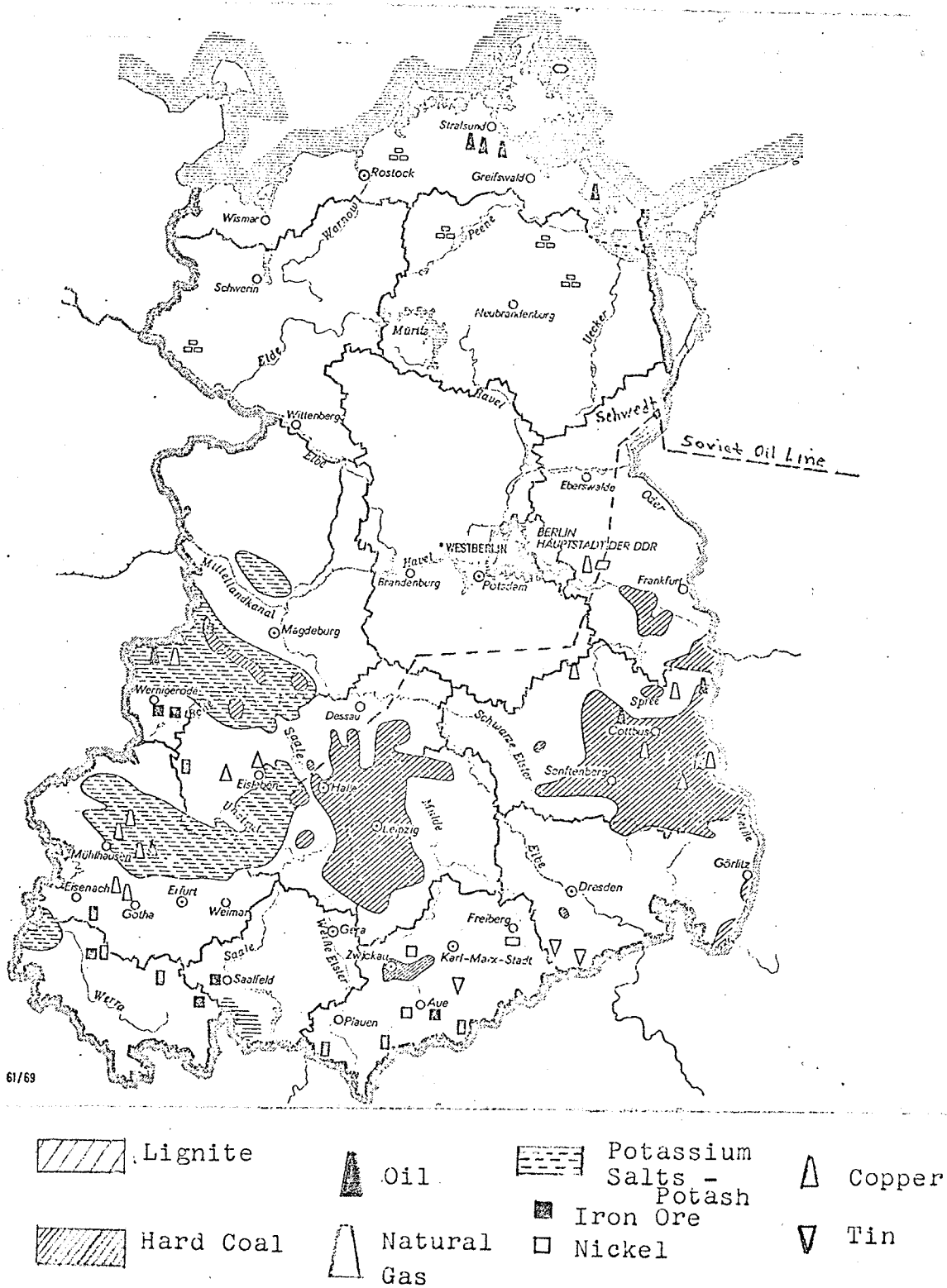
Like most nation states East Germany is divided into regional units. The major unit is the district (Bezirk), of which there are fifteen. In this section we propose to examine the impact of the type of structural changes just noted on the economies of these districts.

The economic development of any region within a country depends on a number of factors, such as the resource base of the region, population changes, the degree of accessibility to consumer markets, and the nature and level of previous economic development.

The resource base is especially important for such primary industries as fuel and energy, heavy industry, mining and agriculture. Figure V-1 illustrates the resource pattern of East Germany and shows very clearly the marked disparities

Figure V-1.

RESOURCE DISTRIBUTION IN EAST GERMANY



between different regions in the country, especially between the north and the south. The extreme south is characterized by such mineral resources as nickel, lead, zinc, pewter, uranium, hard coal and iron ore, all very important for both light and heavy industry. North-east, in the Cottbus region, lie the large fields of lignite coal, the support of fuel, energy, and heavy industry. West of this, in Halle, Erfurt, and Magdeburg are the major resources for the chemical industry. In contrast to these southern regions the area north of Berlin is almost bare of those resources which have proven to be so important for the development of primary industry. For this type of industry, then, the resource base limits some regions in their development and gives unique opportunities to others.

Other industries, like construction, may depend more on the general rate of economic activity and on population growth for their development. Still others, such as precision tools and electro-technical goods, depend primarily on technology, which in itself is a mixture of availability of resources and special skills. To the extent that technology depends on resources certain regions will again be favored, but to the extent that it depends upon the development of special skills all regions can share in the growth of the economy.

Accessibility to domestic and foreign markets is based partly, like resources, on geographical factors. These again are "given" to some extent and favor some regions above others. However, through the development of new transportation and communication systems and the growth of population the effective market for a particular region can be changed considerably over time. Therefore this too is to some extent a variable factor whose change can alter the course of a region's economic development.

Whether or not a particular region will be able to alter the course of its previous development will depend on its rate of participation in those sectors and products in the economy which are expanding their production most quickly, both for the domestic and the foreign market. Its rate of participation may depend partly on its past rate (e.g. the degree to which it was previously industrialized) and partly on the growth of such variable factors as technology, population, and new forms of communication and transportation within its boundaries.

In other words, the extent to which past regional

disparities¹ are overcome, and new ones created, in a given period of time may depend partly on: (1) the nature of the region's economic structure at the beginning of the period, and (2) the introduction of new techniques, markets and industries during the period.

The first condition implies that those regions whose economies were geared to the most rapidly expanding sectors of the economy (e.g. industry and construction) and to the most rapidly expanding industrial sectors (e.g. Metal Processing) at the beginning of the period would, *prima facie*, enjoy an edge in their potential for economic growth in the ensuing period. The extent to which this proved to be true will be examined shortly.

The second condition has been introduced to help explain possible departures from past patterns of economic developments (as suggested by the first condition). Our concern will be with those districts which departed from

¹ Regional disparity is often measured in income terms, meaning the difference between average per capita incomes in different regions of a country. Such data is not available by regions for East Germany. Consequently we have defined regional disparity for this country in terms of production potential: the degree to which a particular region, relative to others, participates in the most rapidly developing production sectors of the economy and the rate at which it is able to increase its overall production by participation in these sectors.

their initial economic structure, either by decreasing or increasing their relative share of the most rapidly growing sectors. In this section we will examine how such changes were accomplished. In the next chapter the relationship between such changes and economic planning will be analyzed.

Presumably, in a planned socialist economy, any substantial shifts in the structure of a region's economy may be attributed at least in part to the policies of the planners. The encouragement of certain industries, through the allocation of productive factors, the introduction of new techniques and the expansion of markets will be influenced by such policies. These measures in turn may have profound effects on regional economies, and they may either alleviate or aggravate past disparities. It seems somewhat strange, then, that very little attention has apparently been given by socialist economists to these regional implications of central planning. The writer is not aware of any treatment similar to that undertaken here, although it is clear from the presentation of data in the statistical yearbooks that the regional structure of the East German economy is considered important by state planners.

The first problem we wish to examine here is the impact of a region's economic structure at the beginning

of a period on its subsequent development. The question can be phrased as follows: to what extent did a region's initial participation in the most rapidly expanding economic and industrial sectors determine its economic growth in the subsequent period?

It was observed previously (see Figure IV-3) that industry and construction grew more rapidly than any other East German economic sector in the period 1960-68. Since, in all regions, industry was much more important in terms of its share of total production and employment than construction (see Table V-9), one might have guessed in 1960 that subsequent development would depend at least partly on the degree of industrialization in a particular region.

Table V-9 indicates that in 1959 in every district but two (Neu Brandenburg and Schwerin) industrial production accounted for more than 50% of total production. By 1967 this had also become true of Schwerin. In this sense virtually every district in East Germany must be considered an industrial district. By 1967 industry had become the single most important sector even in the district of Neu Brandenburg.

What we are interested in, however, is the degree of industrialization within each district. Three separate

TABLE V-9

PERCENT OF EMPLOYMENT AND GROSS PRODUCT IN EACH
DISTRICT BY MAJOR ECONOMIC SECTOR

1959 and 1967

District	Year	% of Employment and Output in all Sectors	Industry		Construction		Agriculture		Transportation and Communication		Others	
			% of Employment	% of Output	% of Employment	% of Output	% of Employment	% of Output	% of Employment	% of Output	% of Employment	% of Output
Rostock	1959	100	19.8	51.4	7.7	9.4	28.2	20.3	8.0	5.0	36.3	13.8
	1967	100	20.6	51.0 ¹	7.2	11.4	22.0	18.7	9.9	6.1	40.3	12.8 ²
Schwerin	1959	100	14.0	47.5	5.8	7.1	39.0	28.3	7.4	2.8	33.8	14.2
	1967	100	16.0	51.2	5.2	7.5	33.3	27.1	8.2	1.5	37.3	12.7
Neu Brandenburg	1959	100	9.1	36.3	6.0	9.1	48.6	41.7	5.7	3.2	30.6	9.6
	1967	100	11.0	41.1	6.3	10.5	41.4	35.1	6.1	1.7	35.1	11.6

¹ Industry output data for 1967 includes productive handicrafts, except building handicrafts.

² Non-producing sectors have been omitted for 1967, so the percentages are generally lower for the "Others" section.

Sources: Employment Data: S.J.D.D.R. 1960/61, p. 10;

S.J.D.D.R. 1968, p. 108

Output Data: S.J.D.D.R. 1960/61, p. 10;

S.J.D.D.R. 1969, p. 92.

TABLE V-9 Continued

PERCENT OF EMPLOYMENT AND GROSS PRODUCT IN EACH
DISTRICT BY MAJOR ECONOMIC SECTOR
1959 and 1967

District	Year	% of Employ- ment and Out- put in all Sectors	Industry		Construction		Agriculture		Transportation and Communication		Others	
			% of Employ- ment	% of Output	% of Employ- ment	% of Output	% of Employ- ment	% of Output	% of Employ- ment	% of Output	% of Employ- ment	% of Output
Potsdam	1959	100	24.3	56.5	6.5	7.8	28.6	18.0	6.3	2.6	34.3	16.0
	1967	100	26.9	64.2	4.9	6.7	23.3	16.9	6.7	1.5	38.3	10.8
Frankfurt	1959	100	20.1	56.6	8.5	9.6	30.6	19.9	7.8	2.9	33.0	11.2
	1967	100	21.4	63.4	9.7	12.0	23.8	15.0	8.1	1.8	35.0	7.7
Cottbus	1959	100	34.0	59.0	7.6	10.3	24.9	14.3	7.0	2.7	27.4	13.7
	1967	100	36.0	64.7	8.2	13.2	18.1	12.1	7.5	1.7	30.1	8.3
Magdeburg	1959	100	28.1	62.7	5.7	6.2	26.4	15.8	7.5	2.1	32.3	13.3
	1967	100	27.9	62.2	7.1	12.4	23.0	15.3	8.1	1.2	34.0	8.8
Halle	1959	100	42.7	74.5	5.8	4.7	15.4	7.6	6.0	1.8	30.1	11.5
	1967	100	42.6	76.0	6.0	6.9	13.8	8.0	5.9	1.2	31.6	8.8
Erfurt	1959	100	34.9	66.1	5.1	5.5	22.2	11.1	5.8	2.2	32.0	15.1
	1967	100	36.0	68.3	6.1	9.0	18.3	11.6	5.7	1.4	33.9	9.7

TABLE V-9 Continued

PERCENT OF EMPLOYMENT AND GROSS PRODUCT IN EACH
DISTRICT BY MAJOR ECONOMIC SECTOR
1959 and 1967

District	Year	% of Employ- ment and Out- put in all Sectors	Industry		Construction		Agriculture		Transportation and Communication		Others	
			% of Employ- ment	% of Output	% of Employ- ment	% of Output	% of Employ- ment	% of Output	% of Employ- ment	% of Output	% of Employ- ment	% of Output
Gera	1959	100	42.7	73.5	4.3	4.2	16.9	8.5	5.0	2.2	33.1	11.6
	1967	100	42.9	78.3	3.9	4.9	14.2	8.3	5.4	1.6	33.6	6.9
Suhl	1959	100	40.8	66.6	3.9	4.2	19.5	8.3	4.1	2.4	31.7	18.5
	1967	100	42.0	74.8	4.0	6.3	13.5	8.2	5.2	1.8	35.3	8.8
Dresden	1959	100	42.3	73.4	5.0	4.5	12.5	6.5	6.3	2.2	33.9	13.5
	1967	100	43.5	78.0	3.9	4.9	11.0	7.0	6.5	1.4	35.2	8.6
Leipzig	1959	100	41.5	69.9	5.3	5.3	11.9	7.5	6.6	2.3	34.7	15.1
	1967	100	39.4	72.1	5.5	8.2	11.4	8.2	6.9	1.5	36.8	10.0
Karl-Marx Stadt	1959	100	51.4	75.1	4.1	4.0	8.8	4.6	5.1	2.0	30.6	14.3
	1967	100	49.9	80.4	3.7	5.0	7.8	5.3	5.8	1.4	32.9	8.0
East Berlin	1959	100	30.4	64.2	8.5	9.0	1.4	0.8	10.8	4.1	48.9	21.8
	1967	100	28.6	70.9	9.3	9.9	1.8	1.6	12.2	1.6	48.1	16.0

categories have been established for this purpose.

In category A we place those districts in which industry's share of total production in 1959 was more than 65%. These might then be called the Highly Industrialized regions of East Germany.

Category B includes those districts in which industrial production in 1959 accounted for between 55-65% of total production in 1959. These might be considered the Medium Industrialized regions.

Category C includes those districts in which industrial production accounted for less than 55% of total production in 1959. These can be considered the Least Industrialized regions of East Germany.

This categorization of regions is illustrated in Figure V-2. Category A the most highly industrialized region, is shown in red, category B in brown, and category C in orange. Our previous look at Figure V-1 might have prepared us for the result, and illustrates the great importance of resources for industrialization. The movement from high to low industrialization, as of 1959, is a movement from South to North in East Germany.

Having established this basic pattern of industrialization for the country as a whole in the base year 1959, we can

Figure V-2.

DEGREE OF INDUSTRIALIZATION BY
DISTRICT, 1959

Staatsgrenze (State
Boundary)

Distrikts-grenze (District
Boundary)

Districts:

- 1 Hauptstadt Berlin
- 2 Rostock
- 3 Schwerin
- 4 Neubrandenburg
- 5 Potsdam
- 6 Frankfurt
- 7 Cottbus
- 8 Magdeburg
- 9 Halle
- 10 Erfurt
- 11 Gera
- 12 Suhl
- 13 Dresden
- 14 Leipzig
- 15 Karl-Marx-Stadt



High Industrialization: 
Medium Industrialization: 
Low Industrialization: 

go on to examine the kind of changes that have occurred to disrupt the pattern in the 1960's.

Table V-11 at the end of this section illustrates the relative growth of the different regions after 1959 by showing their degree of participation in the production of various economic sectors in 1959 and 1967. For example, an increase in the share of gross industrial production from 2.8% to 3.0% by the district of Rostock between 1959 and 1967 means that this district increased its industrial production by more than the average rate during this period.¹

A change in the share of gross output for "All Sectors" means that a given district's total economy grew or declined relative to others during the period. In the following analysis we speak of "growing" or "declining" districts in this relative way.

¹ Actually the data must be interpreted somewhat cautiously. The results shown in Table V-11 are based directly on the East German statistical yearbooks, but these same yearbooks, in other places, give data which sometimes lead to contradictory conclusions. Thus the data used for Table V-12 produces rates of growth for Rostock and Gera which are slightly below average, and which should consequently have shown a decline in their share of industrial production. The problem lies in the fact that the data for Table V-11 is sometimes given in terms of current prices, while that for Table V-12 is given in constant planning prices. As long as these minor discrepancies are kept in mind the following analysis is not affected too much.

Such changes are illustrated in Figure V-3.

The vertical lines indicate those districts whose share of total economic output increased between 1959 and 1967 while the horizontal lines represent those districts whose share declined. The results are somewhat surprising. Those districts categorized as B and C on the basis of their initial degree of industrialization uniformly increased their share of total production during this period, while most of the districts in category A had a declining share. We assumed before that those regions whose economies were geared to the most rapidly expanding sectors would, *prima facie*, enjoy an edge in their potential for economic growth. Instead, the least industrialized regions on the whole grew more rapidly than the others. They did this primarily by increasing their share of industrial production.

This is supported by other data in Table V-11 , which is summarized in columns 3 - 6 of Table V-10 . These columns show that all of the districts in category B and C increased their share of gross industrial production¹, while in the A category only Erfurt and Suhl, and possibly Gera, did the same.

Adding up the negatives of columns 3 - 6 (indicating

¹ With the possible exception of Rostock, Cf. f.n. 1, p. 294.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

[illegible]

Abstract

TABLE V-10
SUMMARY OF PRODUCTION AND POPULATION DATA

FOR DISTRICTS, 1959 - 1967

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|-----------------|----------------------------------|--|--|--|---|---|------------------------------------|--------------------------------|--|---|-----------------|------------|-------------------|-----------|--------|-----------------|
| District | 1959 Degree of Industrialization | Change in share of Gross Output 1959-1967 | Change in share of Industrial Output 1959-1967 | Change in share of Agricultural Production 1959-1967 | Change in share of Transportation and Communication 1959-1967 | % Growth in Industrial Production 1959-1967 | % Growth in Construction 1960-1967 | Change in Population 1960-1967 | Major Industrial Sector by % of Total Output in District 1959-1967 | Change in share of Production of Seven Fastest Growing Subsectors - 1961 - 1967 | | | | | | |
| | | Change in share of Industrial Output 1959-1967 | Change in share of Construction Output 1959-1967 | Change in share of Agricultural Production 1959-1967 | Change in share of Transportation and Communication 1959-1967 | % Growth in Industrial Production 1959-1967 | % Growth in Construction 1960-1967 | Change in Population 1960-1967 | Major Industrial Sector by % of Total Output in District 1959-1967 | Electro-nic Technical | Precision Tools | Metal-ware | General Machinery | Chemicals | Energy | Heavy Machinery |
| Berlin | C | + | + | - | + | 56.1 | 45.8 | + | M | - | + | 0 | - | 0 | - | + |
| Schwerin | C | + | - | + | - | 75.9 | 26.1 | - | P | 0 | + | - | - | 0 | + | - |
| Neu Brandenburg | C | + | + | + | 0 | 94.2 | 46.4 | + | P | - | + | + | - | 0 | + | - |
| Potsdam | B | + | + | + | + | 69.2 | 4.7 | + | M&P | - | + | - | - | + | + | - |
| Frankfurt | B | + | + | + | + | 130.7 | 76.4 | + | P | + | + | + | + | 0 | + | + |
| Cottbus | B | + | + | + | + | 58.5 | 43.7 | + | P | 0 | - | - | - | 0 | + | + |
| Masdeburg | B | + | + | + | + | 58.6 | 120.1 | + | M | - | - | - | - | 0 | + | + |
| Halle | A | + | + | + | + | 54.2 | 53.7 | + | P | - | + | + | + | + | + | + |
| Erfurt | A | + | + | + | + | 72.6 | 77.1 | + | M | - | + | + | + | + | + | + |
| Magdeburg | A | + | + | + | + | 51.6 | 24.5 | + | M&L | - | - | - | - | + | + | + |
| Gera | A | + | + | + | + | 51.6 | 24.5 | + | M | - | - | - | - | + | + | + |
| Suhl | A | + | + | + | + | 54.5 | 49.8 | 0 | M | - | - | + | + | + | + | + |
| Dresden | A | - | + | - | - | 50.4 | 11.1 | - | M | + | - | - | 0 | + | - | - |
| Leipzig | A | - | + | - | - | 36.3 | 52.0 | - | M | + | - | - | + | + | - | - |
| Karl Marx Stadt | A | - | - | - | - | 55.1 | 24.7 | - | M | - | - | + | + | - | + | - |
| East Berlin | B-A | - | - | + | - | 52.5 | 47.1 | + | M | - | - | + | - | - | - | - |

1 A = More than 65% of Gross Output is industrial

B = 55-65% of Gross Output is industrial

C = less than 55% of Gross output = industrial

2 (+) = increase in share

(-) = decrease

0 = no change

3 M = Metals Processing Industry; P = Primary Industry

L = Light Industry; F = Food Industry (Listed in order of rate of growth, 1959-1968). By "Major Sector" for each district is meant that sector which accounted for at least 1/3 of Gross Industrial Production in its district and a greater percentage than any other sector. In two districts no sector accounted for more than 1/3 of production so the two largest sectors were chosen to represent the district.

4 Source of Data is S.J.D.D.R. 1962, P. 7, and S.J.D.D.R. 1964, P. 83.

a decline in the share of each district in the four major sectors: industry, construction, agriculture, and transportation and communication produces the following result: The B and C districts have only six negatives (declines) distributed among seven districts, or less than one decline per district. The A districts, on the other hand, have twenty-six negatives (declines) among eight districts, or more than three declines per district. It should be noted that Berlin is included in the A group for this purpose. It was actually in the B group in 1959 but its industrial growth in the 1960's (though not strong enough to increase its share of industry) brought it into the A category by 1967. No other district, by the way, shifted from one category to another, despite the relative changes just noted.

These results indicate a rather significant change in the regional structure of East Germany between 1959 and 1967. Increases in the share of industrial production, and in the share of several other sectors, permitted the least industrialized regions to increase their share of total economic output.

This analysis can now be extended by examining the impact of structural changes within the industrial sector on regional development. We have seen that the degree of industrialization in the base year 1959 provided no clue upon

which to base predictions of the rate of growth of the various districts in the 1960's, even if one had known in advance that industry would be the fastest growing sector. The rate of increase in industrial activity by each district was the crucial factor and this, strangely enough, was almost related inversely to the initial degree of industrialization.

One might also have assumed that those districts which in 1959 had the major part of their industrial production in the fastest growing industrial sectors would have enjoyed the most substantial output growth in the 1960's. Again, the actual picture is more complicated than that.

We have seen previously (p. 176) that the major industrial sectors grew in the following order during the 1960's. 1. Metals, 2. Primary Industry, 3. Light Industry, and 4. Foods. One would expect, therefore, that those districts which increased their share of total economic output (and total industrial production) during this period, would have been characterized in the base year by high participation in the leading sectors, above all, in the Metal Processing Industry. Figure V-4 shows, however, that this was not always so. In this map each district is categorized on the basis of the leading industrial sector within the district in 1959. In most cases the leading

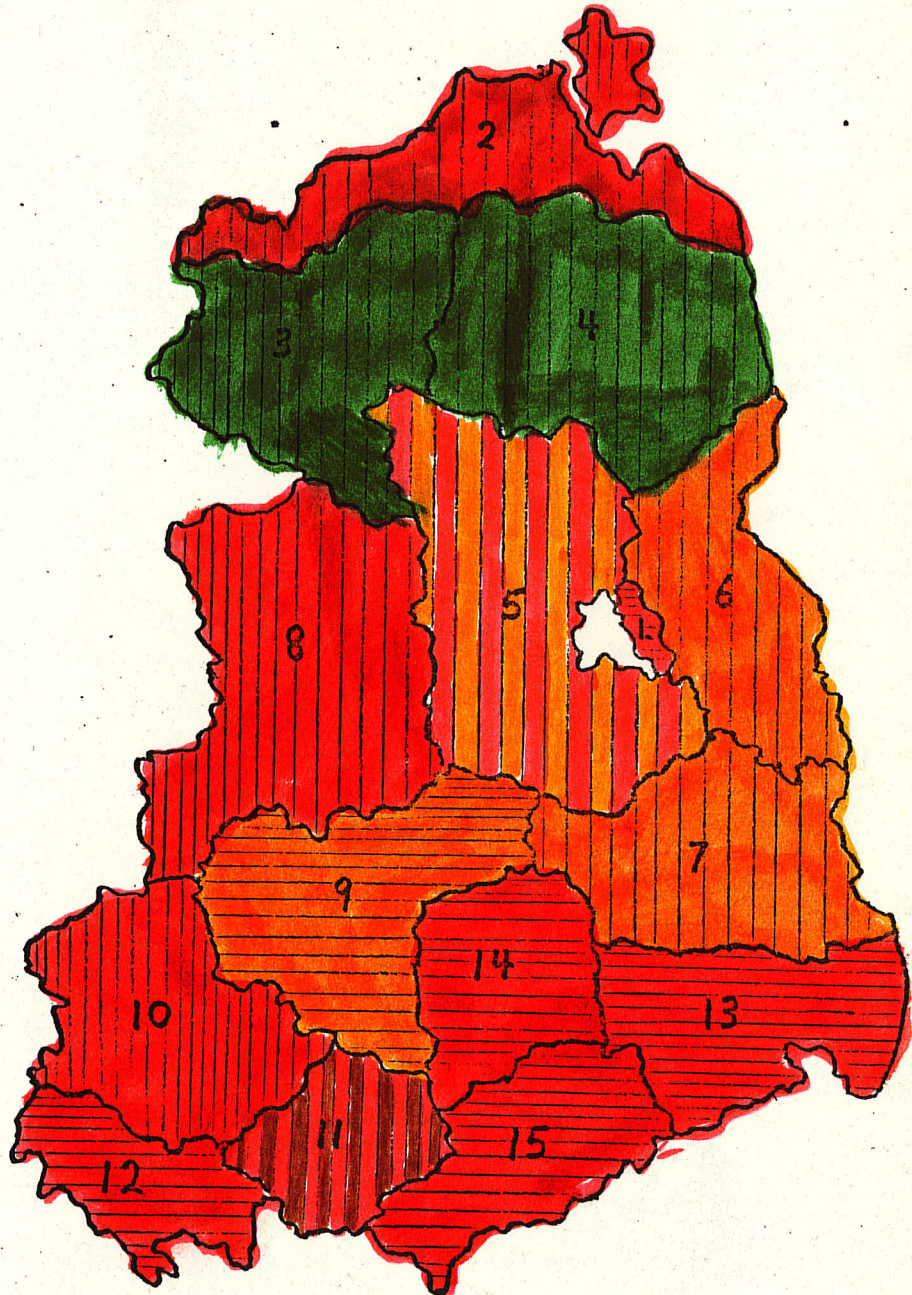
Figure V-4

300

Districts:

Hauptstadt Berlin
 Oststock
 Schwerin
 Neubrandenburg
 Potsdam
 Frankfurt
 Cottbus
 Magdeburg
 Halle
 Erfurt
 Jena
 Wehl
 Dresden
 Leipzig
 Karl-Marx-Stadt

CLASSIFICATION OF DISTRICTS BY MOST
 IMPORTANT INDUSTRY SECTOR, 1959



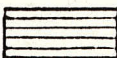
Metal Processing Industry: 

Primary Industry: 

Light Industry: 

Food Industry: 

Increase in Share: 

Decrease in Share: 

sector was significantly more important than any other, accounting for more than one third of total industrial production. In two cases no single sector was that significant and the two leading ones were chosen to represent the district.

In four of the nine "growing" districts the Metals industry was not one of the leading sectors, while in four of the five "declining" districts (again, "declining" in terms of the share of total output) it was. In two of the growing districts the least rapidly growing industrial sector, the food processing industry, was the major sector.

Once again, the significant fact is not the initial degree of participation in the fastest growing industrial sectors, but the increase in the rate of growth of these sectors within each district that counted. On the whole those districts in which the fastest growing sectors were not too important in 1959 increased their production in these sectors just as much, and in several cases even more, than the districts in which these sectors were extremely important.

Table V-10 , Columns 10 - 17, tells us more about the relative growth of each district with regard to the fastest growing industrial subsectors. We discover there that regardless of which industrial sector characterized the industry of each district in 1959, unusually strong (or slow)

growth in some of the leading subsectors during the 1960's accounts for the overall economic growth of the district. The negative and plus signs in these columns indicate whether the share of each industry in the particular subsector decreased or increased between 1961 and 1967, the years for which comparative data was available. The subsectors are ordered horizontally in terms of their rate of growth, in descending order from left to right.

Table V-13 supplements these results by showing the rates of growth in all of the subsectors in the Metals and Primary sectors by those districts which accounted for over half the total production of these subsectors. This tells us how individual districts increased their production of those goods in which they played a leading role during the 1960's.

Our main concern is with those districts in which there were substantial shifts in the share of total economic output and industrial production. In the next chapter we will examine the extent to which such shifts were "accidental" (i.e. caused by the same type of market changes and technological factors that characterize capitalist economies) and to what extent they may have been the result of deliberate regional planning on the part of the central and regional planning agencies.

The four districts showing the greatest percentage increase in their percentage share of gross output for all sectors between 1959 and 1967 were: (in descending order)

1. Frankfurt
2. Neu Brandenburg
3. Cottbus
4. Potsdam

The four districts showing the greatest percentage decrease in their percentage share of gross output for all sectors in the same period were:

1. Leipzig
2. East Berlin
3. Dresden
4. Karl Marx Stadt

With the help of Tables V-10 - V-14 we can now examine the apparent reasons for the significant shifts in these districts.

I. Growing Districts (as defined above):

1. Frankfurt: This district had the greatest increase in industrial production (130.7%), accounted for by very large increases in electro-technical products (310%) and chemicals (315%). In the former it jumped from 12th to 7th place in

production and in the latter from 8th to 4th place. These increases, together with smaller increases in general and heavy machinery, far outweighed the relative declines in precision tools and optics, metalwares, and energy.

2. Neu Brandenburg: This least industrialized of all districts increased its share of precision tools-optics and energy so substantially that the increases more than compensated for relative declines in electro-technical, metalwares, and general and heavy machinery.
3. Cottbus: The overall growth of this district is rather surprising in view of its substantial involvement in the declining lignite industry. However, it greatly increased its share of metalwares and energy production, both of which were rapidly growing subsectors in the whole economy. The latter, of course, is heavily dependent on lignite production and represents an efficient utilization of the product. Energy production in Cottbus increased by 213.2% between 1961 and 1967, making it the leading energy producer in East Germany. Increases here more than compensated for a substantial relative decline in

general machinery production and lesser declines in the share of heavy machinery and precision tools and optics.

4. Potsdam: In this district very substantial increases in precision tools and optics (172.5%) and lesser increases in the shares of metalwares and energy more than compensated for relative declines in the electro-technical, chemical, and general and heavy machinery fields.

II. Declining Districts (as defined above):

1. Leipzig: This district experienced rather substantial relative declines in three important fields: precision tools and optics, metalwares, and energy. In the first field it increased production by about 53%, considerably below the 82.9% increase for the whole industry. In metalwares it increased production 43.9%, below the 60.6% average increase for the industry, and in energy it raised production by only about 5% compared with the industry average of 47.0%. These relative losses were sufficient to offset the relative gains made in heavy machinery, electronic-technicals and in general machinery.

2. East Berlin: This district suffered an overall loss in its relative position because it did not grow by an average rate in such important fields as precision tools and optics, general machinery, and energy. Its relative losses here more than offset relative gains in electronic-technical, metalwares, and heavy machinery.
3. Dresden: This district increased its production in the fastest growing subsector, electronic-technical, by only 39% in this period, while the average increase was 70.8%. Its growth in energy and heavy machinery was also considerably below the average, more than offsetting relative increases in such subsectors as metalwares, chemicals and vehicles. It was the only district which lost its relative position in all of the sectors noted in Table V-10.
4. Karl Marx Stadt: Its relatively slow growth in electro-technical, precision tools, vehicles and heavy machinery offset relative gains in metalwares, general machinery and energy.

The relative gains and losses of these eight districts in the years 1959 - 1967 were substantial

enough to warrant further consideration. In the next chapter the relationship between these shifts and economic planning will be examined specifically.

One possible cause of the shifts, probably not related to planning, is that of population growth. Table V-12 provides an index of such growth for the years 1960-64 and 1965-67. Gains or losses for these periods are summarized for each district in Table V-10, column 9. On the whole there seems to be a positive correlation between population growth and the rates of economic growth just observed.¹ In all of the growing districts population expanded in at least one of the two periods, while in three of the four districts which had the greatest relative decline it declined or stagnated in both periods. In view of the extreme labor shortage in East Germany, and in light of the fact that some of the most rapidly expanding industries in East Germany are considered labor-intensive (e.g. precision tools and optics, and electro-technical) this result is not very

¹ The structure of the population, including the age distribution, is also significant. In 1967 growing districts like Rostock, Frankfurt, Cottbus, Potsdam and Neu Brandenburg had more than 25% of their population in the under 15 years bracket, and less than 18% in the retired bracket (over 65 years for men and 60 for women). In East Berlin, Dresden, Leipzig, and Karl-Marx-Stadt the under-15 share of total population was less than 22% and the retired share more than 20%. (S.J.D.D.R. 1968, p. 517).

surprising.¹

To summarize the general results of this section, we have discovered that the initial degree of participation by the various districts in the most rapidly growing economic and industrial sectors and subsectors does not provide a good explanation of their subsequent growth in the 1960's. What this means is that fairly significant shifts from previous patterns of industrialization took place. While the shifts were not large enough to move any of the districts to a substantially higher level of industrialization (with the exception of Berlin, which was close to category A in 1959, no district shifted from one industrial category to another as defined in Column 1 Table V-10) the rates of growth of eight districts were sufficiently below or above the average rate of growth to warrant further examination. Specifically, we will attempt to evaluate the extent to which these shifts - which are really tantamount to regional structural changes - were the result of deliberate government planning. This is done in the next chapter where the general relationship between planning and structural changes in the East German economy is analyzed.

1 At the same time it should be noted that precisely the growing districts de-emphasized such labor-intensive sectors, their share declining in several instances. Their growth may be attributed partly to their ability to shift out of scarce-factor sectors into sectors where less labor was needed. (e.g. energy and chemicals).

TABLE V-11

PERCENT OF EMPLOYMENT AND GROSS PRODUCT IN MAJOR
ECONOMIC SECTORS BY DISTRICTS, 1959 AND 1967

| District | Year | % of Working Age Population ¹ | All Sectors | | Industry | | Construction | | Agriculture ² | | Transportation and Communication | |
|-----------------|------|--|-----------------|-------------------|-----------------|--------------------------------|-----------------|-------------------|--------------------------|-------------------|----------------------------------|-------------------|
| | | | % of Employment | % of Gross Output | % of Employment | % of Gross Output ³ | % of Employment | % of Gross Output | % of Employment | % of Gross Output | % of Employment | % of Gross Output |
| Rostock | 1959 | 4.8 | 4.3 | 3.7 | 2.4 | 2.8 | | 5.8 | 6.5 | 7.3 | - | 7.4 |
| | 1967 | 4.9 | 4.6 | 4.1 | 2.6 | 3.0 | 5.6 | 5.8 | 6.4 | 7.2 | - | 15.0 |
| Schwerin | 1959 | 3.6 | 3.2 | 2.5 | 1.3 | 1.7 | | 2.9 | 6.8 | 6.8 | - | 2.8 |
| | 1967 | 3.4 | 3.1 | 2.8 | 1.4 | 2.0 | 2.8 | 2.6 | 6.7 | 7.1 | - | 2.5 |
| Neu Brandenburg | 1959 | 3.8 | 3.3 | 2.1 | 0.8 | 1.1 | | 3.2 | 8.7 | 8.7 | - | 2.8 |
| | 1967 | 3.6 | 3.3 | 2.7 | 1.0 | 1.6 | 3.5 | 3.5 | 8.7 | 8.9 | - | 2.8 |

¹ For 1959, % of total population is given.

² Includes forestry and Waterworks, except for output for 1967.

³ For 1967, includes productive handicrafts, except building handicrafts.

⁴ Excludes railways, domestic air lines, and postal-telegraph services in 1967 productive figures.

Sources: Employment Data: S.J.D.D.R. 1959, p. 9;
S.J.D.D.R. 1968, p. 83.

Output Data: S.J.D.D.R. 1960, p. 10;
S.J.D.D.R. 1969, p. 92.

TABLE V-11 Continued

PERCENT OF EMPLOYMENT AND GROSS PRODUCT IN MAJOR
ECONOMIC SECTORS BY DISTRICTS, 1959 AND 1967

| District | Year | % of Working Age Population | All Sectors | | Industry | | Construction | | Agriculture | | Transportation and Communication | |
|-----------|------|-----------------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|----------------------------------|-------------------|
| | | | % of Employment | % of Gross Output | % of Employment | % of Gross Output | % of Employment | % of Gross Output | % of Employment | % of Gross Output | % of Employment | % of Gross Output |
| Potsdam | 1959 | 6.8 | 5.8 | 4.9 | 4.0 | 4.1 | - | 6.4 | 9.0 | 8.7 | - | 5.1 |
| | 1967 | 6.5 | 5.8 | 5.8 | 4.3 | 5.3 | 4.9 | 4.8 | 8.7 | 9.2 | - | 5.3 |
| Frankfurt | 1959 | 3.8 | 3.1 | 2.8 | 1.7 | 2.3 | - | 4.4 | 5.1 | 5.4 | - | 3.2 |
| | 1967 | 3.8 | 3.2 | 3.9 | 1.9 | 3.5 | 5.4 | 5.8 | 4.9 | 5.5 | - | 4.1 |
| Cottbus | 1959 | 4.7 | 5.0 | 3.9 | 4.8 | 3.4 | - | 6.7 | 6.7 | 5.4 | - | 4.2 |
| | 1967 | 4.9 | 5.0 | 4.7 | 5.1 | 4.3 | 7.1 | 7.7 | 5.9 | 5.3 | - | 4.8 |
| Magdeburg | 1959 | 8.0 | 7.5 | 7.3 | 5.8 | 6.8 | - | 7.6 | 10.6 | 11.3 | - | 6.2 |
| | 1967 | 7.7 | 7.5 | 7.9 | 5.9 | 7.0 | 9.2 | 12.3 | 11.1 | 11.5 | - | 5.6 |
| Halle | 1959 | 11.5 | 11.0 | 13.6 | 13.2 | 15.1 | - | 10.8 | 9.2 | 10.1 | - | 9.7 |
| | 1967 | 11.5 | 11.4 | 13.0 | 13.5 | 14.1 | 11.7 | 11.2 | 10.1 | 9.8 | - | 9.9 |
| Erfurt | 1959 | 7.3 | 7.5 | 7.0 | 7.3 | 6.9 | - | 6.5 | 9.0 | 7.6 | - | 6.2 |
| | 1967 | 7.4 | 7.4 | 7.2 | 7.5 | 7.0 | 7.7 | 8.1 | 8.7 | 7.8 | - | 6.1 |

TABLE V-11 Continued

PERCENT OF EMPLOYMENT AND GROSS PRODUCT IN MAJOR
ECONOMIC SECTORS BY DISTRICTS, 1959 AND 1967

| District | Year | % of Working Age Population | All Sectors | | Industry | | Construction | | Agriculture | | Transportation and Communication | |
|-----------------|------|-----------------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|----------------------------------|-------------------|
| | | | % of Employment | % of Gross Output | % of Employment | % of Gross Output | % of Employment | % of Gross Output | % of Employment | % of Gross Output | % of Employment | % of Gross Output |
| Gera | 1959 | 4.2 | 4.6 | 4.5 | 5.5 | 5.0 | - | 3.2 | 4.2 | 3.8 | - | 4.1 |
| | 1967 | 4.4 | 4.4 | 4.7 | 5.3 | 5.2 | 3.0 | 2.9 | 4.0 | 3.7 | - | 4.5 |
| Suhl | 1959 | 3.2 | 3.4 | 2.9 | 3.8 | 2.9 | - | 2.1 | 3.5 | 2.4 | - | 2.8 |
| | 1967 | 3.3 | 3.4 | 2.8 | 3.9 | 3.0 | 2.3 | 2.2 | 2.9 | 2.2 | - | 3.1 |
| Dresden | 1959 | 11.0 | 11.8 | 13.1 | 13.9 | 14.4 | - | 9.9 | 8.0 | 8.4 | - | 11.4 |
| | 1967 | 10.9 | 11.5 | 11.8 | 13.9 | 13.2 | 7.7 | 7.2 | 8.1 | 7.9 | - | 10.4 |
| Leipzig | 1959 | 8.8 | 9.1 | 9.8 | 10.5 | 10.2 | - | 8.6 | 5.8 | 7.2 | - | 9.2 |
| | 1967 | 8.9 | 9.1 | 8.6 | 10.1 | 8.8 | 8.7 | 8.8 | 6.7 | 6.6 | - | 6.0 |
| Karl-Marx Stadt | 1959 | 12.3 | 13.0 | 13.6 | 18.7 | 15.3 | - | 9.2 | 6.2 | 6.2 | - | 11.2 |
| | 1967 | 12.3 | 12.5 | 12.6 | 17.5 | 14.5 | 7.9 | 7.9 | 6.3 | 6.3 | - | 10.8 |
| East Berlin | 1959 | 6.3 | 7.4 | 8.3 | 6.3 | 7.9 | - | 12.5 | 0.6 | 0.7 | - | 13.9 |
| | 1967 | 6.4 | 7.7 | 7.5 | 6.1 | 7.5 | 12.4 | 9.2 | 0.9 | 1.1 | - | 7.1 |

GROWTH OF POPULATION, GROSS INDUSTRIAL PRODUCTION AND

1 Sources: Gross Industrial Production: S.J.D.D.R. 1959, pp. 11-15 and S.J.D.D.R. 1968, pp. 4-8.
Construction Output: S.J.D.D.R. 1968, pp. 85-99.
Population: S.J.D.D.R. 1960/61, p. 17, and 1968, pp. 4-8.

2 Values of Construction Output are based on current prices. Prices for 1960 were 99% of the 1956 price level and those in 1967 were 125.3% of the 1956 level. The values for 1960 were taken as given, and comparative values for 1967 were obtained by multiplying current values by $\frac{99}{125.3}$ or $\frac{100}{126.6}$.

(Cf. S.J.D.D.R. 1968, p. 424 for construction price index).

TABLE V-12 Continued

GROWTH OF POPULATION, GROSS INDUSTRIAL PRODUCTION AND

CONSTRUCTION OUTPUT

| District | Growth of Gross Industrial
Production: 1959-1967 | | Growth of Construction
Output: 1960-1967 | | Index of Popula-
tion Growth:
1964=100 | |
|----------------------------|---|--------------------------------|---|-------------------------|--|------------------------------|
| | Million
Mark
UPP
1959 | Million
Mark
UPP
1967 | %
Growth
1959-
1967 | Million
Mark
1960 | Million
Mark
1967 | %
Growth
1959-
1967 |
| Cottbus | 2,613.6 | 4,142.2 | 58.5 | 495.2 | 741.4 | 49.7 |
| Magdeburg | 4,552.5 | 7,220.8 | 58.6 | 543.1 | 1,195.5 | 120.1 |
| Halle | 10,078.8 | 15,496.1 | 54.2 | 709.8 | 1,090.6 | 53.7 |
| Erfurt | 4,237.1 | 7,314.3 | 72.6 | 431.2 | 763.7 | 77.1 |
| Gera | 3,389.3 | 5,139.3 | 51.6 | 220.9 | 275.0 | 24.5 |
| Suhl | 2,097.6 | 3,240.7 | 54.5 | 134.1 | 200.9 | 49.8 |
| Dresden | 8,675.3 | 13,051.4 | 50.4 | 620.8 | 683.3 | 11.1 |
| Leipzig | 6,881.1 | 9,381.9 | 36.3 | 556.6 | 845.9 | 52.0 |
| Karl-Marx
Stadt
East | 10,220.4 | 15,855.0 | 55.1 | 603.8 | 752.8 | 24.7 |
| Berlin | 4,564.2 | 6,960.6 | 52.5 | 843.6 | 1,240.9 | 47.1 |
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TABLE V-13
 PRODUCTION IN MAJOR SUBSECTORS BY DISTRICT
 (ACCOUNTING FOR OVER 50% OF PRODUCTION)
 1000 M GROSS PRODUCT

| Subsector
and
Product | District | 1961 | 1967 |
|-----------------------------|-----------------|------------|------------|
| Energy | Halle | 201,411 | 197,391 |
| | Dresden | 186,492 | 220,571 |
| | Cottbus | 184,888 | 579,149 |
| | Berlin | 135,987 | 174,124 |
| TOTAL | | 1,200,917 | 1,765,796 |
| Mining | Cottbus | 883,679 | 910,022 |
| | Halle | 717,172 | 614,008 |
| TOTAL | | 2,729,965 | 2,696,086 |
| Metallurgy | Halle | 1,176,103 | 1,577,650 |
| | Dresden | 963,108 | 949,413 |
| | Potsdam | 855,950 | 807,965 |
| TOTAL | | 4,825,967 | 4,752,448 |
| Chemicals | Halle | 4,835,862 | 7,028,020 |
| | Leipzig | 1,757,997 | 1,782,394 |
| | Dresden | 1,028,526 | 1,732,007 |
| TOTAL | | 11,302,349 | 17,542,023 |
| Building
Materials | Dresden | 244,408 | 305,402 |
| | Halle | 230,991 | 392,693 |
| | Magdeburg | 140,467 | 272,197 |
| | Frankfurt | 140,147 | 168,238 |
| TOTAL | | 1,462,269 | 2,073,484 |
| Heavy Machinery | Magdeburg | 1,003,062 | 1,295,263 |
| | Halle | 779,051 | 1,236,858 |
| | Leipzig | 508,062 | 852,196 |
| TOTAL | | 4,247,107 | 6,254,125 |
| General Machinery | Karl Marx Stadt | 984,144 | 1,554,407 |
| | Leipzig | 695,799 | 1,080,653 |
| | Dresden | 689,163 | 1,054,520 |
| TOTAL | | 4,467,635 | 6,663,173 |

TABLE V-13 Continued

PRODUCTION IN MAJOR SUBSECTORS BY DISTRICT

(ACCOUNTING FOR OVER 50% OF PRODUCTION)

1000 M GROSS PRODUCT

| Subsector
and
Product | District | 1961 | 1967 |
|-------------------------------|-----------------|-----------|------------|
| Vehicles | Karl Marx Stadt | 1,235,214 | 1,461,277 |
| | Erfurt | 725,571 | 971,533 |
| | Dresden | 551,170 | 797,117 |
| | Halle | 515,965 | 513,007 |
| | Potsdam | 485,367 | 1,107,042 |
| TOTAL | | 5,098,321 | 6,534,661 |
| Shipbuilding | Rostock | 999,187 | 1,611,973 |
| TOTAL | | 1,212,400 | 1,849,751 |
| Castings and
Forgings | Leipzig | 192,504 | 237,535 |
| | Karl Marx Stadt | 152,817 | 171,078 |
| | Dresden | 121,165 | 134,239 |
| TOTAL | | 879,381 | 1,024,328 |
| Metalwares | Karl Marx Stadt | 400,535 | 734,946 |
| | Halle | 230,053 | 341,307 |
| | Dresden | 227,307 | 365,480 |
| | Leipzig | 182,584 | 262,653 |
| TOTAL | | 1,892,269 | 3,039,696 |
| Electro-Technical | Berlin | 1,520,136 | 2,666,118 |
| | Dresden | 1,137,488 | 1,580,486 |
| | Karl Marx Stadt | 809,712 | 1,213,254 |
| | Erfurt | 493,597 | 1,046,267 |
| TOTAL | | 5,923,084 | 10,119,194 |
| Precision Tools
and Optics | Erfurt | 364,068 | 602,706 |
| | Gera | 242,040 | 405,226 |
| | Dresden | 233,635 | 396,154 |
| | Potsdam | 121,111 | 329,991 |
| TOTAL | | 1,507,691 | 2,758,177 |

TABLE V-14

PERCENT OF GROSS OUTPUT IN EACH DISTRICT BY SELECTED
INDUSTRIAL SECTORS, 1959 AND 1968

| District | Year | Percent
of Out-
put in
all
Sectors | Primary Industry | | | | Metal Processing
Industries | | | Light Industry | | | | |
|----------------------|------|--|-----------------------|-----------|-----------------|-----------------------|--------------------------------|------------------|-----------------|----------------|------|--------|--|--|
| | | | Energy
and
Fuel | Chemicals | Metal-
lurgy | Building
Materials | Machines
and
Vehicles | Electro-
nics | Non
Textiles | Textiles | Food | Others | | |
| Rostock | 1959 | 100 | 1.2 | 0.7 | - | 1.2 | 57.5 | 2.2 | 5.7 | - | 31.5 | - | | |
| | 1968 | 100 | 1.4 | 1.2 | - | 1.0 | 44.1 | 1.6 | 5.4 | - | 40.3 | - | | |
| Schwerin | 1959 | 100 | 1.1 | 7.7 | - | 3.1 | 18.4 | 2.4 | 16.0 | 1.5 | 49.8 | - | | |
| | 1968 | 100 | 1.1 | 6.5 | - | 3.5 | 17.9 | 0.4 | 9.6 | 1.0 | 53.7 | 6.4 | | |
| Neu Bran-
denburg | 1959 | 100 | 1.0 | 0.6 | 0 | 5.6 | 19.4 | 2.7 | 12.1 | 2.0 | 56.6 | - | | |
| | 1968 | 100 | 1.0 | 0.2 | - | 3.5 | 20.0 | 1.3 | 6.8 | 1.1 | 59.4 | 6.7 | | |
| Potsdam | 1959 | 100 | 0.6 | 9.3 | 24.0 | 2.1 | 23.4 | 9.4 | 9.2 | 2.0 | 20.0 | - | | |
| | 1968 | 100 | 1.0 | 6.9 | 26.0 | 1.4 | 28.1 | 6.3 | 6.0 | 1.4 | 18.9 | 4.0 | | |
| Frankfurt | 1959 | 100 | 2.1 | 19.5 | 23.8 | 8.9 | 13.6 | 3.7 | 8.8 | 0.7 | 19.0 | - | | |
| | 1968 | 100 | 0.7 | 26.3 | 25.9 | 5.6 | 10.5 | 3.6 | 7.2 | - | 16.1 | 3.9 | | |

Sources: Data for 1968, taken from S.J.D.D.R. 1969, p. 105. Data for 1959:
calculated from S.J.D.D.R. 1959, pp. 294-295.

1 Includes Waterworks and Percent of Industrial Production in Sectors outside
of Industry.

TABLE V-14 Continued

PERCENT OF GROSS OUTPUT IN EACH DISTRICT BY SELECTED

INDUSTRIAL SECTORS, 1959 AND 1968

| District | Year | Percent
of Out-
put in
all
Sectors | Primary Industry | | | | Metal Processing
Industries | | | Light Industry | | | | |
|-----------|------|--|-----------------------|-----------|-----------------|-----------------------|--------------------------------|------------------|-----------------|----------------|------|--------|--|--|
| | | | Energy
and
Fuel | Chemicals | Metal-
lurgy | Building
Materials | Machines
and
Vehicles | Electro-
nics | Non
Textiles | Textiles | Food | Others | | |
| Cottbus | 1959 | 100 | 28.9 | 11.4 | 0.5 | 4.3 | 15.8 | 5.3 | 11.9 | 9.3 | 12.6 | 3.3 | | |
| | 1968 | 100 | 48.0 | 8.6 | 0.4 | 2.0 | 14.1 | 1.4 | 7.4 | 4.4 | 10.5 | | | |
| Magdeburg | 1959 | 100 | 4.2 | 9.8 | 5.1 | 2.6 | 35.4 | 7.3 | 8.6 | 0.3 | 26.7 | 3.6 | | |
| | 1968 | 100 | 2.5 | 9.6 | 4.5 | 2.5 | 34.1 | 7.2 | 7.1 | 0.1 | 28.7 | | | |
| Halle | 1959 | 100 | 10.3 | 38.0 | 7.9 | 2.3 | 19.5 | 3.0 | 6.0 | 0.3 | 12.6 | 2.6 | | |
| | 1968 | 100 | 6.8 | 36.6 | 15.1 | 2.6 | 17.5 | 2.2 | 4.6 | 0.2 | 11.9 | | | |
| Erfurt | 1959 | 100 | 4.7 | 6.8 | 0 | 1.4 | 32.1 | 15.5 | 14.1 | 8.1 | 17.3 | 3.0 | | |
| | 1968 | 100 | 0.9 | 9.6 | - | 1.4 | 29.0 | 16.1 | 11.4 | 7.5 | 21.0 | | | |
| Gera | 1959 | 100 | 1.0 | 13.1 | 10.5 | 3.1 | 14.5 | 11.6 | 16.5 | 17.1 | 12.7 | 3.2 | | |
| | 1968 | 100 | 1.8 | 11.6 | 8.6 | 2.3 | 15.9 | 12.6 | 15.7 | 14.3 | 13.9 | | | |
| Suhl | 1959 | 100 | 6.7 | 5.5 | 2.1 | 1.1 | 29.9 | 19.1 | 24.1 | 2.3 | 9.3 | 3.4 | | |
| | 1968 | 100 | 0.9 | 14.6 | - | 1.5 | 31.1 | 13.3 | 23.5 | 1.5 | 10.1 | | | |

TABLE V-14 Continued

PERCENT OF GROSS OUTPUT IN EACH DISTRICT BY SELECTED

INDUSTRIAL SECTORS, 1959 AND 1968

| District | Year | Percent
of Out-
put in
all
Sectors | Primary Industry | | | Metal Processing
Industries | | | Light Industry | | | | |
|--------------------|------|--|-----------------------|-----------|-----------------|--------------------------------|-----------------------------|------------------|-----------------|----------|------|--------|--|
| | | | Energy
and
Fuel | Chemicals | Metal-
lurgy | Building
Materials | Machines
and
Vehicles | Electro-
nics | Non
Textiles | Textiles | Food | Others | |
| Dresden | 1959 | 100 | 1.9 | 10.4 | 7.9 | 2.6 | 20.6 | 13.9 | 17.2 | 9.5 | 15.9 | - | |
| | 1968 | 100 | 3.6 | 9.2 | 11.1 | 2.2 | 22.7 | 10.7 | 13.4 | 9.0 | 15.2 | 2.9 | |
| Leipzig | 1959 | 100 | 10.9 | 16.6 | 1.6 | 1.8 | 25.4 | 6.2 | 15.1 | 8.1 | 14.3 | - | |
| | 1968 | 100 | 6.2 | 16.5 | 0.7 | 1.9 | 29.9 | 5.2 | 13.4 | 7.8 | 14.6 | 3.8 | |
| Karl-Marx
Stadt | 1959 | 100 | 2.2 | 4.4 | 1.5 | 0.8 | 25.4 | 7.5 | 18.2 | 32.2 | 7.8 | - | |
| | 1968 | 100 | 2.2 | 4.7 | 3.8 | 0.8 | 28.0 | 7.6 | 16.4 | 25.5 | 9.7 | 1.3 | |
| East
Berlin | 1959 | 100 | 2.4 | 9.9 | 2.7 | 1.1 | 19.1 | 30.8 | 15.3 | 0.4 | 18.3 | - | |
| | 1968 | 100 | 3.7 | 9.2 | 0 | 0.5 | 16.3 | 34.9 | 11.3 | 0.2 | 18.7 | 5.3 | |

CHAPTER VI

ECONOMIC PLANNING AND STRUCTURAL CHANGES: AN EVALUATION

This chapter summarizes some of the preceding material and evaluates the relationship between economic planning and structural changes in the East German economy.

We have seen that economic planning in East Germany during the 1960s was characterized by substantial changes in organization, both internal and external, and proceeded on the basis of definite output, investment, and employment goals. The efforts made to achieve these goals had far-reaching implications for the structure of the East German economy and for regional development.

Among the more important organizational features of economic planning have been:

1. The attainment of a very high degree of state ownership in most economic sectors. By 1967 more than 80% of the output of each economic sector was being produced by state enterprises.

State participation in the production of industry was more than 85% in every industrial sector except Light Industry.

2. The development of a more rational pricing system, i.e. prices reflecting the relative costs of different products. This was started in 1963 with a revaluation of capital assets. A second stage was begun in 1964 with new prices for primary products. This stage was considered more or less complete in 1967 with new prices for most industrial products. Since then efforts have been made to relate prices to the capital intensity of different products, so as to encourage a high level of investment in those sectors that need it. Very recently the foreign trade sector has also been subjected to such measures. An attempt is being made to narrow the gap between domestic prices and foreign trade prices.
3. The reorganization of the planning system itself. Since 1958 several steps have been taken to decentralize the system, not for the sake of decentralization but to facilitate the central direction of the economy amidst increasing complexity resulting from a growing, diversified

economy. This has meant giving more responsibility to the middle echelons of power, the VVBs, and to the district economic councils. This policy was implemented domestically in the New Economic System of 1963. Efforts have been made in recent years to extend it to foreign trade as well.

4. A greater integration of foreign trade and domestic planning, through COMECON and through bilateral agreements with various socialist countries, especially the U.S.S.R.

These organizational changes were designed to facilitate the planning of investment and labor, and the attainment of trade and production goals. The main purpose of this chapter is to evaluate the extent to which such measures have been successful. This requires a comparison of specific planning goals (outlined in chapters II and III) with actual achievements (chapters IV and V). This will be done first for the economy as a whole and then for the industrial sector.

A. ECONOMY-WIDE STRUCTURAL PLANNING AND ACHIEVEMENTS

One of the basic goals of East German planners in the 1960s was to increase industrial production considerably more rapidly than the output of the economy as a whole. It

was stated specifically that Industry's share of material production was to increase from 66% to 70% between 1963 and 1970. Labor and capital were to be allocated in such a way as to achieve this desired result.

The following tables indicate the extent to which these goals were realized. Table VI-1 shows the rate of

TABLE VI-1

RATE OF CHANGE IN EMPLOYMENT AND INVESTMENT

BY ECONOMIC SECTOR, 1950-1958 and 1960-1968¹

| Sector | Employment | | Investment
1968 as % of
1960 |
|---------------------------------|----------------------|----------------------|------------------------------------|
| | 1958 as % of
1950 | 1968 as % of
1958 | |
| Industry | 121.7 | 101.4 | 164.0 |
| Construction | 127.6 | 109.9 | 268.0 |
| Agriculture | 74.2 | 81.9 | 215.9 |
| Trade | 129.8 | 98.4 | 310.9 |
| Transport and
Communications | 117.6 | 97.6 | 149.9 |
| All Sectors | 110.2 | 100.3 | 164.5 |

¹ Results for 1950 - 1958 calculated from W. Stolper, op. cit., p. 44.

increase in employment for all sectors in two periods, 1950 - 1958 and 1960 to 1968, together with increases in investment for the latter period.

The employment data indicate that labor force increases in the first period were much more substantial than in the second. This is true for each separate sector and for all sectors combined. This illustrates again a basic problem of the East German economy: the virtual stagnation of the labor force in the past decade.

In the second period only two sectors, industry and construction, had absolute increases in employment. Employment in industry grew more rapidly than in any sector except construction. This contrasts with the first period when employment grew more rapidly in the trade sector and very rapidly as well in transport and communications. It appears, then, that planners made special efforts in the 1960 period to retain employment in industry, and construction to increase production in those sectors relative to others.

The investment picture is not quite so clear. Investment in industry in 1960-1968 increased at about the average rate for all sectors. The increases in construction, agriculture, and trade were considerably greater than those for industry. This means also that the share of investment

allocated to industry must have declined slightly during this period. This is confirmed by Table VI-2. It shows that industry's share of employment increased from 38.2% in 1950 to 41.8% in 1968, but its share of total investment remained at about the same level. Actually, Table IV-21 indicated that industry investment increased more rapidly than the average (and hence its share of total investment increased) between 1960 and 1967 and dropped below the average level only in 1968. In the latter

TABLE VI-2

SHARE OF EMPLOYMENT (E) AND INVESTMENT (I) BY
ECONOMIC SECTOR¹

| Sector | Year and Factor of Production | | | | | |
|---------------------------------|-------------------------------|-------|-------|-------|-------|-------|
| | 1950 | 1958 | 1960 | | 1968 | |
| | E | E | E | I | E | I |
| Industry | 38.2 | 42.4 | 41.4 | 47.5 | 41.8 | 47.4 |
| Construction | 5.3 | 6.1 | 6.1 | 2.5 | 6.7 | 4.1 |
| Agriculture | 26.6 | 19.2 | 17.0 | 11.8 | 13.8 | 15.5 |
| Trade | 8.5 | 11.3 | 11.6 | 2.5 | 11.4 | 4.7 |
| Transport and
Communications | 6.1 | 6.5 | 7.2 | 10.1 | 7.0 | 9.2 |
| Others | 15.3 | 14.5 | 16.7 | 25.6 | 19.3 | 19.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

¹ Data for 1950-1958, W. Stolper, Ibid, p. 37.

year there were unusually large increases in investment in agriculture, trade, construction, and transportation and communication at the expense, apparently, of industry. Therefore, during most of the period 1960-1968 industry investment increased more rapidly than the average, and industry's share of total investment increased correspondingly. One might have expected the increase to be larger than it was, however, in view of the strong emphasis given to industry.

There may be several reasons why more labor and investment were not allocated to industry during this period. The slowdown in 1968 especially may be the result of deficiencies appearing in other sectors of the economy. The share of investment used to support the infrastructure of the economy (transportation and communication) had declined from 10.1% in 1960 to 8.4% in 1966 and the share allocated to construction had dropped from 2.5% in 1960 to 1.9% in 1965. Since that period an obvious attempt has been made to increase production in these sectors through greater allocations of investment. The share allocated to construction rose from 1.9% to 4.1% between 1965 and 1968 (which represents an absolute increase of about 175% in the three year period) while the share allocated to transportation and communication increased from 8.4% in 1966 to 9.2% in 1968 (or an absolute

increase of about 32% in the two year period). This was probably accomplished to some extent at least at the expense of investment funds going to industry.

However, over the period as a whole a more important reason for the relatively small increases in labor and investment going to industry (judged against the planned emphasis given to this sector) is probably the relatively large increase in labor and capital productivity which characterized the industrial sector. As the analysis of chapter IV indicated, considerably more labor and capital would have had to flow into industry if productivity growth in the industrial sector had been as low as the average productivity growth for all sectors. Conversely, considerably more labor and capital might have been allocated to industry if productivity growth in some sectors, especially agriculture, had increased to the average level. We noted that if labor productivity increases had been only average in industry, employment in industry would have had to increase by 6%, instead of by only 1%, between 1960 and 1967 in order to realize production plans. At the same time, industry's share of investment over that whole period (excluding the service sector) would have increased from 63.9% to 68.7% if capital productivity growth in industry had only been average. Therefore, the relative rate of

growth of productivity in this sector permitted smaller infusions of capital and labor than would otherwise have been necessary.

Table VI-3 illustrates the rate at which net production has grown in the various economic sectors in the periods considered here.

TABLE VI-3

RATE OF GROWTH IN PRODUCTION BY ECONOMIC SECTOR,
1950-1960 and 1960-1968¹

| Economic Sector | Growth of Net Product | | Approximate Average Annual Rate of Growth | |
|-----------------------------|-----------------------|-------------------|---|-----------|
| | 1960 as % of 1950 | 1968 as % of 1960 | 1950-1960 | 1960-1968 |
| Industry (inc. handicrafts) | 280 | 148 | 11.0% | 5.0% |
| Construction | 270 | 156 | 10.5 | 5.7 |
| Agriculture (and Forestry) | 135 | 114 | 3.0 | 1.7 |
| Transport and Communication | 180 | 131 | 6.0 | 3.5 |
| Trade (Domestic) | 300 | 132 | 11.5 | 3.5 |
| Other Producing Sector | 296 | 152 | 11.5 | 5.4 |
| All Sectors Combined | 233 | 140 | 8.8 | 4.3 |

¹ S.J.D.D.R. 1969, p. 40.

This Table indicates that production as a whole grew much more slowly in the period 1960-1968 than in 1950-1960. The approximate annual rate of growth for all sectors in 1950-1960 was 8.8% while in 1960-1968 it was only 4.3%, slightly less than half of that in the 1950s. In both periods industrial production grew more rapidly than the production of all sectors, but the annual growth rate for industry has fallen slightly more from the first period to the second than the rate for all sectors (by about 55%). Despite this decline only the construction sector, and a few small sectors not listed separately, had a higher rate of growth than industry between 1960 and 1968.

Because of the relatively high rate of growth of industrial production, industry's share of total net product has increased consistently since 1950. This is illustrated in Table VI-4.

TABLE VI-4

SHARE OF NET NATIONAL PRODUCT BY ECONOMIC SECTORS

1950, 1960 and 1968¹

| Economic Sectors | Percent of Net Product (Comparable Prices) | | |
|---|--|------------|------------|
| | 1950 | 1960 | 1968 |
| Industry (including productive handicrafts) | 47.0 | 56.4 | 59.7 |
| Construction | 6.1 | 7.0 | 7.8 |
| Agriculture (including Forestry) | 28.4 | 16.4 | 13.4 |
| Transport and Communication | 7.1 | 5.5 | 5.1 |
| Trade (Domestic) | 10.1 | 13.0 | 12.2 |
| Other Producing Sectors | <u>1.2</u> | <u>1.6</u> | <u>1.7</u> |
| Total | 100.0 | 100.0 | 100.0 |

¹ S.J.D.D.R., 1969, p. 40.

It is clear from this table that industry's share increased more rapidly between 1950 and 1960 than between 1960 and 1968. However, the percentage increase in its share in this latter period was about 6% ($\frac{59.7}{56.4} - 1$) which corresponds almost exactly with the hoped-for percentage

increase in its share of material production projected by the economic planners for the period 1963-1970 ($\frac{70}{66} - 1$).¹

This indicates that the planned relative growth of the industrial sector during the 1960s was largely accomplished. This says little, however, about the absolute increase in industrial production. The relative goals might have been accomplished with a low (and even negative) growth rate, provided only that the other sectors grew even less (or declined even more).

We have seen that net production actually increased by about 5% annually in East German industry, between 1960 and 1968. It is by no means clear, however, that this was in accordance with the absolute plans for industry and that it represents the type of utilization of capital and labor which the planners envisaged. Nor does it tell us whether structural changes within industry corresponded to the plans. This can only be determined with a more detailed analysis of the industrial sector itself.

1 "Material Production" is a narrower concept than Net National Product, including primarily the output of industry, agriculture, and productive handicrafts. The industry share of this was to increase from 66% to 70% - or a percentage increase in the share of about 6%.

B. INDUSTRY PLANNING AND ACHIEVEMENTS

Structural planning for East German industry in the period 1959 to 1968 has been characterized by a concerted effort to expand the Metal Processing Sector more rapidly than any other. Within this sector special emphasis was to be given to the output of the electro-technical, precision tools and optics, general machinery, and vehicles sub-sectors. In general the emphasis was to be on those products and sectors which were considered most amenable to technical innovation and most likely to encourage such innovation in other sectors.

Certain subsectors of the Primary sector, especially chemicals and energy, and the 2nd stage of metallurgy, were also to receive unique attention. On the whole the Primary sector was not accorded the extremely important position which it had in previous periods. This represents a subtle but rather important shift in the industrial planning of East Germany. To some extent the goals laid down in 1963 also represent a shift from the 1950 period with regard to consumer production, as represented by the Foods and Light Industries.¹ The rates of growth for the latter two

¹ Exceptions were made for a few subsectors such as glass and ceramic products, for reasons given previously (Cf. p. 76).

sectors were to be lower than for the preceding period, and considerably lower than for either Primary Industry or Metal Processing.

Actual production targets were set for some of the crucial sectors and subsectors, generally for the period 1963-70. The output targets were to be accomplished by the realization of several "sub-goals". These included:

1. A heavy infusion of investment in industry.
Industrial investment was to increase by about 7.5% annually between 1963 to 1970, or about 44% between 1963 and 1968.
2. The more efficient utilization of investment.
The decline in the rate of capital productivity of the 1950s (see chapter IIC) was to be arrested and reversed, though no specific capital productivity goals were set.
3. A more efficient utilization of labor. Little hope was held for a substantial increase in the level of employment, but labor productivity in industry was to increase between 40-45% between 1963 and 1968.
4. Exports of the metal-processing sector especially

were to be increased, above all to socialist-bloc countries. Also, imports were to be used to bolster the leading industries, through the importation of more investment goods and industrial raw materials. Greater coordination between domestic production and foreign trade was to be accomplished.

5. Territorial planning was to be encouraged, to ensure that all material resources within the country were to be utilized as efficiently as possible.

Tables VI-5 and VI-6 illustrate how labor and capital were allocated and utilized in industry. Columns 1 and 2 of Table VI-5 indicate that vis a vis the eight year period 1951-1959, the eight year period 1959-1967 was characterized by very small increases (and in some cases substantial decreases) in employment. The only surprising exception was the metallurgical subsector, which experienced a sharp increase in employment between 1959 and 1967. Column 7 shows that this was the only industrial subsector with a decline in labor productivity during this period, which indicates that attempts were made to increase production in this subsector despite a very poor return to labor.

TABLE VI-5
CHANGES IN INDUSTRIAL EMPLOYMENT AND LABOR PRODUCTIVITY

| Industry: Sectors
and Subsectors | Rate of Change in
Employment | | Share of Total
Employment | | Labor
Pro-
ductivity | |
|-------------------------------------|---------------------------------|-------------------------|------------------------------|------|----------------------------|----------------------|
| | 1959 as
% of
1951 | 1967 as
% of
1959 | 1950 | 1959 | 1967 | 1967 as
% of 1959 |
| Column Nos. | 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | | 7 |
| 1. PRIMARY INDUSTRIES | 117.1 ² | 103.8 | 24.8 ⁴ | 25.8 | 26.9 | 26.5 |
| 1. Energy | 112.5 | 111.6 | 2.2 | 2.2 | 2.5 | 16.6 |
| 2. Mining | 115.0 | 89.0 | 7.4 | 7.5 | 6.7 | 13.1 |
| 3. Metallurgy | 110.1 | 132.7 | 3.0 | 3.1 | 4.2 | 47.6 |
| 4. Chemicals | 131.2 | 107.4 | 8.7 | 9.6 | 10.4 | 36.8 |
| 5. Building
Materials | 111.1 ³ | 93.9 | 3.5 | 3.4 | 3.2 | 13.7 |
| | | | | | | 173.8 |

¹ Labor Productivity = 1000 Marks Gross Product Per Worker and Salaried Employee (See Table IV-31).

² Based on data in S.J.D.D.R. 1955, pp. 125-131 and 1959, pp. 316-319.

³ Includes glass and ceramics

⁴ Source, H. Koehler, op. cit., p. 198. For 1959 and 1967 data see Table IV-28. Detail does not always add up to total because of rounding.

TABLE VI-5 Continued
CHANGES IN INDUSTRIAL EMPLOYMENT AND LABOR PRODUCTIVITY

| Industry: Sectors
and Subsectors | Column Nos. | Rate of Change in
Employment | | Share of Total
Employment | | Labor
Pro-
ductivity
1959 1 | Labor
Pro-
ductivity
1967 as
% of 1959 |
|-------------------------------------|-------------|---------------------------------|-------|------------------------------|------|--------------------------------------|--|
| | | 1 | 2 | 3 | 4 | | |
| | | | | | | | 7 |
| II. METAL PROCESSING
INDUSTRIES | | 123.4 | 106.8 | 33.3 | 36.4 | 39.1 | 21.1 |
| 1. Heavy Machinery | | - | 109.4 | - | 6.3 | 6.9 | 21.1 |
| 2. General Machinery | | - | 121.6 | - | 6.2 | 7.6 | 20.0 |
| 3. Vehicles | | - | 79.8 | - | 6.7 | 5.4 | 24.0 |
| 4. Shipbuilding | | - | 98.4 | - | 1.4 | 1.4 | 30.4 |
| 5. Castings and
Forgings | | - | 97.6 | - | 1.7 | 1.7 | 16.4 |
| 6. Metalwares | | - | 105.0 | - | 3.2 | 3.3 | 17.9 |
| 7. Electro-Technical | 125.4 | | 116.4 | 6.4 | 7.5 | 8.8 | 23.3 |
| 8. Precision Tools/
Optics | 120.5 | | 116.6 | 3.2 | 3.4 | 4.0 | 14.3 |
| | | | | | | | 168.6 |
| | | | | | | | 156.3 |
| | | | | | | | 159.7 |
| | | | | | | | 163.5 |
| | | | | | | | 157.7 |
| | | | | | | | 137.7 |
| | | | | | | | 185.0 |
| | | | | | | | 179.7 |
| | | | | | | | 176.5 |

1 Thousands of Marks Gross Product per worker and salaried employee
(Cf. Table IV-31).

TABLE VI-5 Continued
CHANGES IN INDUSTRIAL EMPLOYMENT AND LABOR PRODUCTIVITY

| Industry: Sectors
and Subsectors | Column Nos. | Rate of Change in
Employment | | Share of Total
Employment | | Labor
Pro-
ductivity
1959 | Labor
Pro-
ductivity
1967 as
% of 1959 |
|-------------------------------------|-------------|---------------------------------|------|------------------------------|-------|------------------------------------|--|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| III. LIGHT INDUSTRIES | | 104.6 | 87.5 | 34.3 | 30.3 | 26.7 | 17.6 |
| 1. Woodworking-
Cultural | | 106.2 | 92.6 | 6.4 | 5.5 | 5.1 | 15.7 |
| 2. Textiles | | 95.5 | 81.5 | 14.4 | 12.0 | 9.8 | 18.9 |
| 3. Clothing | | - | 85.0 | - | 4.3 | 3.7 | 18.4 |
| 4. Leather-Fur
Products | | - | 93.4 | - | 2.5 | 2.4 | 19.6 |
| 5. Cellulose/
Paper | | 110.5 | 91.2 | 2.5 | 2.3 | 2.1 | 17.7 |
| 6. Printing | | 80.0 | 88.1 | 2.3 | 1.4 | 1.3 | 15.3 |
| 7. Glass/Ceramics | | - | 99.9 | 2.6 | 2.4 | 2.4 | 12.5 |
| IV. FOOD-DRINK-TOBACCO | | 107.7 | 97.3 | 7.5 | 7.5 | 7.3 | 45.0 |
| ALL INDUSTRIES | | 114.6 | 99.4 | 100.0 | 100.0 | 100.0 | 23.2 |
| | | | | | | | 157.9 |

TABLE VI-6

CHANGES IN INVESTMENT, CAPITAL PRODUCTIVITY AND CAPITAL INTENSITY

PER WORKER

| Industry: Sectors
and Subsectors | 1967 as
% of
1960 | Gross Investment
Share of Total | | Capital
Pro-
ductivity
1960 ¹ | Index
of
Capital
Pro-
ductivity
1966 as
% of 1960 | Capital
per
Worker |
|-------------------------------------|-------------------------|------------------------------------|------|---|---|--------------------------|
| | | 1950 | 1960 | 1967 | | |
| Column Nos. | 1 | 2 | 3 | 4 | 5 | 6 |
| I. PRIMARY INDUSTRIES | 129.5 | 56.7 ² | 69.1 | 59.3 | 428 | 88.0 |
| 1. Energy | 104.8 | - | 15.9 | 11.6 | 92 | 93.8 |
| 2. Mining | 98.0 | - | 24.1 | 16.1 | 216 | 60.5 |
| 3. Metallurgy | 224.0 | - | 5.9 | 8.3 | 871 | 65.9 |
| 4. Chemicals | 173.8 | - | 17.5 | 19.8 | 723 | 110.3 |
| 5. Building
Materials | 101.6 | - | 5.6 | 3.6 | 483 | 92.5 |
| | | | | | | 37.4 |
| | | | | | | 158.8 |
| | | | | | | 146.7 |
| | | | | | | 142.2 |
| | | | | | | 163.4 |
| | | | | | | 134.8 |
| | | | | | | 134.9 |

1 Capital Productivity = Marks Gross Production per 1000 Marks Capital Assets (See Table IV-37).

2 Calculated by Koehler, *Ibid*, p. 204, in real terms.

3 Capital Intensity, Col. 6, = Thousand of Marks Capital per Worker, See Table A 10.

TABLE VI-6 Continued

CHANGES IN INVESTMENT, CAPITAL PRODUCTIVITY AND CAPITAL INTENSITY

PER WORKER

| Industry: Sectors
and Subsectors | 1967 as
% of
1960 | Gross Investment
Share of Total | | | Capital
Pro-
ductivity
1960 | Index
of
Capital
Pro-
ductivity
1966 as
% of 1960 | Capital
per
Worker
1960 | 1966
as %
of
1960 |
|-------------------------------------|-------------------------|------------------------------------|------|------|--------------------------------------|---|----------------------------------|----------------------------|
| | | 1950 | 1960 | 1967 | | | | |
| Column Nos. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| II. METAL PROCESSING
INDUSTRIES | 216.0 | 21.8 | 17.7 | 23.9 | 1,528 | 102.4 | 17.6 | 137.3 |
| 1. Heavy Machinery | 190.7 | - | 3.5 | 4.2 | 1,192 | 103.4 | 21.6 | 131.7 |
| 2. General Machinery | 195.5 | - | 4.2 | 5.2 | 1,210 | 111.6 | 18.6 | 134.8 |
| 3. Vehicles | 226.0 | - | 2.9 | 4.2 | 1,996 | 80.7 | 19.2 | 143.9 |
| 4. Shipbuilding | 113.5 | - | 0.8 | 0.6 | 1,615 | 100.9 | 21.9 | 128.1 |
| 5. Castings and Forgings | 251.6 | - | 1.1 | 1.7 | 852 | 89.0 | 22.5 | 142.0 |
| 6. Metalwares | 234.9 | - | 1.0 | 1.5 | 1,658 | 106.9 | 16.7 | 143.9 |
| 7. Electro-Technical | 221.1 | - | 3.4 | 4.5 | 2,203 | 105.0 | 13.0 | 147.7 |
| 8. Precision Tools/
Optics | 408.1 | - | 0.8 | 2.0 | 1,324 | 119.3 | 12.7 | 129.7 |

TABLE VI-6 Continued

CHANGES IN INVESTMENT, CAPITAL PRODUCTIVITY AND CAPITAL INTENSITY PER WORKER

| Industry: Sectors
and Subsectors | 1967 as
% of
1960 | Gross Investment
Share of Total | | Capital
Pro-
ductivity
1960 | Index
of
Capital
Pro-
ductivity
1966 as
% of 1960 | Capital
per
Worker
1966
as %
of
1960 |
|-------------------------------------|-------------------------|------------------------------------|-------|--------------------------------------|---|--|
| | | 1950 | 1960 | 1967 | | |
| Column Nos. | 1 | 2 | 3 | 4 | 5 | 6 |
| III. LIGHT INDUSTRIES | 155.8 | 11.1 | 9.9 | 10.4 | 1,430 | 98.5 |
| 1. Woodworking-
Cultural | 166.4 | - | 1.5 | 1.7 | 1,836 | 103.5 |
| 2. Textiles | 153.6 | - | 3.6 | 3.7 | 1,385 | 101.0 |
| 3. Clothing | 169.9 | - | 0.3 | 0.3 | 8,876 | 93.6 |
| 4. Leather-Fur
Products | 149.0 | - | 0.6 | 0.6 | 1,822 | 113.7 |
| 5. Cellulose/
Paper | 152.5 | - | 1.7 | 1.8 | 620 | 98.0 |
| 6. Printing | 277.7 | - | 0.3 | 0.5 | 1,143 | 86.0 |
| 7. Glass/Ceramics | 139.4 | - | 2.0 | 1.8 | 730 | 90.5 |
| IV. FOOD-DRINK-TOBACCO | 337.1 | 10.5 | 3.2 | 6.4 | 1,480 | 103.5 |
| ALL INDUSTRIES | 154.1 | 100.0 | 100.0 | 100.0 | 865 | 93.8 |
| | | | | | | 339 |

In general, the Metal Processing sector received the greatest infusion of labor during this period, in keeping with the priority set for it by the planners. Within this sector all of the subsectors considered most crucial by planners, with the exception of vehicles, received infusions of labor which were above average for that sector. Column 7 indicates that labor productivity in the vehicles subsector increased more rapidly than for any other subsector except metalwares, which helps to explain the actual drop of employment in this important subsector.

Within Primary Industry the crucial subsectors of chemicals and energy also received infusions of labor above the average for that sector. On the other hand, less important subsectors like mining and building materials experienced an absolute decline in employment.

The drop of employment in the Food-Drink-Tobacco and Light Industry sectors is in line with the relative importance attached to these sectors by planners during this period. In the period 1951-1959 certain subsectors in these sectors received increases in labor almost equal to or greater than such important subsectors as energy and metallurgy, but this was far from the case in the 1959-1967 period.

The relative rate at which employment increased in the various subsectors between 1951 and 1967 is reflected in their changing share of total employment (columns 3-5). Both the Primary and the Metal Processing sectors increased their share of employment at the expense of the Light and Food Industries. Most striking was the sharp increase in the share of Metal Processing, from 33.3% to 39.1%, and the sharp decline in the share of Light Industry, from 34.3% to 26.7%. Between 1959 and 1967 labor was pulled out of Light Industry to such an extent that its share of total employment fell below that of Primary Industry for the first time. It appears that economic planners in East Germany were very successful in reallocating labor in a way which corresponded to the structural changes which they wished to bring about.

This task was made difficult, however, by the varying rates of growth in labor productivity in the sectors. Column 6 shows the output/labor ratio for each industrial sector and subsector in 1959. This ratio is used as a measure of labor productivity. Column 6 shows that in 1959 labor productivity was highest in the Foods sector, followed by Primary Industry, Metal Processing and Light Industry. On the basis of these productivity levels economic planners might have found it necessary to increase

the labor force in Metal Processing to a very much greater extent than in either Primary Industry or Foods in order to increase production at a relatively fast rate. Also, certain crucial subsectors like energy, precision tools and optics and glass-ceramics, all of which had a low output/labor ratio, would also have needed extremely large infusions of labor in order to increase production according to plan.

As it was, labor did get channeled into these sectors and subsectors more vigorously than into others. However, such employment increases would have had to be substantially higher if labor productivity in these important sectors had not grown at an above average rate, and it would have been possible to reallocate even more labor from the less to the more important sectors if labor productivity in the former had grown at the average rate. For example, the drop in labor productivity in the metallurgical subsector meant that a great deal of relatively unproductive labor had to be retained in that subsector in order to fulfill production goals - labor which might otherwise have been allocated to more important sectors such as chemicals where labor productivity was growing much more quickly.

We saw in chapter IV that with average productivity growth in Primary Industry the labor force there might have

declined to 96.8% of the 1959 level in 1967, instead of increasing to 104% of that level. Similarly, employment in Foods might have dropped to 88% of the 1959 level instead of only to 97.3%. Production goals for these sectors would have been realized despite such declines, and the labor released might have been used to increase output in the crucial sectors and subsectors even more than was the case. Therefore, economic planners might have been able to reassign labor from less to more crucial sectors even more effectively than they actually did.¹

Table VI-6 indicates the way in which investment funds were allocated during the 1960s to realize the structural goals of economic planners. Since in general it would seem to be easier to shift investment funds than labor from one type of industry to another one would expect

¹ It should be noted that the hoped-for increase of 40-45% in labor productivity for all industry between 1963 and 1968 was not realized. According to Table IV-31, labor productivity actually increased by 30% during this period. This calculation is based on tentative figures for 1968. The planned goal for 1963-67 was an increase of about 35%; the actual increase was 24.1%. During this latter period labor productivity increased by 27% in Metal Processing, 18.5% in Primary Industry, 30.9% in Light Industry and 21% in Foods. Thus, Light Industry, which ranked below the Primary and Metal Processing sectors in overall priority came closest to realizing the labor productivity norms.

The tentative figures for 1968 suggest that labor productivity may actually have declined in Metal Processing and Foods in that year, while Primary Industry((and Light Industry to a lesser extent) registered substantial gains. It is too early to confirm these results or to detect a new trend.

to find investment trends corresponding more to production plans than would be the case for trends in employment.

This expectation is satisfied only partly, as is indicated by the data in Table VI-6. Column 1 shows that investment funds going to Metal Processing increased much more rapidly between 1960 and 1967 than funds going to Primary Industry, and slightly more rapidly than funds going to Light Industry. This would seem to correspond more or less with the basic plans for industry. Further, investment going to such important subsectors as chemicals, precision tools and optics, electro-technical and vehicles, increased more rapidly than the average rate for their sector. In accordance with this, the share of total investment going to these sectors and subsectors increased substantially between 1950 and 1967 (columns 2-4). Nowhere is the shift in emphasis between Primary Industry and Metal Processing so clearly demonstrated as in these investment columns. Between 1950 and 1960 the share of Primary Industry increased substantially, from 56.7% of the total to 69.1%, while the share of Metal Processing declined from 21.8% to 17.7%. However, between 1960 and 1967 this pattern was reversed. The Primary sector's share of investment declined by about 10 percentage points while the share of Metal Processing increased from 17.7% to 23.9%.

Therefore the allocation of investment in the 1960s as between Metal Processing and Primary Industry, and as it pertained to some crucial subsectors, seemed to be in line with the overall objectives of economic planners.

However, the Food sector and several important subsectors pose some special problems. Investment in Foods increased much more rapidly than in Metal Processing during the 1960s, despite the relatively low priority assigned Foods.

Columns 2 and 3 may help to explain why this happened. Evidently between 1950 and 1960 investment in the Food sector was curtailed so drastically that the Food Sector share of total investment declined from 10.5% to 3.2%. Under the 7 year plan of 1959, which proposed a sharp increase in consumer goods, investment in the Foods sector shot up sharply, rising by 48.8% in 1961 alone (see Table IV-34). However, new plans after this period de-emphasized consumer goods and the level of investment in Foods more or less stagnated between 1962 and 1964. By 1965 neglect of capital build-up in this sector was evidently felt quite acutely and annual investment began to rise very sharply, more than doubling between 1965 and 1967. Thus efforts have been made in recent years to make up for a long period of low investment in the 1950s and a shorter

period in the 1960s. For this reason, possibly, the allocation of investment in the Foods sector does not seem to reflect the goals of planners for this sector during the 1960s, especially vis a vis Metal Processing.

Surprisingly large increases in investment in the Foods sector can be contrasted with relatively low increases in such important industry subsectors as energy, general machinery and glass ceramics, all of which experienced lower than average increases within their sectors. In view of the stress given to energy production it is especially remarkable that this subsector's share of total investment declined from 15.9% in 1960 to 11.6% in 1967. It might also be noted that the chemical and electro-technical subsectors seem to have received a smaller infusion of investment than might have been expected in view of the extreme importance attached to these subsectors in planning. According to Table IV-34 chemicals actually experienced a drop in the rate of annual investment between 1967 and 1968.

Aside from these exceptions, however, the manner in which investment was allocated among industry sectors and subsectors during the 1960s seems to correspond fairly well with the stated objectives of the economic planners. Also, industrial investment as a whole seems to have increased at about the rate that was planned in 1963. The objective

was to increase investment annually by about 7.5% between 1963 and 1970, or an increase of about 44% between 1963 and 1968. The actual increase for that period was about 46%.

Another major investment goal, however, was to utilize investment more efficiently. Strong efforts were to be made to reverse the trend of declining capital productivity. Column 6 of Table VI-6 indicates that this goal was met only partially between 1960 and 1966. In general capital productivity for all industry sectors declined by 1966 to 93.8% of the 1960 level. A comparison of columns 5 and 6 shows that the sectors with the highest output/capital ratio in 1960, viz, Metal Processing and Foods, were the only ones to increase their capital productivity in the following period. Capital productivity in the Primary sector was already very low in 1960 and it declined even further in the 1960-1966 period, so that in 1966 it was only 88% of the 1960 level.

Once again, different rates of capital productivity growth made it difficult for planners to allocate new investment in accordance with their structural objectives. As we saw in Chapter IV, if planners had been able to count on average productivity growth in the Primary sector this might have freed more than 5 billion Marks of investment

for other sectors (without sacrificing any production in the Primary sector itself) between 1961 and 1967.

Even within the Primary sector certain subsectors, such as metallurgy, which experienced a substantial decline in capital productivity, may have been given investment funds which could otherwise have been used in more important, and productive subsectors like chemicals. In fact, as we have noted, some subsectors which experienced considerable improvements in capital productivity (e.g. chemicals, general machinery, electro-technical) did not seem to receive increases in investment corresponding to their priority position in planning.

Columns 7 and 8 throw more light on these problems. It is seen there that capital intensity per worker increased more rapidly in such relatively unimportant subsectors as mining and building materials than in energy and chemicals. In the Metal-Processing sector capital intensity increased very little in such a crucial subsector as precision tools and optics. The increase for Metal Processing in general was less than that for the Primary sector.

Thus, while the trend in the 1960s was definitely in the direction of shifting investment resources from

Primary Industry into Metal Processing, much more might have been accomplished if capital productivity had been positive, or at least close to average, in the Primary sector. Undoubtedly East German planners must consider this one of the major problems to be overcome in further planning. It is striking that in 1967 the share of total investment going to the Primary sector was still twice that of Metal Processing, a position which, we will see, is not in keeping with the relative contribution to industry output of these two sectors. It is clear that the mechanisms for allocating investment effectively have not been fully developed up to this point, which helps to explain the reforms that are taking place in the area of capital-based pricing and the efforts being made to relate new investment to productivity and profit.

Table VI-7 illustrates the growth of gross industrial production between 1950 and 1967 and shows to what extent certain planning objectives in the 1963 to 1968 period were met.

Columns 1 and 2 indicate that production in most sectors and subsectors grew much more rapidly in the eight years from 1950 to 1958 than in the same length of time from 1959 to 1967. On the basis of the available data one can say that only two subsectors, energy and printing,

TABLE VI-7

MEASUREMENTS OF ACTUAL AND PLANNED GROSS INDUSTRIAL PRODUCTION (GIP)

| Industry: Sectors
and Subsectors | GIP 1958 as % of 1950 | | | | | Sectoral Shares of GIP 1959 1967 | | | | | Planned GIP 1968 as % of 1963 | | Actual GIP 1968 as % of 1963 | |
|-------------------------------------|-----------------------|------------------|-----|-------------------|------|----------------------------------|------------------|------------------|---|---|-------------------------------|----|------------------------------|----|
| | Column Nos. - | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| I. PRIMARY INDUSTRIES | | 225 ¹ | 153 | 40.1 ³ | 29.4 | 28.6 | 145 ⁴ | 129 ⁵ | | | | | | |
| 1. Energy | | 171 | 173 | | 1.6 | 1.7 | | | | | | | | |
| 2. Mining | | 166 | 100 | | 4.2 | 2.7 | | | | | | | | |
| 3. Metallurgy | | 309 | 115 | | 6.4 | 4.7 | 131 | 95 ⁶ | | | | | | |
| 4. Chemicals | | 246 | 180 | | 15.2 | 17.4 | 154 | 144 ⁶ | | | | | | |
| 5. Building Materials | | 206 ² | 163 | | 2.0 | 2.1 | | | | | | | | |

1 Based on S.J.D.D.R. 1959, pp. 262-263 and 1968, p. 21.

2 Includes glass and ceramics.

3 Source for 1950, W. Stolper, op. cit., p. 262.

4 See Table II-3.

5 Based on Table IV-27.

6 Calculated for 1962-1967.

TABLE VI-7 Continued
MEASUREMENTS OF ACTUAL AND PLANNED GROSS INDUSTRIAL PRODUCTION (GIP)

| Industry: Sectors
and Subsectors | GIP 1958
as % of
1950 | GIP 1967
as % of
1959 | Sectoral Shares of
GIP | Planned
GIP 1968
as % of
1963 | Actual
GIP 1968
as % of
1963 |
|-------------------------------------|-----------------------------|-----------------------------|---------------------------|--|---------------------------------------|
| Column Nos. - | 1 | 2 | 3 | 4 | 5 |
| II. METAL PROCESSING
INDUSTRIES | 292 | 180 | 27.4 | 33.1 | 38.0 |
| 1. Heavy Machinery | - | 171 | | 5.7 | 6.3 |
| 2. General Machinery | - | 194 | | 5.4 | 6.6 |
| 3. Vehicles | - | 146 | | 7.0 | 6.5 |
| 4. Shipbuilding | - | 155 | | 1.9 | 1.9 |
| 5. Castings and
Forgings | - | 134 | | 1.2 | 1.0 |
| 6. Metalwares | - | 194 | | 2.4 | 3.0 |
| 7. Electro-Technical | 369 | 209 | | 7.5 | 10.0 |
| 8. Precision Tools/
Optics | 264 | 206 | | 2.0 | 2.7 |
| | | | | 172 | 1506 |
| | | | | 157 | 138 |

TABLE VI-7 Continued

MEASUREMENTS OF ACTUAL AND PLANNED GROSS INDUSTRIAL PRODUCTION (GIP)

| Industry: Sectors
and Subsectors | Column Nos. - | | | | | | |
|-------------------------------------|-----------------------------|-----------------------------|--|-------|--|---------------------------------------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | GIP 1958
as % of
1950 | GIP 1967
as % of
1959 | Sectoral Shares of
GIP
1950 1959 | 1967 | Planned
GIP 1968
as % of
1963 | Actual
GIP 1968
as % of
1963 | |
| III. LIGHT INDUSTRIES | 203 | 141 | 22.2 | 23.0 | 20.5 | 116 | 119 |
| 1. Woodworking-
Cultural | 200 | 163 | | 3.7 | 3.8 | | |
| 2. Textiles | 213 | 134 | | 9.8 | 8.3 | | |
| 3. Clothing | - | 128 | | 3.4 | 2.8 | | |
| 4. Leather-Fur
Products | - | 142 | | 2.1 | 1.9 | | |
| 5. Cellulose/Paper | 159 | 141 | | 1.7 | 1.6 | | |
| 6. Printing | 130 | 133 | | 1.0 | 0.8 | | |
| 7. Glass/Ceramics | - | 164 | | 1.3 | 1.3 | 180 | 1366 |
| IV. FOOD-DRINK-TOBACCO | 263 | 139 | 10.2 | 14.5 | 12.9 | 112 | 123 |
| ALL INDUSTRIES | 241 | 157 | 100.0 | 100.0 | 100.0 | 140 | 130 |

increased production more rapidly in the second period. The difference between rates of growth in the two periods is most striking in the case of the Primary and Food sectors.

The impact of relative rates of growth on the sectoral share of total production is shown in columns 3-5. Between 1950 and 1959 only the Primary sector experienced a loss in its share of output. In the 1959-1967 period the shares of Light and Food Industry declined along with the Primary industry, and only the Metal Processing sector increased its share of output. This general result seems to be in keeping with the structural goals of economic planners. It is significant that the share of Primary Industry in this latter period did not drop as much as the share of either Light or Food Industry, indicating once again that production in these last two sectors was given a relatively low priority rating.

Most of the subsectors considered very important by planners, such as energy, chemicals, general machinery, electro-technical and precision tools and optics increased their share of production between 1959-1967. However, glass-ceramics just managed to hold its own, and vehicles and metallurgy (where the 2nd stage, for which unfortunately separate data are not available, was considered very important) had a loss in their share.

Therefore, one can say that relative output goals in the period 1959-1967 were largely accomplished by economic planners.

For a few sectors and subsectors absolute output goals were assigned in 1963, generally covering the period 1963 to 1970. Average annual rates of growth have been derived from these projections and applied to the shorter period 1963 to 1968. Comparing these planned rates with actual growth for the same period (or for 1962-67 where 1968 data was not available) allows us to test the extent to which absolute production plans were realized.

Columns 6 and 7 indicate that output goals were met only in the Light and Food Industry sectors, which, ironically, were not given high priority in overall planning, (and which therefore received relatively low, and obviously attainable, output targets).

Industry output as a whole rose by only 30% in the 5 year period compared to the projection of 40%. Growth in the Metal Processing sector was only 38% compared to the projection of 57%. Unfortunately specific data is available for only a few of the "leading" subsectors. Electro-technical reached about 70% of their output target, while chemicals reached about 80%.

It seems clear, therefore that planners were much more successful in attaining relative goals for industry than absolute output goals. The lags in the latter must be considered substantial in light of the importance attached to these industries for the overall stimulation of the economy.

More data on the growth of production and the fulfillment of output plans is available for individual products, and this is summarized in Table VI-8. Average annual growth rates (compound) were calculated for the two periods 1950-1960 and 1960-1967, to compare the production of individual items in these two periods. Next the average annual rate of growth in the 2nd period is compared with annual average growth rate projections. Finally the export-import sectors were included, to discover the degree of correspondence between increases in domestic output and export-import planning. Those goods which were subject to multilateral COMECON agreements are marked with an (x), while those products whose trade was negotiated bilaterally with the U.S.S.R. are marked with (+).

The Table shows, first of all, that the production of almost all products, with the exception of potash and soaps and dyes, increased more rapidly between 1950-1960 than between 1960-67. This is in line with the growth rates for

TABLE VI-8

PLANNED AND ACTUAL RATES OF OUTPUT GROWTH FOR SELECTED INDUSTRIAL PRODUCTS

| Products (and Sectors) | Average Annual Percentage Growth 1950-1960 | Average Annual Percentage Growth 1960-1967 | Planned Average Rate of Growth 1963-1968 | Products in Export Plans | Products in Import Plans |
|----------------------------|--|--|--|--------------------------|--------------------------|
| PRIMARY INDUSTRY | 10.5 ¹ | 5.5 ² | 7.7 | | |
| Energy | 6.9 ¹ | 7.1 ² | | | |
| Electricity | 7.6 | 5.8 | 7.0 | | |
| Mining | 6.6 ¹ | 0 ² | | | |
| Potash and Potassium Salts | 2.3 | 4.1 | | x | |
| Uranium Ore | - | - | | x | |
| Lignite | 5.2 | 1.0 | | x | |
| Hard Coal | -0.3 | -4.3 | | | + |
| Iron Ore | 15.0 | 0.3 | | | + |

Source: Actual Growth Rates: calculated from S.J.D.D.R. 1968, pp. 168-174. Based almost entirely on physical quantities or on values expressed in UPF prices. Planned Growth Rates and Foreign Trade Plans: See Chapt. II C, p. 78 and Chapt. III A, pp. 101-104.

1 1950-1958.

2 1959-1967.

TABLE VI-8 Continued
 PLANNED AND ACTUAL RATES OF OUTPUT GROWTH FOR SELECTED INDUSTRIAL PRODUCTS

| Products (and Sectors) | Average Annual Percentage Growth 1950-1960 | Average Annual Percentage Growth 1960-1967 | Planned Average Rate of Growth 1963-1968 | Products in Export Plans | Products in Import Plans |
|------------------------|--|--|--|--------------------------|--------------------------|
| <u>Metallurgy</u> | 15.0 ¹ | 1.8 ² | 5.6 | | |
| 1st Stage | | | | | |
| Rolled Steel | 13.0 | 2.4 | 4.7 | | + |
| Rolled Plate | 12.0 | -0.5 | | | + |
| 2nd Stage | 21.0 | 8.4 | | | |
| Sheet Metal | - | - | | x | |
| Die Mill Products | - | - | | x | |
| Nickel Products | - | - | | x | |
| Special Steels | | | | | |
| (Steel bar Products) | 25 + | 6.3 | | x + | |
| Magnesium Products | - | - | | x | |

TABLE VI-8 Continued

PLANNED AND ACTUAL RATES OF OUTPUT GROWTH FOR SELECTED INDUSTRIAL PRODUCTS

| Products (and Sectors) | Average
Annual
Percentage
Growth
1950-1960 | Average
Annual
Percentage
Growth
1960-1967 | Planned
Average
Rate of
Growth
1963-1968 | Products
in
Export
Plans | Products
in
Import
Plans |
|-------------------------|--|--|--|-----------------------------------|-----------------------------------|
| <u>Chemicals</u> | 12.0 ¹ | 7.6 ² | 9.0 | | |
| Plastics | | | | x | |
| Synthetic Fibres | 19.5 ³ | 13.5 ⁴ | 6.3 | x | |
| Artificial Fertilizers | 5.3 | 3.8 | 16.5 | | |
| (Phosphate) | | | | x | |
| Synthetic Rubber | 21.0 | 9.1 | | x | |
| Pharmaceutical Products | 8.1 | 3.1 | | | |
| (Penicillin) | | | | x | |
| Soaps and Dyes | 25 + | 11.5 | | | |
| (Soap Powder) | 5.2 | 7.1 | | x | |
| Photo-Chemicals | - | - | | x | |

 3 1955-1960.

4 Includes chemical and synthetic fibres.

TABLE VI-8 Continued

PLANNED AND ACTUAL RATES OF OUTPUT GROWTH FOR SELECTED INDUSTRIAL PRODUCTS

| Products (and Sectors) | Average Annual Percentage Growth 1950-1960 | Average Annual Percentage Growth 1960-1967 | Planned Average Rate of Growth 1963-1968 | Products in Export Plans | Products in Import Plans |
|---------------------------|--|--|--|--------------------------|--------------------------|
| METAL PROCESSING | 14.5 ¹ | 7.6 ² | 9.4 | | |
| <u>Heavy Machinery</u> | | 7.0 ² | | | |
| Automatic Precision Tools | - | - | | x | |
| Mining Equipment | 19.5 | 2.6 | | x | |
| Sugar Factories | - | - | | x | |
| Light rolling mills | - | 10.0 | | x | |
| Cement Equipment | - | -7.5 | | | + |
| Diesel and Gas Motors | 25 + | 7.5 | | + | + |
| Hydraulic Presses | 17.0 | -5.0 | | | |
| Metal Cutting Machines | 19.5 ³ | 5.5 | | | |
| <u>General Machinery</u> | | 8.6 ² | | | |
| For Textiles | 12.5 ³ | -0.5 | 8.8 | x | |
| For Light Industry | 10.5 ³ | 5.8 | 7.0 | x | + |
| For Foods | 11.0 ³ | 5.0 | 12.0 | x | + |
| For Printing | 11.5 ³ | 7.4 | 6.8 | x | |
| For Chemicals | 15.5 ³ | 8.2 | | x | + |
| For Agriculture | 12.5 ³ | 5.8 | | x | + |

TABLE VI-8 Continued

PLANNED AND ACTUAL RATES OF OUTPUT GROWTH FOR SELECTED INDUSTRIAL PRODUCTS

| Products (and Sectors) | Average Annual Percentage Growth 1950-1960 | Average Annual Percentage Growth 1960-1967 | Planned Average Rate of Growth 1963-1968 | Products in Export Plans | Products in Import Plans |
|---------------------------------|--|--|--|--------------------------|--------------------------|
| <u>Vehicles</u> | | 4.9 ² | | | |
| Automobiles | 24.5 | 8.2 | 16.5 | x + | |
| Diesel and Electric Locomotives | 8.5 | 7.5 | | x | |
| Small and medium Trucks | 25 + | 7.9 | | x | + |
| Train Cars | 14.5 | 2.1 | | + | |
| Diesel Vehicles | - | - | | + | |
| <u>Shipbuilding</u> | | 5.6 ² | | | |
| Medium Freighters | - | 6.7 | | x + | |
| Passenger Ships | - | - | | x + | |
| Fishing Vessels | -5.2 | -2.0 | | x | |
| <u>Electro-Technical</u> | 17.5 ¹ | 9.6 ² | 11.5 | | |
| Semi-Conductors | - | 13.5 | 33.0 | | |
| Refrigerators | 25 + | 13.5 | 12.5 | x | |
| Washing Machines | - | 5.0 | 2.0 | | |
| Automatic Devices (Testing) | 15.5 ³ | 13.5 | | x | |

TABLE VI-8 Continued

PLANNED AND ACTUAL RATES OF OUTPUT GROWTH FOR SELECTED INDUSTRIAL PRODUCTS

| Products (and Sectors) | Average Annual Percentage Growth 1950-1960 | Average Annual Percentage Growth 1960-1967 | Planned Average Rate of Growth 1963-1968 | Products in Export Plans | Products in Import Plans |
|-------------------------------|--|--|--|--------------------------|--------------------------|
| <u>Precision Tools-Optics</u> | 13.0 ¹ | 9.4 ² | | | |
| Calculating Machines | 5.9 | 2.6 | | x | |
| Electric (All) Typewriters | 1.5 | -0.5 | | x | |
| Cameras | 14.0 | 0 | | x | |
| <u>LIGHT INDUSTRY</u> | 9.3 ¹ | 4.4 ² | 3.0 | | |
| Glass Ceramics | - | 6.3 ² | 12.5 | | |
| Furniture | 12.5 ³ | 6.0 | 2.9 | | |
| <u>TOTAL INDUSTRY</u> | 11.7 ¹ | 5.9 ² | 7.0 | | |

industry sectors that were observed before.

A comparison of columns 2 and 3 shows that the rate of growth of production failed to keep up in most cases with the planned rate of growth. Thus electrical output increased at an annual average rate of 5.6% between 1960-67 while the planned annual rate for the 1963-68 period was 7.0%. In a few cases, such as synthetic fibres, automobiles, semi-conductors, glass ceramic products, machines for textiles and in the Light Industry and Foods sector, actual growth rates were very much lower than the planned rates. In the case of a few other products, such as plastics, machines for printing, refrigerators, washing machines and furniture actual growth rates exceeded planned rates.

It is difficult to determine from the data to what extent Comecon and bilateral export agreements helped to stimulate domestic production in East Germany. In a few cases, such as potash and potassium salts, and soaps and dyes, export plans may have helped production to grow more quickly between 1960 and 1967 than in the previous period. In the case of many other products, such as special steels, plastics, artificial fertilizers, light rolling mills, machines for printing, chemicals, and agriculture, automobiles, refrigerators, automatic devices, export plans may help to account for substantial increases in production, even where

such increases did not fulfill the expectations of the economic planners. In all these products there appears to be a positive correlation between production and export agreements.

On the other hand, the production of numerous items was not affected very positively by such export arrangements. This is true of machines for textiles, Light Industry and Foods, lignite production, synthetic rubber, mining and cement equipment, electric typewriters, calculating machines, cameras, and fishing vessels. These products all had a very low rate of growth (some experienced an absolute decline in production) despite export orders. The failure to increase output in the case of such precision tool and optics products as calculating machines, typewriters and cameras is especially notable.

We saw in chapter V that trade with Comecon countries expanded more quickly during the 1960's than with other socialist countries and with western countries. It is not clear, however, that trade agreements with Comecon countries are having a noticeable impact on domestic production plans in East Germany. Several writers in East Germany have drawn attention to this problem. They point out that in several instances export agreements have been reached after the annual plans for production were drawn up and there is

no evidence that the plans were changed as a result of the agreements.¹ The evidence of Table VI-8 suggests that there is at the present time little concrete support for the notion that Comecon planning has been integrated successfully into domestic production planning.

Decisions to import goods from the Soviet Union had a fairly noticeable impact on domestic production. Thus, production of such items as hard coal, iron ore, rolled steel, rolled plate, and hydraulic presses experienced an absolute decline in production, or a substantial decline in their growth rate, during the period in which negotiations with the Soviet Union were carried out. Some products, however, like metal cutting machines and machines for chemicals, had high rates of growth even though these goods were being imported from the U.S.S.R. In this case imports were probably used to support growing industries at home which were unable to meet total domestic demand.

¹ This problem is illustrated and discussed by Werner Ross in his Habilitationsschrift at the Oekonomische Hochschule in Berlin Karlshorst, Die...Erfordernisse der Synchronisation der Planungs und Leitungssystem der RGW Laender, 1968. (Cf. p. 29 and p. 34 ff). One East German specialist in investment told the writer that the DDR still produces about 80% of 36,000 different types of machinery and that as long as this condition remains one cannot really speak of effective specialization and integration of production plans in COMECON. Cf. Kaser's book on COMECON for a similar conclusion.

The developments in domestic planning and foreign trade which we have just observed undoubtedly affected regional economic development in East Germany. Several regions, particularly Frankfurt, Neu Brandenburg, Cottbus, Potsdam, Erfurt and Magdeburg increased their share of the Gross Social Product during the 1960s. The success of most of these districts lay in their relatively high rates of growth in such expanding sectors as industry and construction.

Their success did not seem to depend on the position which they occupied in these sectors at the beginning of the decade. We have seen that several districts which were heavily committed to such important sectors as Primary Industry and Metal Processing (e.g. Dresden, Leipzig, and Karl Marx Stadt) did not increase industrial production as quickly as some districts like Neu Brandenburg which were heavily committed at the start of the period to the slower growing Foods sector. Therefore, knowing the structural objectives of economic planners in 1960 would not have enabled one to predict which regions would grow most quickly in the following period. In this broad sense one can say that economic planning did not directly determine the course of economic development in the various districts.

However, upon closer inspection there seems to be a fairly close connection between economic planning, both domestic and foreign, and the relative growth of different regions. Several of the fastest growing districts, such as Frankfurt, Neu Brandenburg and Cottbus may have experienced unusually high rates of growth in this period because of their proximity to the coal, iron ore and oil resources of Poland and the U.S.S.R. and because they are ideally situated for the export of those goods, primarily specialized machines and equipment, which East Germany has been sending to its socialist partners. The development of a petrochemical industry in Schwedt (district of Frankfurt) is directly related to a decision made within the socialist bloc to build the Friendship Oil Line from the U.S.S.R. through Poland to East Germany.

The district of Frankfurt has 12 counties, including the three city counties of Frankfurt, Schwedt and Eisenhuettenstadt. These cities are all located on the Polish border (the latter has been built there since the war) and the last two are by far the most heavily industrialized counties in the district. It is probably more than coincidental that some of the main export commodities such as general and heavy machinery and electro-technical products have been produced at an above average rate in these

centers. The chemical industry has also grown more rapidly in this district than in the economy as a whole.

Neu Brandenburg has 14 counties. Of these the most heavily industrialized is Ueckermuende which borders on Poland and which has 2/3 of its industrial workers engaged in the metal processing industry. Lying right next to it is the county of Neu Brandenburg which is the second most highly industrialized county in the district, specializing in metalwares, electro-technical products and general and heavy machinery.

The district of Cottbus also lies along the Polish border but its economy is probably not as directly linked to the foreign trade sector as the others (it does not lie on the Oder River, as does Frankfurt, nor have a port like Ueckermuende in Neu Brandenburg). Still, the three counties in Cottbus which lie along the Polish border are among the most highly industrialized in the district. As we have seen, the industry of this district is largely based on lignite, which has been a declining industry for the past few years. In this case, as was noted previously, economic planners made a conscious effort to create industrial opportunities for displaced miners. At the same time lignite has remained a vital product for the rapidly expanding energy field so that while mining

itself is declining it supports industries that are considered important by central planners. Because of this the net effect of government structural policies has been to stimulate the growth of industry in Cottbus, just as import-export planning helped to stimulate the industry of Frankfurt and Neu Brandenburg.

The growth of industry in older industrial districts like Erfurt and Magdeburg can also be traced to structural policies. Unlike Dresden, Leipzig, and Karl Marx Stadt, which have specialized in metallurgical production based on coal, Magdeburg and Erfurt lie closest to the large potash and potassium fields of East Germany. Their industry, therefore, is oriented to the chemicals sector which is so much favored by central planners. In this way the relatively quick growth of these two districts can also be related to the structural policies of central planners.

The growth of the district of Potsdam is more difficult to explain. It does not lie on any foreign border and is not closely linked to resources which form the basis of expanding industries. Its growth in the postwar period may be related to its position on the west flank of West Berlin. Prior to the war its industry was geared to

Berlin and was partly overshadowed by it. It is now supplying a market which was largely dominated in the past by Berlin manufacturing.¹

It appears, then, that domestic and foreign trade policies, and special postwar conditions, resulted in the relatively rapid economic growth of certain districts in East Germany in the 1960s. Some of these districts, like Magdeburg and Erfurt, were highly industrialized before. Others, like Neu Brandenburg and Frankfurt, have become fairly important industrial producers for the first time and have likely improved their overall economic position in the country.

Despite such progress it is important to note that several of these districts still account for a very small part of total industrial production in East Germany. In 1967 Frankfurt, Neu Brandenburg, Potsdam and Cottbus had 19.2% of the total population but accounted for only 14.7% of the industrial output in the country.²

¹ G. Schmidt-Renner, Wirtschaftsterritorium Deutsche Demokratische Republik, pp. 304-313.

² S.J.D.D.R. 1969, pp. 75 and 92.

In addition, despite the changes that have occurred the northern districts of East Germany are still far behind most others in their industrialization. The three, Neu Brandenburg, Schwerin and Rostock had 12.2% of the population in 1968 but only 6.6% of the total industrial output.¹

What this means in terms of income difference between regions cannot be answered in detail, but it can be illustrated with a few general observations. First, salaries in industry, transportation and construction are considerably higher in East Germany than salaries for agricultural workers. In 1968 the average monthly salary for a construction worker was 768 M, for a transportation employee 737 M, for an industrial worker 710 M, and for an agricultural laborer 679 M.² The differences between industry and agriculture are probably greater than these figures indicate because the industry figures do not include the higher salaries going to management or the bonuses given to workers and management at the end of the year. Jean Edward Smith cites the example of the managing director in the Riesa Steel Works who earned about 3,500 M a month in 1966 and added about 20% to his income through bonuses if

1 Ibid.

2 Ibid., p. 73. All figures are for state-owned enterprises.

the firm met its profit target.¹

There are also income differences between industrial sectors. One researcher has noted that the lowest salaries in industry were paid to workers in Light Industry and Foods. The latter characterized much of the industry in the northern areas. The highest salaries were paid to workers in heavy industry and to employees in the Primary and Metal Processing sectors generally.² Therefore, the degree and type of industrialization may significantly affect the income of a given district and may result in considerable disparities between different regions.

Further, industrialization seems to involve a larger proportion of the population in productive activity. A special population study in East Germany in 1967 indicated that in several districts less than half of the population earned income through economic activity. These were the districts of Rostock, Schwerin, Neu Brandenburg, Magdeburg, Potsdam, and Frankfurt. With the exception of Magdeburg these were all the least industrialized districts in the

1 Jean Edward Smith, Germany Beyond the Wall, pp. 98-99.

2 Hans Apel, "Income and its Distribution in East Germany", Challenge, Feb. 1955, p. 10.

country.¹

We noted in chapter III B that East German planners have built up the infrastructure of the country in relation to industry, so that the least industrialized districts have received the least public support for the building of roads, public facilities, etc. There is little evidence to suggest that public authorities allocate their resources with the intention of equalizing economic opportunities and development throughout the country. This might happen if the individual districts had as much power to pursue autonomous policies as individual nations have had within the socialist bloc. However, as a recent study has shown, the central government in East Germany largely controls and directs expenditures in such important areas as direct investment, education, and research and development.²

We have seen that economic planning in East Germany, through its stress on the development of industry and on the relatively quick development of certain branches of industry, and its emphasis on the export and import of

¹ Ergebnisse der Volks und Berufszaehlung, December 31, 1964. Staatsverlag, Berlin, 1967, p. 169.

² Frederic L. Pryor, "East and West German Governmental Expenditures," Public Finance Vol. 20, 1965, pp. 300-359.

certain commodities, directly influences the regional economic development of the country. The result has been that some regions which were previously considered very backward, partly for lack of industry and partly because they lacked cultural and social amenities, have been able to improve their position in the country. Other districts have witnessed a decline in their relative position as a result of the same policies. However, those districts which were least industrialized are probably still at a considerable disadvantage, in terms of income, infrastructure, etc., vis a vis the more highly industrialized areas. There is little evidence to suggest that central planners are framing their policies with the specific purpose of overcoming such disparities. In certain instances where a district such as Cottbus faced an acute hardship because of a declining industry planners have consciously buttressed the economy - apparently with good success. There may be more examples like this which show that central planners are far from indifferent to acute problems in particular districts. The fact remains, however, that little or no attention has been given to regional development in the economic plans of the 1960s, though these plans have directly affected the structure of the East German economy and with it the rate of economic development in the various regions.

CHAPTER VII

A COMPARISON OF STRUCTURAL CHANGES IN EAST AND WEST GERMANY

In the preceding chapters we analyzed the relationship between economic planning and structural changes in East Germany. This involved a comparison of specific planning objectives at the beginning of a period with the structural changes that occurred by the end of the period.

In general there seemed to be a fairly good correlation between economic planning and structural change. However, since the analysis was confined to East Germany several questions could not be answered. It could not be determined, for example, whether some of the problems which East German planners encountered were unique to the East German system or whether they are found in other industrialized countries as well. Can one say that the apparent inability of planners to shift capital resources from primary industry to metal processing in the amounts desired is a failure of planning, or does it simply reflect the highly capital-intensive nature of primary industry in all advanced industrial economies? An examination of structural changes in West German industry may help us to formulate at

least tentative answers to such questions.

If East German planners had been completely successful in realizing their structural objectives it would still be impossible to tell, from a study of the East Germany economy alone, whether planning was really responsible for the observed changes. The well known fact that even perfect correlations are not proof of cause and effect relationships is extremely important in this situation. Economic planners might, for example, establish their plans in accordance with technical conditions and demand requirements which are common to all industrial societies. Structural changes might be interpreted then as responses to such general conditions, not the result of the economic planning itself. The point is that thousands of individual businessmen in a market economy might have responded to the same technical and market conditions as the economic planners in the planned economy, with similar consequences for the structure of industry.

That this is more than just a theoretical possibility is demonstrated by Gerhard Schulz's book, Technische Revolution und Strukturwandel in der Industrie. The author deals in this book with technical and structural changes in the most highly advanced industrial countries

in the world. His purpose is to enable economists and planners in East Germany to identify those products, techniques, and industrial sectors which are growing more quickly than others and which, in their contribution to the growth of other sectors as well, can be looked at as "key" sectors and products for economic planning. One of the prime purposes of planners, as Schulz sees it, is to stimulate those sectors in East Germany which are proving to be so crucial in other industrial countries.

There is good reason to think that this book reflects the viewpoint of leading economists and planners in East Germany. It has been repeated recently by another East German economist, Rudolf Reichenberg.¹ It reflects the Marxian-Leninist view (seen as a universal law) that industrial growth depends upon the above-average development of the producer-goods section.² There is nothing surprising, therefore, about the attention given to capitalist developments by socialist planners.

After a detailed analysis of structural change in such countries as the United States, Japan, England, and West Germany Dr. Schulz observes that the key industries, in approximately the following order, are: chemicals, oil and natural gas, metal processing, heavy machinery, metallurgy, non-ferrous metal production, mining, and

¹ Rudolf Reichenberg, Struktur und Wachstum der Abteilungen I und II im Sozialismus, Dietz, 1968.

² Ibid, p. 23 ff. Cf. the conclusion to this thesis.

light industry.¹ From this he draws the conclusion that it is these sectors that must be stimulated most vigorously by economic planners in a socialist state.

He notes that the order of the fastest growing sectors and subsectors in East German industry from 1955 to 1964 was very similar to the order found in these industrial countries, with a few important exceptions. Because of their virtual absence in the East German resource base, oil and natural gas do not enjoy the position which they have in many other economies. Furthermore, in 1964 the chemical and energy sectors ranked ninth and eighth respectively, in terms of rates of growth, in East Germany. Schulz maintained in 1965 that because these sectors ranked much more highly in other industrial countries something would have to be done in East Germany to improve their performance, and with it their relative position in industry.²

1 G. Schulz, op. cit., p. 160.

2 Ibid, p. 200. Our data for the period 1959 to 1967 shows that chemicals ranked fifth in rate of growth, and the energy sector ranked sixth, a clear improvement over their position in the earlier period covered by Schulz.

This deliberate attempt to emulate industrial production in other countries makes it extremely difficult to judge the effectiveness of East German planning. If anything, there is a bias in this kind of evaluation against economic planning. If east German industry is not developing in a fashion similar to that of other countries one will be inclined to say that the failure is due to planning. If it is, one may argue that this is all that can be expected from an industrial country. After all, it is the East German economists who say that there are basic common features in all highly developed industrial societies.

Therefore, the effort to link economic planning to structural change may easily end in considerable frustration, even if another country's development is drawn into the analysis. What this analysis enables us to do, however, is to develop one more correlation between planning and structural change, viz, a correlation between planning and the development of East German industry along lines characteristic of other developed economies.

An attempt at such correlation involves comparisons which are filled with serious conceptual problems. One problem is that of accounting and pricing, which was discussed in Chapter II. It is practically impossible to

compare absolute production figures for the two countries. Despite appearances to the contrary one would not be able to say from Table VII-1 for example, that economic output grew more quickly in East Germany between 1960 and 1967 than in West Germany. Instead of making comparisons of this kind we will analyze and compare structural changes taking place within each country. Our concern is not with the rate of growth of industry in East Germany vis a vis industry in West Germany, but with the rate of growth of industry in East Germany vis a vis the rate of growth of other sectors in East Germany. The same holds true for our analysis of West Germany. It is the relative growth and position of different sectors in each economy that will be compared. The use of West German data which has been adjusted for price changes, and the use of East German data which has similarly been adjusted for changes in planning prices, enables us to attach some significance to this type of comparison.

A second conceptual problem is posed by the use of different industry classification systems in the two countries. We will give some attention to this problem when dealing specifically with the industrial sector.¹

¹ For a West German comparison see, W. Libbert: "Zur mitteldeutschen industriellen Produktionsstatistik im Vergleich zur Bundesrepublik," VHWF Nr. 3, 1961, p. 255 ff.

Fortunately the systems are similar and adaptable enough to permit some general, useful comparisons.

The structures of the two economies are illustrated in Table VII-1. The basic difference between them in 1960 was the greater importance of the industrial sector in West Germany (61.4% of total output, exclusive of service industries, vs. 56.4% in East Germany), and the more important position of agriculture in East Germany (16.4% of total output vs. 7.7% in West Germany).

In the period 1960-67 industry grew more rapidly than any other sector in West Germany, while the construction sector, whose share of output declined in West Germany, grew most quickly in East Germany. It is interesting to note that construction grew more quickly than industry in West Germany between 1950-59.¹ This may mean that its growth in East Germany will slow down relative to other sectors as the East German economy continues to expand in the next decade.

In 1960-67 both construction and industry in East Germany grew at or above average rates for the whole

¹ Growth in construction was 149% and in industry 122% based on data in S.J.B.R.D. 1969, p. 210.

TABLE VII - 1

GROWTH AND SHARE OF PRODUCTION BY ECONOMIC SECTOR WEST AND EAST

GERMANY, 1960 - 1967

| Sector | WEST GERMANY ¹ | | | | EAST GERMANY ² | | | |
|-------------------------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|--------------------------------|--|--|
| | % of
total
output
1960 | % of
total
output
1967 | 1967 output
as % of
1960 | % of
total
output
1960 | % of
total
output
1967 | 1967 output
as % of
1960 | | |
| Industry | 61.4 | 63.0 | 133.2 | 56.4 | 59.2 | 140 | | |
| Agriculture | 7.7 | 6.8 | 114.2 | 16.4 | 13.9 | 114 | | |
| Construction | 6.8 | 6.6 | 126.1 | 7.0 | 7.6 | 156 | | |
| Trade | 16.4 | 16.7 | 132.7 | 13.0 | 12.4 | 132 | | |
| Transportation and
Communication | 7.7 | 6.9 | 117.3 | 5.5 | 5.2 | 131 | | |
| Other Producing Sectors | - | - | - | 1.6 | 1.7 | 152 | | |
| Total of All Sectors | 100.0 | 100.0 | 129.8 | 100.0 | 100.0 | 140 | | |

¹ Calculated from Gross Domestic Production figures, at 1954 prices, from S.J.B.R.D. 1969, p. 501.

² Calculated from Net National Product figures, which are similar to Gross Production figures in W. Germany, based on indexes adjusted for price changes, S.J.D.D.R. 1969, p. 40. "Other producing sectors" includes a few service industries, such as public laundries, appliance repair shops, etc. The service sector was excluded from the W. German accounts to make them more comparable to E. German figures. The service sector in West Germany grew more quickly than any other sector between 1960 and 1967 (1967 output = 140% of 1960).

economy. During this time the share of industry in East Germany grew more rapidly than the share of industry in West Germany, even though the industrial sector continued to be more important in the latter country than in the former. The fact, however, that industry's share of total output in East Germany increased by 2.8 percentage points in this interval while it grew by only 1.6 percentage points in West Germany indicates that a convergence of the economic structures in this important respect is taking place.

In fact, apart from the trade and construction sectors, whose shares of total output in the two countries moved in opposite directions in 1960-67, the two structures seem to be developing in very similar ways. There is a notable similarity in the share of each sector, apart from trade and agriculture.

This type of comparison can now be extended to the industrial sector of each country. Fortunately for our purposes West German statisticians divide the greatest portion of industrial output into four major sectors, which are similar in many respects to the four major industrial sectors in East Germany (before 1968). The following juxtaposition of the two systems illustrates this:

WEST GERMANYEAST GERMANY

| | | |
|---------------------------------------|---|--------------------|
| Primary Materials &
Producer Goods | = | Primary Industry |
| Capital Goods | = | Metal Processing |
| Consumer Goods | = | Light Industry |
| Food-Drink-Tobacco | = | Food-Drink-Tobacco |

These broadly similar categories, however, mask some important differences. First, the Primary Materials and Producer Goods sector in West Germany does not include mining and energy. In general we have tried to make the West German data conform to the East German system, so that in the following analysis we have included mining and energy in the West German primary sector wherever possible.¹ Second, while the chemicals subsector is listed in the Primary Materials sector in West Germany, as it is in East Germany, it does not include such important branches as mineral oil, asbestos and rubber, and plastics. The latter, in fact, is found in the Consumer Goods sector. Once again, wherever possible, an attempt has been made to include these branches in chemicals so that it conforms to the chemical subsector in

¹ It is not possible when the data is based on index series in the S.J.B.R.D.

East Germany. It was not possible to reconcile all the differences. For example, certain types of aluminum production are included in chemicals in East Germany but are found in the metallurgical subsector in West Germany. Not enough detail is available to make the necessary adjustments.

The Capital Goods sector in West Germany corresponds quite closely to the Metal Processing sector in East Germany. No distinction is made between general and heavy machinery so these have been combined in the East German statistics to conform to the West German practice. Further, it is difficult to identify casting and forgings as a separate category in the West German statistics, so that this subsector has either been dropped or included among "others" in the following presentation. The Consumer Goods and Food-Drink-Tobacco sectors are very similar in both countries, with the major exception that plastics is included in Consumer Goods in West Germany. We have already indicated the adjustments made for this.

On the basis of these adjustments, then, some comparisons can be made between the industrial structures of the two countries. We have generally used East German terms in the following analysis to stand for similar

sectors and subsectors in both countries, with the understanding that they have been adjusted in accordance with the above observations and that they are never completely comparable.

Table VII-2 indicates the relative position of the different sectors and subsectors in East and West German industry in 1950, 1960 (1959) and 1967. In 1950 Primary industry was the most important sector in both countries, followed closely by Metal Processing and Light industry. Between 1950 and 1960 the share of Primary industry fell in both countries and the share of Metal Processing increased. The share of Light industry fell in both countries, especially in West Germany. A similar decline occurred in Food-Drink-Tobacco. Therefore, in the period 1950 to 1960 there were very similar shifts in the structures of both economies.

A comparison of shifts in the share of subsectors during that period leads to a similar conclusion. In both countries such subsectors as mining, metallurgy, textiles, leather products, pulp and paper, printing, and glass-ceramics lost part of their share of total output. In both countries such subsectors as machinery, vehicles, shipbuilding, metalwares, electro-technical, precision

TABLE VII-2

GROWTH AND SHARE OF PRODUCTION IN WEST AND EAST
 GERMAN INDUSTRY, 1950-1967. SHARE OF EMPLOYMENT
 AND INVESTMENT, 1967.

| Sectors and
Subsectors | WEST GERMANY ¹ | | | | | EAST GERMANY ² | | | | |
|----------------------------------|---------------------------|------------------------|------------------------|---------------------------------|---------------------------------|---------------------------|------------------------|------------------------|---------------------------------|---------------------------------|
| | % of
Output
1950 | % of
Output
1960 | % of
Output
1967 | % of
Employ-
ment
1967 | % of
Invest-
ment
1967 | % of
Output
1955 | % of
Output
1959 | % of
Output
1967 | % of
Employ-
ment
1967 | % of
Invest-
ment
1967 |
| PRIMARY
INDUSTRY ³ | 34.1 | 32.5 | 37.0 | 29.9 | 56.6 | 30.4 | 29.4 | 28.6 | 26.9 | 59.3 |
| Energy
(Electricity
Gas) | - | - | 4.8 | 2.9 | 17.2 | 1.6 | 1.6 | 1.7 | 2.5 | 11.6 |

¹ Data for 1950 and 1960 is calculated from G. Schulz, Technische Revolution und Struktur Wandel, pp. 290-291, Net Product in 1950 prices. Figures for 1967 output calculated from S.J.B.R.D. 1969, pp. 195 and 231. These are sales figures, which are close to gross production figures. Employment data is calculated from Ibid, pp. 201 and 231 and Investment data Ibid, pp. 197 and 231.

² Data for 1959 and 1967 derived from Tables IV-26 and IV-28. For 1955, G. Schulz, op. cit., p. 201

³ Includes Mining; but does not include energy for 1950 and 1960.

TABLE VII-2 Continued
 GROWTH AND SHARE OF PRODUCTION IN WEST AND EAST
 GERMAN INDUSTRY, 1950-1967. SHARE OF EMPLOYMENT
 AND INVESTMENT, 1967.

| Sectors and Subsectors | WEST GERMANY | | | | EAST GERMANY | | | |
|----------------------------|--------------|-------------|------------------|-------------|--------------|------------------|-------------|------------------|
| | % of Output | % of Output | % of Invest-ment | % of Output | % of Output | % of Invest-ment | % of Output | % of Invest-ment |
| | 1950 | 1960 | 1967 | 1967 | 1955 | 1959 | 1967 | 1967 |
| PRIMARY INDUSTRY CONTINUED | | | | | | | | |
| Mining | 8.3 | 4.8 | 2.8 | 5.3 | 4.5 | 4.2 | 2.7 | 6.7 |
| Metallurgy ¹ | 7.7 | 7.3 | 9.5 | 7.9 | 8.6 | 6.4 | 4.7 | 4.2 |
| Chemicals | 13.0 | 16.6 | 16.5 | 9.8 | 23.3 | 15.2 | 17.4 | 10.4 |
| Building | | | | | | | | |
| Materials ² | 5.1 | 3.8 | 3.4 | 4.0 | 3.0 | 2.0 | 2.1 | 3.2 |
| | | | | | | | | 3.6 |

¹ Includes plastics, mineral oil, rubber and asbestos, and cellulose production treated separately in the original data.

² Includes timber in addition to earth and rock products.

TABLE VII-2 Continued

GROWTH AND SHARE OF PRODUCTION IN WEST AND EAST GERMAN INDUSTRY,
1950-1967. SHARE OF EMPLOYMENT AND INVESTMENT, 1967.

| Sectors and
Subsectors | WEST GERMANY | | | | | EAST GERMANY | | | | |
|----------------------------|----------------|----------------|----------------|-------------------------|-------------------------|----------------|----------------|-------------------------|-------------------------|------|
| | % of
Output | % of
Output | % of
Output | % of
Employ-
ment | % of
Invest-
ment | % of
Output | % of
Output | % of
Employ-
ment | % of
Invest-
ment | |
| | 1950 | 1960 | 1967 | 1967 | 1967 | 1955 | 1959 | 1967 | 1967 | 1967 |
| METAL PROCESS-
ING | 24.9 | 33.6 | 33.5 | 40.3 | 25.0 | 29.2 | 33.1 | 38.0 | 39.1 | 23.9 |
| Machinery | 8.0 | 9.0 | 10.7 | 11.9 | 7.3 | 10.0 | 11.1 | 12.9 | 14.5 | 9.4 |
| Vehicles | 3.7 | 8.0 | 6.2 | 6.3 | 6.8 | 6.4 | 7.0 | 6.5 | 5.4 | 4.2 |
| Shipbuilding | 0.5 | 0.7 | 0.7 | 1.0 | 0.4 | 1.8 | 1.9 | 1.9 | 1.4 | 0.6 |
| Metalwares | 4.8 | 5.0 | 3.5 | 5.0 | 2.4 | 2.0 | 2.4 | 3.0 | 3.3 | 1.5 |
| Electro-
Technical | 4.8 | 8.2 | 8.1 | 10.1 | 5.6 | 5.8 | 7.5 | 10.0 | 8.8 | 4.5 |
| Precision Tools/
Optics | 1.2 | 1.3 | 1.0 | 1.8 | 0.8 | 1.9 | 2.0 | 2.7 | 4.0 | 2.0 |
| Others | 1 | 1.4 | 3.3 | 4.3 | 1.7 | 2 | 1.2 | 1.0 | 1.7 | 1.7 |

1 Includes steel constructions, and (in 1967) airplane construction.

2 Includes castings and forgings.

TABLE VII-2 Continued

GROWTH AND SHARE OF PRODUCTION IN WEST AND EAST GERMAN INDUSTRY,
1950-1967. SHARE OF EMPLOYMENT AND INVESTMENT, 1967.

| Sectors and Subsectors | WEST GERMANY | | | | | EAST GERMANY | | | | |
|------------------------|--------------|-------------|-------------|-----------------|-----------------|--------------|-------------|-----------------|-----------------|------|
| | % of Output | % of Output | % of Output | % of Employment | % of Investment | % of Output | % of Output | % of Employment | % of Investment | |
| | 1950 | 1960 | 1967 | 1967 | 1967 | 1955 | 1959 | 1967 | 1967 | 1967 |
| LIGHT INDUSTRY | 23.2 | 18.7 | 15.1 | 23.8 | 9.6 | 24.0 | 23.0 | 20.5 | 26.7 | 10.4 |
| Woodworking- | | | | | | | | | | |
| Cultural | 2.6 | 2.4 | 2.4 | 3.5 | 1.3 | 3.6 | 3.7 | 3.8 | 5.1 | 1.7 |
| Textiles | 11.0 | 7.6 | 4.6 | 6.5 | 3.3 | 10.5 | 9.8 | 8.3 | 9.8 | 3.7 |
| Clothing | 2.6 | 2.7 | 2.6 | 5.1 | 0.8 | 3.3 | 3.4 | 2.8 | 3.7 | 0.3 |
| Leather | | | | | | | | | | |
| Products | 2.2 | 1.6 | 1.2 | 2.1 | 0.5 | 2.2 | 2.1 | 1.9 | 2.4 | 0.6 |
| Pulp & Paper | | | | | | | | | | |
| (Cellulose) | 1.2 | 1.1 | 1.3 | 1.6 | 1.1 | 1.9 | 1.7 | 1.6 | 2.1 | 1.8 |
| Printing & Duplicating | 2.1 | 1.9 | 1.8 | 2.8 | 1.5 | 1.0 | 1.0 | 0.8 | 1.3 | 0.5 |
| Ceramics & Glassware | 1.5 | 1.4 | 1.2 | 2.2 | 1.1 | 1.4 | 1.3 | 1.3 | 2.4 | 1.8 |
| FOOD-DRINK-- | | | | | | | | | | |
| TOBACCO | 17.8 | 15.3 | 14.4 | 6.0 | 8.8 | 16.4 | 14.5 | 12.9 | 7.3 | 6.4 |

tools and optics increased their share. Not only did these subsectors move in the same direction but the degree of change was often quite similar. Thus, in both countries the share of mining dropped considerably and in both the share of electro-technical products increased considerably. All in all there seems to be a fairly striking similarity in the structural changes that took place in the two economies.

At the same time there were several important exceptions to this parallel movement. In West Germany, for example, the share of chemical production increased considerably, while it remained virtually stagnant in East Germany. In West Germany the building materials subsector declined in importance while it gained a larger share of output in East Germany (reflecting the different rate of construction activity in the two countries noted previously). In West Germany the vehicle subsectors increased its share considerably while in East Germany the share went up very little. Therefore, one can say that in certain crucial subsectors like chemicals and vehicles (possibly also energy production, for which, unfortunately, the tables derived from Schulz gave little information) West Germany achieved relatively greater growth than East Germany, while in the subsector which supported the rapidly growing construction

industry the East German growth rate was relatively higher than that in West Germany.

Table VII-2 also illustrates shifts in the sectors and subsectors of industry in the period 1960 to 1967. Before we look at these we can gain some understanding of the relative rates of growth of the different sectors in this period by observing the data in Table VII-3. This Table reveals some surprising shifts between the period 1959-1967 and the period 1950-1960. The relative growth rates of the major sectors changed considerably in West Germany. The fastest growing sector in 1959-67 was the Primary sector, followed by Food-Drink-Tobacco, Capital Goods, and Consumer Goods. The sectors are ranked according to growth in the margins and their growth rates, expressed as index numbers, are given as well. In East Germany the relative rates of growth remained very similar to the period 1950-1967, which means that in the period 1959-67 they were considerably different from West Germany's.

The subsector breakdown gives some clues as to why this happened. If one compares the rates of growth of various subsectors in the Primary sector with subsectors in the Metal Processing Sector it becomes clear that in West Germany such primary subsectors as chemicals and energy (electricity) expanded more quickly during this

TABLE VII-3

GROWTH OF INDUSTRIAL PRODUCTION IN WEST GERMANY AND
EAST GERMANY BY SECTORS AND SUBSECTORS, 1959 - 1967

| WEST GERMANY | | | EAST GERMANY | | |
|-----------------------------|----------------------------------|------------------------|----------------------------------|-----------------------------|--|
| Rank (in
Growth
Rate) | Growth
(1967 as %
of 1959) | Sectors | Growth
(1967 as %
of 1959) | Rank (in
Growth
Rate) | |
| 1 | 166 ¹ | Primary Industry | 153 | 2 | |
| 3 | 140 | Metal Processing | 180 | 1 | |
| 4 | 139 ² | Light Industry | 141 | 3 | |
| 2 | 145 | Food-Drink-Tobacco | 139 | 4 | |
| | | <u>Subsectors</u> | | | |
| 2 | 181 | Electricity | 173 ⁶ | 2 | |
| 5 | 94 | Mining | 100 | 5 | |
| 4 | 126 | Metallurgy | 115 | 4 | |
| 1 | 213 ³ | Chemicals | 180 | 1 | |
| 3 | 141 | Building Materials | 163 | 3 | |
| 5 | 130 | Machinery | 186 | 4 | |
| 2 | 151 | Vehicles | 146 | 6 | |
| 6 | 106 | Shipbuilding | 155 | 5 | |
| 3 | 144 | Metalwares | 194 | 3 | |
| 1 | 163 | Electro-Technical | 209 | 1 | |
| 4 | 134 | Precision Tools | 206 | 2 | |
| | | Optics | | | |
| 4 | 145 | Woodworking | 163 | 2 | |
| 6 | 121 | Textiles | 134 | 5 | |
| 5 | 132 | Clothing | 128 | 7 | |
| 7 | 74 | Leather Products | 142 ⁴ | 3 | |
| 1 | 156 | Cellulose, Pulp, Paper | 141 | 4 | |
| 3 | 149 | Printing | 133 | 6 | |
| 2 | 154 ⁵ | Glass-Ceramics | 164 | 1 | |

Source: Calculated from S.J.B.R.D. 1969, pp. 210-213
and from tables in chapt. IV.

- 1 Does not include mining, energy, or plastics.
- 2 Includes plastics.
- 3 Includes plastics, rubber and asbestoes, and mineral oil.
- 4 Includes fur products.
- 5 Only glass holloware.
- 6 Also includes gas.

TABLE VII-4
GROWTH IN PRODUCTION IN SELECTED BRANCHES OF
INDUSTRY IN WEST AND EAST GERMANY, 1959-1967

| WEST GERMANY | | | EAST GERMANY | |
|--------------|--|----------------------------------|--|------|
| Rank | 1967 Net
Production
as % of 1959 | Branch | 1967 Gross
Production
as % of 1959 | Rank |
| 19 | 86 ¹ | Coal Mining | 92 ² | 19 |
| 18 | 95 | Metallurgy | 92 | 18 |
| 2 | 308 | Synthetic Fibres | 212 | 5 |
| 1 | 313 | Plastics | 293 | 2 |
| 12 | 133 | Rubber & Asbestos Products | 193 | 7 |
| 3 | 291 | Mineral Oil | 162 ³ | 13 |
| 5 | 214 ⁴ | Pharmaceuticals | 222 | 4 |
| 13 | 121 | Steel Structures | 169 | 11 |
| 15 | 116 | Machines for Metal
Processing | 378 | 1 |
| 17 | 100 | Machines for Agriculture | 177 | 8 |
| 14 | 117 | Machines for Food | 249 | 3 |
| 10 | 140 | Machines for Light
Industry | 151 | 15 |
| 16 | 115 | Trucks | 210 | 6 |
| 4 | 221 ⁵ | Automobiles | 168 | 12 |
| 11 | 137 | Furniture | 172 ⁶ | 9 |
| 9 | 143 | Musical Instruments, Toys | 151 | 14 |
| 7 | 150 | Breweries | 128 | 16 |
| 6 | 165 | Wines & Spirits | 171 | 10 |
| 8 | 146 | Tobacco Products | 107 | 17 |

Source: cf. Table VII-3.

1 All coal mining.

2 Lignite Production.

3 Includes tar.

4 Includes soaps, cosmetics, etc.

5 Automobiles for consumers.

6 Includes Upholstery.

period than any of the subsectors in Metal Processing. On the other hand, in East Germany chemicals and energy did not grow as quickly as such Metal Processing subsectors as precision tools and optics, electro-technical, metalwares, and machinery. In West Germany the machinery and precision tools and optics subsectors grew particularly slowly during this period, compared to other subsectors. For the Primary and Metal Processing sectors combined the following were the fastest growing subsectors in each country:

| <u>West Germany</u> | <u>East Germany</u> |
|----------------------|----------------------------|
| 1. Chemicals | Electro-technical |
| 2. Energy | Precision Tools and Optics |
| 3. Electro-technical | Metalwares |
| 4. Vehicles | Machinery |
| 5. Metalwares | Chemicals |

Table VII-4 throws more light on these developments. In terms of rates of growth the five leading branches in each country were:

| <u>West Germany</u> | <u>East Germany</u> |
|---------------------|-------------------------------|
| 1. Plastics | Machines for Metal Processing |
| 2. Synthetic Fibres | Plastics |
| 3. Mineral Oil | Machines for Foods |
| 4. Automobiles | Pharmaceuticals |
| 5. Pharmaceuticals | Synthetic Fibres |

Of the five leading branches in West Germany, including the three leaders, four were in the chemicals sector.¹ In East Germany only three were, and their relative rates of growth place them in the 2nd 4th and 5th positions. In West Germany machine building was not among the fastest growing branches, while in East Germany two categories of machines were. Thus, in the period 1960-1967 West German production of primary goods and capital goods did not move parallel to these sectors in East Germany. In terms of planning objectives vis a vis the example of West Germany, the East Germans seem to have been relatively successful in promoting the output of machine goods but not so successful in expanding their chemical, energy, and vehicles sectors.

Table VII-3 also indicates that the Light and Food industries in the two countries did not move in parallel fashion in the 1960s. In West Germany Food-Drink-Tobacco grew more quickly than Light (Consumer) goods, while in East Germany, though there was only a slight difference in their rate of growth, the opposite was the case.

¹ The index of growth for chemicals in Table VII-3 does not include plastics, rubber and asbestos products and mineral oil. They are added here for purposes of comparison.

Again, the greater detail of Table VII-4 helps to illuminate these trends. Among the fastest growing branches of West Germany during this period were such food branches as breweries, wines and spirits, and tobacco products. In fact, in terms of rate of growth they ranked next to the five leading branches in primary industry and metal processing.¹ In East Germany, on the other hand, these branches ranked considerably lower in the scale, behind such light-industry branches as furniture and upholstery and musical instruments (although wines and spirits grew slightly more rapidly than the latter). It is significant that what might be called luxury items have been growing most quickly in the consumer sector of West German industry while they have been growing relatively less quickly in East Germany. (This is also indicated by the rapid growth of automobile production in West Germany, relative to trucks, and the relatively rapid growth of truck production in East Germany).

Turning back to Table VII-2 we see how these relative rates of growth have affected the shares of industry sectors and subsectors between 1960 and 1967. Unfortunately the method of arriving at these comparative shares is such that

¹ It should be noted that a few branches uniquely important to West Germany are not included in Table VII-4 (e.g. oil refining), in order to make all listed items comparable.

they do not always reflect very accurately the rates of growth over the whole period. First, the shares are based on individual years, 1960 and 1967. It so happens that several important subsectors in West Germany, such as vehicles, and chemicals did not grow at their average rate for the whole period in 1967. In fact, vehicle production actually declined in 1967, as did the electro-technical industry and metalwares. Machinery building also declined but not as much as the latter industries, so that in that year its share did not reflect its relatively low rate of growth in West Germany during the whole period. The chemical industry grew more rapidly in 1966 and 1968 than in 1967 so that its share in 1967 does not reflect its relatively high rate of growth over the whole period. These are problems that are faced in any comparison of this kind, but account must be taken of them in the further analysis.

The share of West German sectors and subsectors in 1967 as over against previous periods is also affected by the inclusion of energy production in the 1967 totals. This would result, *ceteris paribus*, in the decline of all subsector shares between 1960 and 1967. Further, some differences may result from the use of the year 1959 in the growth indexes and the year 1960 in the share comparisons.

Because of this the 1967 share data for West Germany must be interpreted cautiously. For East Germany there are fewer conceptual problems. First, 1967 growth progressed at a rate close to average for the period (see Figure IV-1) and the energy sector was included in all calculations. Keeping this in mind the following pattern of changes in shares emerges:

a) Subsectors Declining in Both Countries:

Mining, Textiles, Clothing, Leather Products, Printing, Vehicles.

b) Subsectors Growing in Both Countries:

Energy, Chemicals, Electro-Technicals, Woodworking.

c) Subsectors Declining (or stagnating) in West Germany and Growing in East Germany:

Building Materials, Machinery, Metalwares, Precision Tools and Optics.

d) Subsectors Declining (or stagnating) in East Germany and Growing in West Germany:

Metallurgy.

It seems that in most subsectors the movement in both countries was in the same direction. Where they diverge a fairly ready explanation is possible. The relatively rapid growth of building materials and machinery goods

in East Germany can be explained in terms of the stress placed on construction and on machinery production in East Germany by economic planners, both for domestic production and to meet East Germany's commitments in Comecon. The relatively heavy emphasis on metallurgy in West Germany reflects the superior iron-ore and coal position of that country.

The columns in Table VII-2 which show the shares of total industrial employment and gross investment allocated to the different sectors and subsectors in 1967 permit some additional interesting comparisons.

Listed below are those sectors and subsectors in each country which received a larger share of both labor and investment than the same sector or subsector in the other country.

Sectors and Subsectors
with Greater Share of
Industrial Employment
and Gross Industrial
Investment in West Germany
Than in East Germany

Sectors and Subsectors
with Greater Share of
Industrial Employment
and Gross Industrial
Investment in East Germany
Than in West Germany

Energy

Machinery

Metallurgy

Shipbuilding

Metal Processing

Precision Tools/Optics

Vehicles

Light Industry

Metalwares

Woodworking-Cultural

Electro-technical

Textiles

Clothing

Leather Products

Printing & Duplicating

Pulp and Paper

Ceramics and Glassware

In terms of investment funds alone, the chemicals subsector and the Food-Drink-Tobacco sector received a larger share in West Germany than in East Germany, while in East Germany such favored treatment was given to the Primary Industry sector and to the mining and building materials subsectors.

Taken together these results confirm some of the impressions gained from our previous look at relative sectoral growth rates in the two countries. We noted the stress on energy, chemicals, metallurgy, vehicles, and

food production in West Germany. The additional data above reveal that stress has also been placed on light consumer products such as clothing and printing, in which style and marketing play an important role. In East Germany we noted the stress placed on machinery, precision tools and optics, ceramics and glassware and building materials. We also noted that light industry production was declining more quickly in West Germany, relative to other sectors, than was the case in East Germany. We note here that this is confirmed by the relatively favored position of light industry in East Germany in terms of share of employment and investment. Within light industry stress has been placed on the production of goods which are often one stage removed from final consumer demand, e.g. pulp and paper instead of printing, textiles instead of clothing.

The list also contains several surprises. In light of the stress given to metal processing in East Germany, and the persistent effort to move at least somewhat from primary production to metal processing, it is surprising that the primary industry sector was favored with investment funds, relative to the same sector in West Germany, and the Metal Processing sector was less favored relative to West Germany. It appears that a very heavy concentration

of investment funds in mining, compared to West Germany, is the main reason for the relative stress on Primary industry in East Germany. The heavy stress on vehicle production in West Germany largely accounts for the relatively favored position of Metal Processing there. As we have seen before, the high cost of mining in East Germany has apparently forced East German planners to channel more resources into that subsector, and consequently more into the Primary sector as a whole and less into the Metal Processing sector, than their plans called for.

The importance attached to the electro-technical field in West Germany, vis a vis the same field in East Germany, is also somewhat surprising. East German plans have placed very great emphasis on this field but it appears that investment and labor allocations still do not reflect this concern. Also, the heavy emphasis placed on chemical production in East German planning is not supported by a relatively heavy infusion of investment funds in this field.

In general it can be said that the share of investment and employment allocated to the different sectors and subsectors is very similar, despite the differences just noted. Thus, 56.6% of all industrial investment in

West Germany was allocated to the Primary Sector in 1967, while the corresponding figure for East Germany was 59.3%. In West Germany 25.0% of investment funds were allocated to metal processing, while the corresponding figure for East Germany was 23.9%. On the basis of such comparisons, and using several statistical measurements of correspondence, Manfred Melzer concluded in 1968 that there was no significant difference between the structures of the two economies.¹ He observed that the differences which exist, such as those noted above, seem to be increasing since 1960 but the similarities in the two systems are still more notable than the differences.

Something can also be learned from Table VII-2 by juxtaposing the share of industrial output and the share of employment and investment in each sector and subsector. This gives us a measurement of relative labor and capital intensity in the production of these sectors in the two countries.

For our present purposes we can define a labor intensive sector as one in which the share of total industrial employment (L) is greater than the share of industrial output (Y). (Or, $\frac{L}{Y} > 1$). We can say that a

¹ Manfred Melzer, "Das Anlagevermoege der mittel-deutschen Industrie 1955 bis 1966", VHWF 1968, Nr. 1, pp. 105-132.

capital intensive sector is one in which the share of total industrial investment (I) is greater than the share of industrial output (Y). (Or, $\frac{I}{Y} > 1.$)

Table VII-5 illustrates the ratios derived in this way for selected subsectors and sectors in West and East Germany in 1967. It indicates that in both countries the Primary Sector was capital intensive (by our definition) and the other sectors were not. Within the Primary sector the energy, mining, and chemicals subsectors were capital intensive in both countries, especially energy.

In both countries mining, building materials, metal processing machinery, metalwares, precision tools and optics and light industry were labor intensive (by our definition).

This serves to indicate some of the limitations within which planners must operate. There would appear, for example, to be a very definite limit to the extent to which capital resources can be moved out of the capital intensive primary sector into the metal processing sector.

However, the ratio data also indicates that in several sectors and subsectors in East Germany capital (in the form of new investment) was used much less

TABLE VII-5

RATIO OF SHARE OF LABOR FORCE AND INVESTMENT TO SHARE
OF OUTPUT IN SELECTED SUBSECTORS IN WEST AND EAST

GERMANY, 1967

| | WEST GERMANY | | EAST GERMANY | |
|------------------------|---------------|---------------|---------------|---------------|
| | $\frac{L}{Y}$ | $\frac{I}{Y}$ | $\frac{L}{Y}$ | $\frac{I}{Y}$ |
| PRIMARY SECTOR | 0.8 | 1.5 | 0.9 | 2.1 |
| Energy | 0.6 | 3.6 | 1.5 | 6.8 |
| Mining | 1.9 | 1.6 | 2.5 | 6.0 |
| Metallurgy | 0.8 | 0.9 | 0.9 | 1.8 |
| Chemicals | 0.6 | 1.4 | 0.6 | 1.1 |
| Building Materials | 1.2 | 0.9 | 1.5 | 1.7 |
| METAL PROCESSING | 1.2 | 0.7 | 1.0 | 0.6 |
| Machinery | 1.1 | 0.7 | 1.1 | 0.8 |
| Vehicles | 1.0 | 1.1 | 0.8 | 0.6 |
| Shipbuilding | 1.4 | 0.6 | 0.7 | 0.3 |
| Metalwares | 1.4 | 0.7 | 1.1 | 0.5 |
| Electro-Technical | 1.2 | 0.7 | 0.9 | 0.5 |
| Precision Tools/Optics | 1.8 | 0.8 | 1.5 | 0.7 |
| LIGHT INDUSTRY | 1.6 | 0.6 | 1.3 | 0.5 |
| FOOD-DRINK-TOBACCO | 0.4 | 0.6 | 0.6 | 0.5 |

efficiently than in West Germany. This is the case where the $\frac{I}{Y}$ ratio was higher in East than in West Germany, as was true especially in energy, mining, metallurgy and building materials.

The way in which these ratios are used as a measure of efficiency can be illustrated with the following hypothetical example. Assume that investment (i = absolute value of investment, not a share) in each country is the same per cent of total industrial output (y = industrial output as an absolute value, not a share), or $i = 1/4 y$. Assume further that $\frac{1}{10} i$ in West Germany ($\frac{1}{10}$ of total industrial investment, = I) results in the production of $\frac{1}{20} y$ (= $\frac{1}{20}$ of total industrial output, = Y).

In West Germany, then, the ratio of

$$\frac{\text{share of investment}}{\text{share of output}} = \frac{I}{Y} = \frac{\frac{1}{10}}{\frac{1}{20}} = 2. \quad \text{At the}$$

same time productivity can be measured in terms of the contribution of y used as investment in industry to the production of y . Thus, if $i = \frac{1}{4} y$ and $\frac{1}{10} i$ produces $\frac{1}{20} y$,

one can say that $\frac{1}{10} \times \frac{1}{4} = \frac{1}{40} y$ produces $\frac{1}{20} y$, or $\frac{1}{40} y$

as capital investment produces $\frac{1}{20} y$ as industrial output.

The output/investment ratio is then equal to

$$\frac{\frac{1}{20}}{\frac{1}{40}} = 2.$$

Meanwhile, if in East Germany $\frac{1}{10}$ i results in the production of $\frac{1}{30}$ y, and if i is also 25% of y, then the

$$\text{the } \frac{I}{Y} \text{ ratio} = \frac{\frac{1}{10}}{\frac{1}{30}} = 3, \text{ and the output/investment}$$

$$\text{ratio is equal to } \frac{\frac{1}{30}}{\frac{1}{10} \times \frac{1}{4}} = 1 \frac{1}{3}.$$

In the above case, the $\frac{I}{Y}$ ratio in East Germany is 1.5 times as great as the same ratio in West Germany, and the output ratio in West Germany for this hypothetical investment

sector is exactly 1.5 times as great as in East Germany.

Therefore, the difference between the $\frac{I}{Y}$ ratios in the two countries is inversely related to the difference in their output/investment ratios. If East Germany's $\frac{I}{Y}$ ratio is greater in a given sector than West Germany's, one can say that West Germany is using its capital investment more efficiently in that sector than East Germany by the amount of that difference.

We assumed in this example that investment in both countries was the same proportion of industry output. It can be shown that if one country (e.g. West Germany) devoted only half as much of its industry output (y) to investment (i) as East Germany, then if the $\frac{I}{Y}$ ratios in the two countries were the same West Germany would be using its capital investment twice as efficiently as East Germany.¹ Conversely, in this case one might say that given equal $\frac{I}{Y}$

1 E.G. if $i = 20\%$ of y in East Germany and 10% of y in West Germany, then if in both countries $\frac{1}{10}$ i produces $\frac{1}{20}$ y , the $\frac{I}{Y}$ ratio in both countries = $\frac{\frac{1}{10}}{\frac{1}{20}} = 2$. However,

the output/investment ratio in West Germany = $\frac{\frac{1}{20}}{\frac{1}{10} \times \frac{1}{10}} = 5$

and the output/investment ratio in East Germany = $\frac{\frac{1}{20}}{\frac{1}{5} \times \frac{1}{10}} = \underline{2.5}$

or one half that of West Germany's.

ratios East Germany is apparently using its capital investment that particular year half as efficiently as West Germany.

This example was chosen because it reflects what appear to be the true conditions in industrial investment in East and West Germany in 1967.

According to data in the statistical yearbooks of both countries (see Table VII-2 for sources) West German gross investment in industry in 1967 was about 6% of total industrial sales. In that same year gross investment in East Germany was about 17% of net production in industry. The difference between the two ratios may be exaggerated by different accounting methods and by the use of net production figures in the case of East Germany and total sales in West Germany. However, other evidence suggests, that the ratio of industrial investment to industrial output is probably at least twice as great in East Germany at the present time than in West Germany.¹

¹ Zauberman notes that in the fifties the ratio of gross investment to GNP was about 24% in East Germany and 26% in West Germany, but Melzer shows that industrial investment equals only about $\frac{1}{4}$ of total investment in West Germany, but more than half in East Germany. (A. Zauberman, op. cit., p. 40, and Manfred Melzer, op. cit., p. 109).

This means that compared to West Germany, investment capital in such subsectors as energy, mining, metallurgy and building materials, and particularly in the Primary sector as a whole, was used rather inefficiently in East Germany. The performance in chemicals and in the other industrial sectors was much better, although a higher $\frac{I}{Y}$ ratio in West Germany than in East Germany in some of these fields does not necessarily mean that West Germany was using its capital investment less efficiently, unless the ratio was at least twice as high.¹

It appears, then, that East Germany has been stymied to some extent in its attempt to place investment funds where the highest priorities lie, and to emulate the structure of a modern industrial economy like West Germany's by the relatively poor use of investment resources in the Primary industry sector. Therefore, what was said before in relation to the performance of this sector vis a vis other sectors in East Germany is now confirmed by this comparison with West Germany.²

¹ Which it practically is in the vehicles and shipbuilding subsectors.

² This is by no means an indictment of the planning system itself. We have indicated in several places the relatively poor resource base with which East German planners have had to contend. The evidence here is simply further proof of the difficulties which they are facing.

CONCLUSION

Economic planning does not operate in a vacuum. Neither does it follow objectives and allocate resources in a mechanical or automatic way. In attempting to direct the course of economic development in their country East German planners have had to contend with a number of important geographical and historical conditions. They have also been guided by several prime objectives which have been dictated partly by those conditions and partly by the unique economic philosophy which underlies the socialist East German state.

Among the conditions faced by planners have been the dislocations caused by the war, the separation from East Germany of a large part of Germany's pre-war territory, the need to forge new economic links with countries which had previously contributed little to its economic development, a poor supply of such basic industrial resources as hard coal, iron ore, hydro electric power, natural gas and oil, and a declining, badly structured labor force.

These conditions have forced economic planners to devote scarce capital and labor resources to the

production of goods, especially primary products, where the output/factor ratio could not be expected to reach levels found in other advanced industrial nations. Expensive high-temperature coking of brown coal, for example, has given East Germany the highest coal-consumption rate per ton of pig iron in Europe.¹ The capital productivity data presented in this study reflect these conditions very clearly.

In the production of goods to which the economy might otherwise be well suited, such as building materials and machinery, the structure and virtual stagnation of the labor force has forced planners to substitute capital for labor to an extent that would not be justified under more favorable conditions. In addition to using productive factors inefficiently because of this, they have been unable to allocate more factors to areas which were given a high planning priority and which promised better returns. We have given some indication in this paper of the high costs to the economy of such limiting conditions.

There have, of course, been more positive conditions as well. Before the war part of the territory which is now East

1 A. Zauberman. Industrial Progress, p. 184.

Germany was one of the most industrialized areas in the world.¹ It was a leader in the production of synthetic gasoline and rubber, in optical goods (centered around the Zeiss firm in Jena) and in the production of electrical equipment. Leipzig was a world publishing center and the potash and rock salt of the Halle region and the copper ore of the Harz and Erz mountain ranges supported important chemical and metal processing industries. In addition the area was agriculturally self-sufficient.

During the war East German industry shifted from a primary emphasis on light industry to heavy machine industry (known as the "Luftkriegswirtschaft" or "air war industry").² It emerged from the war as a major producer of engineering goods, a position which must be regarded in retrospect as distinctly advantageous in the socialist bloc of countries.

However, the heavy reparations payments after the war, the lack of some important constituent elements in the rapidly changing chemical industry³, and above

1 Cf. Stephen M. Hirst and Leon Lewins. Basic Data on the Economy of the Soviet Zone of Germany, pp. 5-8.

2 A. Zauberger, op. cit; p. 32.

3 See Alfons Metzner, Die Chemische Industrie der Welt, Vol I, pp. 190-208.

all the loss of much skilled labor which had been the basis of its specialized industry, all seriously eroded the position which East Germany had held before and during the war. Manufacturing plants had to be rebuilt, a large new labor force had to be trained and the social and health needs of a comparatively aged population had to be met.¹

In formulating their objectives economic planners in East Germany have been necessarily influenced by the conditions just described, and by concerns which are rooted in socialist economic theory. The latter has given rise to at least three important economic objectives:

1. The development of a truly socialist state in which state ownership of the means of production is harnessed effectively for the benefit of the people by a well-organized planning system.
2. The development of the economy in keeping with the fundamental theories of Marx and Lenin.

¹ The median age for males is just over 30 and that for women is just over 38. In a normally growing population these median ages are found in the mid-twenties. Cf. Hirst and Lewins, op. cit; p. 2.

3. The creation of an effective international socialist economy in which national planning is coordinated with international trade.

The first half of the first objective, state ownership of resources, was largely accomplished, as we have seen, by the early 1960s. The second half of that objective, the development of an effective planning system, has been more difficult to realize. We have noted two basic problems: the establishment of a rational pricing system which is based on the true relative costs of goods and which takes account of the real cost of capital resources, and the effective communication of instructions in a planning structure which has become extremely complex.

The impact of these problems on the desired allocation of resources is practically impossible to measure, but the great stress which has been placed on their solution, through numerous reorganizational efforts and new pricing policies in the past decade, indicates very clearly that East German planners do not underestimate it. The failure to reverse the decline in capital productivity, which in turn has forced planners to allocate resources in ways which do not reflect their highest priorities, can be attributed at least in part to problems which

planners are encountering in this area.

The second objective, the development of the economy in keeping with the theories of Marx and Lenin, requires a word of historical background. According to socialist theory rapid industrial growth can only be accomplished when, in Marxian terminology, Part I of the economy (the "producer goods" or capital goods sector, as opposed to Part II, the consumer goods sector) continually outpaces that of consumer goods.¹ Part I of the economy includes raw materials in addition to capital goods but it is assumed that the share of raw materials in total production declines as the economy advances so that it is the producer goods sector whose share must increase. By "producer goods" is meant particularly the energy sector, metals, chemicals, building materials and metal processing.

As Zauberman points out this law of development is

¹ Marx and Lenin made these observations about capitalist industrial societies but it has come to be considered an inherent feature or law of all industrial communities, including socialist countries. For an East German interpretation of the law see R. Reichenberg, Struktur und Wachstum der Abteilungen I und II im Sozialismus, p. 9 ff. A good western summary is found in A. Zauberman, op. cit.; p. 23 ff.

substantiated, at least in part, by recent developments in most industrial countries. Basing his remarks on a 1960 United Nations study of industrial growth he observes that in the first half of the 20th century the "heavy industries" increased their share in Western European manufactures from about 1/5 to close to 1/2. At the same time the share of typical light industries like textiles was reversed.¹ According to the U.N. study heavy industry made the greatest gains in output among all manufacturing industries over the two decades 1938-1958.

Our comparison of East and West Germany showed that the West German economy has also been characterized by the very rapid development of the primary goods sector. A writer in the 1950s attributed much of the success of the post-war West German economy to the stress that has been placed on the development of heavy industry in her industrial structure.²

In emulating successful western economies, therefore, East German planners are following Marxian principles which

¹ A. Zauberman, *Ibid*, p. 30. The U.N. report is entitled Patterns of Industrial Growth, 1953-1958 (New York, 1960).

² H.C. Wallich, Mainsprings of the German Revival (Yale U.P.; 1955), quoted in Zauberman, Ibid, p. 31.

were based on observations made in the 19th and early 20th centuries and which seem to have been confirmed by the most recent experiences of the most highly advanced industrial countries. This helps to explain the very heavy emphasis placed on the development of the Primary and Metal Processing sectors in East German industry.

There are, however, several important problems connected with the interpretation and application of this law. First, the industrial classification system used to delineate Parts I and II of the economy may obscure fundamental changes taking place within these parts. For example, the chemical sector in most countries has become a major producer of consumer goods, and yet in East German accounting it has until recently been included almost entirely in the Producer Goods sector.¹ The increased share of primary industry in West Germany, noted in Table VII-2, can be attributed in part to the inclusion of plastic products in chemicals to make this sector conform more closely to East German usage. Without such a transfer the increase would have been minimal. Other important branches of chemicals, such as synthetic fibres, are also developed

¹ Even the new ELN system, p. 36, places consumer goods like plastics and synthetic fibres into the chemicals sector, and it places the latter among the producer goods sectors.

primarily for the consumer market. Therefore, the classification system that is used may help to give the impression that the law is operative when in fact true producer goods are becoming a smaller part of the total producer goods sector.

A second problem arises from the element of disproportionality which is implicit in the law. We have noted the stress placed on "leading sectors" (or "Schluessel Industrien" - "key industries") by East German economists. This, of course, is implicit in the emphasis placed on the rapid development of the producer goods sector. Zauberman observes that this theory of economic development is actually quite similar to the "chain of disequilibria" which Hirschman has postulated for developing countries.¹ As Hirschman and others have argued, "unbalanced" growth may in fact be the best long-run method of stimulating the overall growth of an economy. In an economy which is fairly well advanced already certain problems may, however, result from such a method. We have noted in this study the cycles of investment which were apparent in the East German economy in the 1960s. In order to stimulate growth in consumer industries in the course of

¹ See Albert O. Hirschman, The Strategy of Economic Development, New Haven, 1958, p. 65 ff.

the seven year plan (effective from 1959-1962) relatively heavy investments were placed into that sector. Then with the plan of 1963, which represented in effect a return to the law of the disproportional development of the producer goods sector, investment in consumer goods and in the infrastructure of the economy was neglected. A larger share of resources was channeled into primary industry and metal processing.¹ By 1966 it appears that this process had been carried too far and very heavy infusions of capital investment were needed once more in the consumer goods sector and for the support of the infrastructure, at the expense of important producer goods sectors like chemicals.

The law of the disproportional development of the producer goods sector has had other far reaching effects on economic planning and on the structure of the East German economy. There has been considerable debate in the socialist countries around the absolute nature of this law and its timelessness.² Does it apply more forcefully in the first stages of industrialization than in later stages?

1 Cf. p. 325.

2 Reichenberg summarizes some of the recent development in this debate in his book, op. cit.; p. 9 ff. Cf. A. Zauberman, op. cit.; p. 23 ff. for a description of recent developments in Poland.

Does it operate as immutably and to the same degree in socialist countries as in capitalist societies? Is it primarily a "quantitative" description of industrialization or can it be adapted to include qualitative factors as well?

Attempts to answer these questions have directly influenced planning objectives in East Germany. Most writers seem to feel that the law applies to industrial societies at any given stage, but that its form is modified by social and technological conditions. Thus, Reichenberg argues that it contains a universal principal (the need to produce capital goods at an above average rate in order to stimulate industrial production as a whole) and a specific condition. The latter applies to the position of consumer goods. In capitalist countries, Reichenberg maintains, the latter sector is held back both by the application of the universal principle and by the exploitation of the consumer by the capital producers. In a socialist state the universal principle would be operative but the consumer sector should not fare as badly in the long run because the specific condition of consumer exploitation should be removed.

It is, of course, extremely difficult to determine whether this is actually happening in the East German

economy. The comparison with West Germany showed that light industry has been declining more quickly in West Germany than in East Germany, but the Food-Drink-Tobacco sector has been growing much more quickly, relative to other sectors, in West Germany than in East Germany. A complete measurement of consumer goods production would have to include the development of service industries, for which there is comparatively little data in East Germany, and the import and export of consumer goods.¹ Future assessments of economic planning may well consider the extent to which this hope of socialist planners has been realized.²

Technical conditions also modify the operation of the Marxian law. One of the main concerns of Gerhard Schulz, whose book has been used extensively in this thesis, is to add a qualitative, technical dimension to this law. His position is supported by Reichenberg and by many other economists who have taken part in the debate. It represents, in effect, an attack on the crude quantitative way in which the law had often been interpreted. Some planners in socialist countries seemed to feel that the mere accumulation

1 As both Zauberman (pp. 32-33) and Reichenberg (p. 20) observe, the law of the preferential growth of the producer goods sector rests on a tacit assumption of a closed economy, Cf. the concluding remarks of this section.

2 Higher profit rates for foods and beverages than for light industry in several western countries, associated it seems with greater firm concentration, may account for the relative growth of the foods sector in West Germany (Cf. Financial Post of Canada, May 18, 1968, p. 19.

of capital goods, regardless of their technical level and their suitability to the production of final goods, was an adequate guarantee of industrial progress. Satisfaction was felt if it could be shown that gross production in primary industry and metal processing (Part I of the economy) was growing more rapidly than production in the other sectors. The attack of Schulz and others on this "tonnenideologie" has led to a subtle yet important change in planning objectives. Some writers have gone so far as to maintain that qualitative changes in producer goods are more important than the quantitative proportion of such goods, so that the economy might progress even though in quantitative terms the share of producer goods was falling.¹ Though this appears to be a minority view, planners have obviously begun to place much greater emphasis on qualitative improvements in capital goods.

This explains the tremendous effort being made to increase the production of electro-technical goods and precision tools and optics, which are considered the carriers of technical improvements. It also explains the strong

¹ Reichenberg discusses these various viewpoints (op. cit.; pp. 48-49) and comes to his own personal conclusion, which still seems to reflect the majority opinion, that the share of producer goods must continue to rise in quantitative terms even though greater stress than before should be placed on qualitative changes.

emphasis on such sectors as chemicals and energy. The concern is no longer to increase production of primary industry and metal processing as a whole, but to expand particular fields within these sectors, especially those which can change industry in a qualitative way. Therefore an evaluation of structural change and planning for the last decade has required an examination not only of sectoral changes but changes in subsectors, branches, and even individual products.

Hampered by the conditions mentioned previously East German planners have not been able to stimulate production in such crucial sectors as chemicals, energy production and even electro-technical goods to the extent that they wished, but in relative terms they appear to have been highly successful in re-structuring the economy along the lines suggested. In general, as we have seen, they have apportioned investment and labor resources to the various sectors in shares which approximate those of West Germany. With these modifications of the development theory of Marx and Lenin they have sought to realize the second socialist objective which we mentioned.

A third objective has been the creation of an effective international organization in which national planning might be coordinated with international trade. As we have

seen, an attempt has been made to accomplish this through bilateral agreements with socialist partners and through COMECON, which in theory is meant to be a multilateral trading organization.

The possibility of expanding foreign trade in this way led socialist theorists to a further modification of the law of the disproportional development of the producer goods' sector. In theory, utilizing the potentials of comparative advantage, some socialist countries could achieve rapid industrial growth with a very heavy emphasis on producer goods but without neglecting the consumer field, simply by exchanging producer goods for consumer products. Their trading partners might then advance industrially as well even though they would pay more attention to consumer goods than to the producer sector.

This theory of international specialization has, unfortunately, run into numerous roadblocks. Since 1964 most socialist countries have apparently decided to give first attention to the broad development of their industry, presumably applying the Marxian law on producer-goods priority in each case, and second attention to the benefits of international trade. As we have noted, East Germany continues to produce a vast assortment of machines and other industrial products, and there is evidence that up

to the present time at least there is often little direct relationship between export-import agreements and domestic planning. The East Germans appear to have been forced to continue the intensive mining of lignite because they have found it difficult to maintain a high level of hard coal imports from their socialist partners.¹

Despite these problems strenuous efforts are being made to improve international trade, and much has already been accomplished. Trade as a whole has been expanding more rapidly than industrial production and the trading sector has become especially significant for the rapidly expanding metal processing sector. Here there seems to be a strong tie between Comecon trade and domestic production.

The impact of foreign trade can also be traced in regional development. It appears from our analysis that the rapid growth of several districts within East Germany is related to population movements and to the position of these districts in relation to East Germany's major trading partners. Little effort has apparently been made

¹ Thus, there was an increase in mining in the period 1964-67, reversing an earlier decline in production, even though productive factors were used relatively inefficiently in the process (Cf. p. 178).

to develop the various districts proportionately, but economic planning, in the way just mentioned, has profoundly affected their development. Primary concern seems to be focused at the present time on the effective utilization of resources and overhead capital in such dense population centres as Leipzig, Dresden and Karl-Marx-Stadt which experienced a relative decline in the past decade.

It can be said in conclusion that integration of national planning with international trade, and the integration of national planning with regional development remain some of the least adequately explored and developed areas of East German planning. Within the domestic system numerous problems continue to exist but planners seem to have been quite successful in structuring important resources and industrial output in keeping with their socialist planning objectives.

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APPENDIX

TABLE A-1

PRIMARY INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARKS UNCHANGING PLAN PRICES)

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|---------------------------------------|-----------|-----------|-----------|-----------|-----------|
| ENERGY: | 1,022,095 | 1,200,917 | 1,346,789 | 1,480,725 | 1,765,796 |
| Electricity
and Gas | 1,018,731 | 1,196,996 | 1,346,789 | 1,480,725 | 1,765,796 |
| MINING: | 2,699,227 | 2,729,965 | 2,979,858 | 2,597,211 | 2,696,086 |
| Hard Coal and
Coke | 182,523 | 187,554 | 192,077 | 162,809 | 139,605 |
| Lignite Coal,
Coke and
Briquets | 1,678,653 | 1,831,014 | 1,999,285 | 1,531,699 | 1,541,161 |
| Iron-Ore Mines | 37,315 | 34,604 | 35,338 | | |
| Non-ferrous
Metal Mines | 211,203 | 10,269 | 9,986 | 10,918 | 8,626 |
| Potash and Salt
Mines | 378,840 | 396,721 | 429,375 | 480,490 | 521,614 |
| METALLURGY: | 4,134,790 | 4,825,967 | 5,072,907 | 4,272,188 | 4,752,448 |
| Iron and Steel | 3,451,726 | 3,788,306 | 4,043,232 | 2,912,968 | 3,172,505 |

TABLE A-1 Continued

PRIMARY INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARKS UNCHANGING PLAN PRICES)

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|-----------|------------|------------|------------|------------|
| CHEMICALS: | 9,744,293 | 11,302,349 | 12,981,730 | 15,055,751 | 17,542,023 |
| Basic chemicals,
organic and
inorganic | 2,495,570 | 2,951,984 | 3,342,901 | 3,702,419 | 4,097,008 |
| Specialized
Products | | | | | |
| (e.g. films) | 2,265,681 | 2,474,691 | 2,769,655 | 3,145,863 | 3,645,680 |
| Plastics | 479,784 | 637,373 | 789,674 | 972,547 | 1,405,825 |
| Pharmaceuticals | 505,637 | 678,059 | 832,771 | 1,120,985 | 1,120,028 |
| Rubber and
Asbestos Goods | 1,670,745 | 1,984,948 | 2,341,115 | 2,813,110 | 3,223,275 |
| Synthetic
Fibres | 564,772 | 649,577 | 759,133 | 882,627 | 1,197,059 |
| Mineral Oil and
Tar | 1,762,104 | 1,816,966 | 1,941,737 | 2,418,200 | 2,853,148 |
| BUILDING
MATERIALS: | 1,268,973 | 1,462,269 | 1,567,013 | 1,898,774 | 2,073,484 |
| Concrete Products | | | | 772,450 | 791,093 |

TABLE A-1 Continued

PRIMARY INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|-------------------------------------|------|-------|-------|-------|-------|---|
| ENERGY: | 100 | 117.5 | 131.8 | 144.9 | 172.8 | 7.1 |
| Electricity and Gas | 100 | 117.5 | 132.2 | 145.4 | 173.3 | 7.1 |
| MINING: | 100 | 101.1 | 110.4 | 96.2 | 99.9 | 0 |
| Hard Coal and Coke | 100 | 102.8 | 105.2 | 89.2 | 76.5 | -2.6 |
| Lignite Coal, Coke and
Briquets | 100 | 109.1 | 119.1 | 91.3 | 91.8 | -1.0 |
| Iron-Ore Mines | 100 | 92.7 | 94.7 | - | - | - |
| Non-ferrous Metal Mines | 100 | 4.9 | 4.7 | 5.2 | 4.1 | - |
| Potash and Salt Mines | 100 | 104.7 | 113.3 | 126.8 | 137.7 | 4.1 |
| METALLURGY: | 100 | 116.7 | 122.7 | 103.3 | 114.9 | 1.8 |
| Iron and Steel | 100 | 109.8 | 117.1 | 84.4 | 91.9 | -1.0 |

TABLE A-1 Continued
PRIMARY INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|---|------|-------|-------|-------|-------|---|
| CHEMICALS: | 100 | 116.0 | 133.2 | 154.5 | 180.0 | 7.6 |
| Basic chemicals, organic
and inorganic | 100 | 118.3 | 134.0 | 148.4 | 164.2 | 6.4 |
| Specialized Products
(e.g. films) | 100 | 109.2 | 122.2 | 138.9 | 160.9 | 6.1 |
| Plastics | 100 | 132.9 | 164.6 | 202.7 | 293.0 | 14.5 |
| Pharmaceuticals | 100 | 134.1 | 164.7 | 221.7 | 221.5 | 10.5 |
| Rubber and Asbestos
Goods | 100 | 118.8 | 140.1 | 168.4 | 192.9 | 8.6 |
| Synthetic Fibres | 100 | 115.0 | 134.4 | 156.3 | 212.0 | 9.9 |
| Mineral Oil and Tar | 100 | 103.1 | 110.2 | 137.2 | 161.9 | 6.2 |
| BUILDING MATERIALS: | 100 | 115.2 | 123.5 | 149.6 | 163.4 | 6.3 |
| Concrete Products | 100 | - | - | - | - | - |

TABLE A-2

METAL PROCESSING INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARKS UNCHANGING PLAN PRICES)

| Industry Subsectors and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|
| HEAVY MACHINERY | 3,657,400 | 4,247,107 | 4,854,576 | 5,577,073 | 6,254,125 |
| Power Machines | 965,083 | 1,166,621 | 1,167,548 | 1,290,531 | 1,410,597 |
| Machine Tools | 579,124 | 700,894 | 819,776 | 883,570 | 1,006,028 |
| Transportation Equipment | 483,758 | 563,372 | 636,417 | 730,266 | 816,369 |
| Steel Structures | 549,559 | 652,809 | 685,475 | 692,748 | 784,892 |
| GENERAL MACHINERY FOR | 3,431,940 | 4,467,635 | 5,223,248 | 5,871,017 | 6,663,173 |
| Primary Industry | 345,758 | 461,627 | 507,952 | 558,617 | 638,465 |
| Metal Processing Industry | 47,444 | 59,308 | 115,436 | 139,449 | 179,441 |
| Light Industry | 509,603 | 575,657 | 646,591 | 661,888 | 768,988 |
| Food Industry | 400,830 | 617,400 | 737,954 | 890,883 | 998,922 |
| Construction Industry | 127,811 | 154,127 | 172,095 | 180,421 | 207,110 |
| Agriculture and Forestry | 611,076 | 807,312 | 893,302 | 985,239 | 1,080,989 |

TABLE A-2 Continued

METAL PROCESSING INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARKS UNCHANGING PLAN PRICES)

| Industry Subsectors and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|-----------|-----------|-----------|-----------|-----------|
| VEHICLES: Manufacture and Repair of: | 4,462,637 | 5,098,321 | 6,043,154 | 5,746,358 | 6,534,661 |
| Steam, Diesel & Electrical | | | | | |
| Locomotives | 542,082 | 564,034 | 651,226 | 421,151 | 475,872 |
| Rail and Street Cars | | | | | |
| Trucks | 1,015,155 | 1,062,151 | 1,188,903 | 822,097 | 848,129 |
| Automobiles | 925,652 | 1,146,275 | 1,431,756 | 1,609,547 | 1,943,512 |
| Tractors | 996,318 | 1,170,429 | 1,428,343 | 1,532,907 | 1,670,643 |
| | 398,755 | 557,038 | 703,801 | 631,604 | 823,154 |
| SHIPBUILDING: Manufacture and Repair of: | 1,192,548 | 1,212,400 | 1,383,388 | 1,727,669 | 1,849,751 |
| Ocean and Coastal Ships | 778,832 | 771,933 | 809,909 | 955,216 | 1,054,405 |
| Inland Ships | 40,402 | 49,037 | 52,633 | 56,667 | 57,659 |
| Fishing Ships | 297,684 | 297,481 | 345,860 | 508,998 | 518,183 |
| CASTINGS AND FORGINGS: | 762,341 | 879,381 | 911,411 | 978,305 | 1,024,328 |

TABLE A-2 Continued

METAL PROCESSING INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARKS UNCHANGING PLAN PRICES)

| Industry Subsectors and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|-----------|-----------|-----------|-----------|------------|
| METALWARES: | 1,565,121 | 1,892,269 | 2,230,251 | 2,548,777 | 3,039,696 |
| ELECTRO-TECHNICAL: | 4,839,853 | 5,923,084 | 7,181,783 | 8,507,253 | 10,119,194 |
| Electrical machines, transformers and switches | 1,033,161 | 1,186,028 | 1,385,819 | 1,587,363 | 1,836,758 |
| Cables and electrical materials | 696,380 | 802,032 | 927,667 | 1,086,293 | 1,199,097 |
| Other Electrical Products | 845,125 | 1,050,325 | 1,255,164 | 1,534,683 | 1,839,980 |
| PRECISION TOOLS/OPTICS: | 1,340,388 | 1,507,691 | 1,802,268 | 2,253,027 | 2,758,177 |
| Office Machines | 396,482 | 440,719 | 528,022 | 689,970 | 854,546 |
| Measuring Instruments and Watches | 312,072 | 331,071 | 432,396 | 616,802 | 747,850 |
| Optical Instruments | 392,096 | 410,518 | 479,563 | 542,018 | 651,201 |

TABLE A-2 Continued

METAL PROCESSING INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|-------------------------------------|------|-------|-------|-------|-------|---|
| HEAVY MACHINERY: | 100 | 116.1 | 132.7 | 152.5 | 171.0 | 7.0 |
| Power Machines | 100 | 120.9 | 121.0 | 133.7 | 146.2 | 4.9 |
| Machine tools | 100 | 121.0 | 141.6 | 152.6 | 173.7 | 7.1 |
| Transportation Equipment | 100 | 116.5 | 131.6 | 151.0 | 168.8 | 6.8 |
| Steel Structures | 100 | 118.8 | 124.7 | 126.1 | 142.8 | 4.5 |
| GENERAL MACHINERY: for | 100 | 130.2 | 152.2 | 171.1 | 194.2 | 8.6 |
| Primary Industry | 100 | 133.5 | 146.9 | 161.6 | 184.7 | 8.0 |
| Metal-Working Industry | 100 | 125.0 | 243.3 | 293.9 | 378.2 | 18.0 |
| Light Industry | 100 | 113.0 | 126.9 | 129.9 | 150.9 | 5.3 |
| Food Industry | 100 | 154.0 | 184.1 | 222.3 | 249.2 | 12.0 |
| Construction Industry | 100 | 120.6 | 134.7 | 141.2 | 162.0 | 6.3 |
| Agriculture and Forestry | 100 | 132.1 | 146.2 | 161.2 | 176.9 | 7.4 |

TABLE A-2 Continued

METAL PROCESSING INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual Rate
of Growth
1959-1967 |
|---|-------|-------|-------|-------|-------|--|
| VEHICLES: Manufacture
and Repair of: | | | | | | |
| 100 | 114.2 | 135.4 | 128.8 | 146.4 | 4.9 | |
| Steam, Diesel & | | | | | | |
| Electrical Locomotives | 100 | 104.1 | 120.1 | 77.7 | 87.8 | -1.5 |
| Rail and Street Cars | 100 | 104.6 | 117.1 | 81.0 | 83.6 | -1.9 |
| Trucks | 100 | 123.8 | 154.7 | 173.9 | 210.0 | 9.7 |
| Automobiles | 100 | 117.5 | 143.4 | 153.9 | 167.7 | 6.6 |
| Tractors | 100 | 139.7 | 176.5 | 158.4 | 206.4 | 9.5 |
| SHIPBUILDING: Manufacture
and Repair of: | | | | | | |
| 100 | 101.7 | 116.0 | 144.9 | 155.1 | 5.6 | |
| Ocean and Coastal Ships | 100 | 99.1 | 104.0 | 122.7 | 135.4 | 3.9 |
| Inland Ships | 100 | 121.4 | 130.3 | 140.3 | 142.7 | 4.5 |
| Fishing Ships | 100 | 99.9 | 116.2 | 171.0 | 174.1 | 7.2 |

TABLE A-2 Continued

METAL PROCESSING INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|--|------|-------|-------|-------|-------|---|
| CASTINGS AND FORGINGS: | 100 | 115.4 | 119.6 | 128.3 | 134.4 | 3.8 |
| METALWARES: | 100 | 120.9 | 142.5 | 162.9 | 194.2 | 8.6 |
| ELECTRO-TECHNICAL: | 100 | 122.4 | 148.4 | 175.8 | 209.1 | 9.6 |
| Electrical machines,
transformers and
switches | 100 | 114.8 | 134.1 | 153.6 | 177.8 | 7.5 |
| Cables and electrical
materials | 100 | 115.2 | 133.2 | 156.0 | 172.2 | 7.0 |
| Other Electrical
Products | 100 | 124.3 | 148.5 | 181.6 | 217.7 | 10.5 |

TABLE A-2 Continued

METAL PROCESSING INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|-------------------------------------|------|-------|-------|-------|-------|---|
| PRECISION TOOLS/OPTICS: | 100 | 112.5 | 134.5 | 168.1 | 205.8 | 9.4 |
| Office Machines | 100 | 111.2 | 133.2 | 174.0 | 215.5 | 10.0 |
| Measuring Instruments | 100 | 106.1 | 138.6 | 197.7 | 239.6 | 11.5 |
| and Watches | 100 | 104.7 | 122.3 | 138.2 | 166.1 | 6.6 |
| Optical Instruments | | | | | | |

TABLE A-3

LIGHT INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARK UNCHANGING PLAN PRICES)

| INDUSTRY SUBSECTORS
AND BRANCHES | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|-----------|-----------|-----------|-----------|-----------|
| WOODWORKING-
CULTURAL: | 2,375,590 | 2,800,782 | 3,020,012 | 3,348,387 | 3,866,049 |
| Wooden parts for
Construction
and Industry | 421,003 | 485,003 | 505,749 | 517,098 | 571,450 |
| Furniture and
Upholstery | 851,928 | 1,060,481 | 1,184,587 | 1,266,203 | 1,468,590 |
| Equipment | 105,521 | 120,151 | 125,134 | 137,662 | 159,570 |
| Musical In-
struments | 297,558 | 363,115 | 439,109 | 545,081 | 645,989 |
| Toys, Sports
equipment,
Ornaments | 6,260,157 | 6,671,169 | 6,911,149 | 7,423,835 | 8,384,023 |
| TEXTILES: | | | | | |
| Spun and yarn
goods | 1,404,806 | 1,436,384 | 1,483,697 | 1,662,215 | 1,792,810 |
| Weaving | 2,460,599 | 2,575,069 | 2,680,856 | 2,949,880 | 3,262,222 |
| Knitting | 1,273,506 | 1,449,484 | 1,556,705 | 1,677,927 | 2,000,346 |

TABLE A-3 Continued

LIGHT INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARK UNCHANGING PLAN PRICES)

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|-----------|-----------|-----------|-----------|-----------|
| CLOTHING: | 2,179,134 | 2,427,885 | 2,401,427 | 2,577,713 | 2,794,700 |
| Men's, Ladies',
Childrens' | | | | | |
| Outer Wear | 1,243,763 | 1,390,427 | 1,374,409 | 1,522,342 | 1,657,522 |
| Work clothes | 306,187 | 338,018 | 335,092 | 345,989 | 379,191 |
| Underwear | 219,738 | 262,290 | 275,570 | 293,212 | 318,636 |
| LEATHER-FUR
PRODUCTS: | 1,370,606 | 1,542,485 | 1,616,107 | 1,757,868 | 1,949,674 |
| Leather goods | 158,660 | 170,401 | 175,998 | 178,734 | 179,698 |
| Simulated leather
goods | 110,387 | 138,165 | 148,800 | 164,288 | 198,432 |
| Shoes (ex. rubber
wear) | 581,076 | 669,225 | 701,202 | 763,559 | 831,272 |
| Fur and Leather
clothing,
Saddleries | 355,397 | 375,446 | 416,012 | 477,310 | 559,761 |

TABLE A-3 Continued

LIGHT INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARK UNCHANGING PLAN PRICES)

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|---|-----------|-----------|-----------|-----------|-----------|
| CELLULOSE-PAPER: | 1,107,720 | 1,214,482 | 1,281,408 | 1,401,251 | 1,557,316 |
| Cellulose, paper,
card and
pasteboard | 557,931 | 601,766 | 630,365 | 684,726 | 749,827 |
| Cellulose and
paper products | 495,562 | 573,810 | 433,726 | 673,186 | 757,246 |
| Bookbinding | 34,227 | 38,906 | 41,032 | 43,339 | 50,243 |
| PRINTING: | 600,373 | 667,769 | 679,010 | 735,635 | 796,015 |
| Printeries | 540,128 | 601,393 | 615,703 | 665,926 | 726,941 |
| GLASS-CERAMICS: | 832,976 | 947,813 | 1,041,054 | 1,218,875 | 1,362,707 |
| Glass and Glass
Products | 469,652 | 521,416 | 571,279 | 677,120 | 757,640 |
| Ceramic and
Ceramic Products | 363,324 | 426,397 | 469,775 | 541,755 | 605,067 |

TABLE A-3 Continued

LIGHT INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|---|------|-------|-------|-------|-------|---|
| WOODWORKING-CULTURAL: | 100 | 117.9 | 127.1 | 141.0 | 162.7 | 6.3 |
| Wooden parts for Con-
struction and Industry | 100 | 115.2 | 120.1 | 122.8 | 135.7 | 3.9 |
| Furniture and Upholstery
Equipment | 100 | 124.5 | 133.2 | 148.6 | 172.4 | 7.0 |
| Musical Instruments | 100 | 113.9 | 118.6 | 130.5 | 151.2 | 5.3 |
| Toys, Sports equipment
Ornaments | 100 | 122.0 | 147.6 | 183.2 | 217.1 | 10.5 |
| TEXTILES: | 100 | 106.6 | 110.4 | 118.6 | 133.9 | 3.7 |
| Spun and yarn goods | 100 | 102.3 | 105.6 | 118.3 | 127.6 | 3.1 |
| Weaving | 100 | 104.7 | 109.0 | 119.9 | 132.6 | 3.6 |
| Knitting | 100 | 113.8 | 122.2 | 131.8 | 157.1 | 5.8 |

TABLE A-3 Continued
 LIGHT INDUSTRIES
 INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|--|------|-------|-------|-------|-------|---|
| CLOTHING: | 100 | 111.4 | 110.2 | 118.3 | 128.3 | 3.2 |
| Men's, Ladies', Child-
rens' Outer Wear | 100 | 111.8 | 110.5 | 122.4 | 133.3 | 3.6 |
| Work clothes | 100 | 110.4 | 109.4 | 113.0 | 123.8 | 2.6 |
| Underwear | 100 | 119.4 | 125.4 | 133.4 | 145.0 | 4.8 |
| LEATHER-FUR PRODUCTS: | 100 | 112.5 | 117.9 | 128.3 | 142.3 | 4.5 |
| Leather goods | 100 | 107.4 | 110.9 | 112.7 | 113.3 | 1.6 |
| Simulated leather goods | 100 | 125.2 | 134.8 | 148.8 | 179.8 | 7.6 |
| Shoes (ex. rubber wear) | 100 | 115.2 | 120.7 | 131.4 | 143.1 | 4.6 |
| Fur and Leather
clothing, Saddlery | 100 | 105.6 | 117.1 | 134.3 | 157.5 | 5.9 |

TABLE A-3 Continued

LIGHT INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|--|------|-------|-------|-------|-------|---|
| CELLULOSE-PAPER: | 100 | 109.6 | 115.7 | 126.5 | 140.6 | 4.4 |
| Cellulose, paper, card
and pasteboard | 100 | 104.1 | 109.1 | 118.5 | 129.7 | 3.4 |
| Cellulose and paper
products | 100 | 115.8 | 87.5 | 135.8 | 152.8 | 5.4 |
| Bookbinding | 100 | 113.7 | 119.9 | 126.6 | 146.8 | 4.9 |
| PRINTING: | 100 | 111.2 | 113.1 | 122.5 | 132.6 | 3.7 |
| Printeries | 100 | 111.3 | 114.0 | 123.3 | 134.6 | 3.8 |
| GLASS-CERAMICS: | 100 | 113.8 | 125.0 | 146.3 | 163.6 | 6.3 |
| Glass and Glass Products | 100 | 111.0 | 121.6 | 144.2 | 161.3 | 6.1 |
| Ceramic and Ceramic
Products | 100 | 117.4 | 129.3 | 149.1 | 166.5 | 6.6 |

TABLE A-4

FOOD - DRINK - TOBACCO INDUSTRIES
GROSS PRODUCTION IN SUBSECTORS AND BRANCHES
(1000 MARK UNCHANGING PLAN PRICES)

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--------------------------------------|-----------|------------|------------|------------|------------|
| FOOD-DRINK-TOBACCO: | 9,332,860 | 10,525,764 | 10,962,450 | 11,898,329 | 12,972,230 |
| Meat Processors | 2,117,200 | 2,499,603 | 2,385,843 | 2,804,373 | 2,976,448 |
| Fishing and Fish
Processing | 320,141 | 382,294 | 498,579 | 426,425 | 493,793 |
| Vegetable Oil -
Margarine | 773,583 | 803,781 | 885,990 | 917,033 | 895,637 |
| Flour Mills,
Bakery Pro-
ducts | 1,123,226 | 1,226,923 | 1,270,022 | 1,304,538 | 1,395,212 |
| Fruit and
Vegetable
Processors | 328,444 | 399,721 | 464,926 | 465,458 | 560,779 |
| Sugar | 575,958 | 609,551 | 585,186 | 471,510 | 521,353 |
| Confectionary
Goods | 504,927 | 564,366 | 567,087 | 609,563 | 687,265 |
| Wines and
Spirits | 595,822 | 696,943 | 793,923 | 948,029 | 1,016,414 |
| Breweries | 673,000 | 726,355 | 718,000 | 767,086 | 860,265 |
| Tobacco Products | 408,848 | 432,794 | 455,526 | 429,260 | 436,917 |

TABLE A-4 Continued

FOOD - DRINK - TOBACCO INDUSTRIES
INDEX OF GROSS PRODUCTION IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 | Average
Annual
Rate of
Growth
1959-1967 |
|-------------------------------------|------|-------|-------|-------|-------|---|
| FOOD-DRINK-TOBACCO: | 100 | 112.8 | 117.5 | 127.5 | 139.0 | 4.3 |
| Meat Processors | 100 | 118.1 | 112.7 | 132.5 | 140.6 | 4.4 |
| Fishing and Fish Pro-
cessing | 100 | 119.4 | 155.7 | 133.2 | 154.2 | 5.6 |
| Vegetable Oil -
Margarine | 100 | 103.9 | 114.5 | 118.5 | 115.8 | 1.9 |
| Flour Mills, Bakery
Products | 100 | 109.2 | 113.1 | 116.1 | 124.2 | 2.6 |
| Fruit and Vegetable
Processors | 100 | 121.7 | 141.6 | 141.7 | 170.7 | 6.9 |
| Sugar | 100 | 105.8 | 101.6 | 81.9 | 90.5 | -1.2 |
| Confectionary Goods | 100 | 111.8 | 112.3 | 120.7 | 136.1 | 3.9 |
| Wines and Spirits | 100 | 117.0 | 133.3 | 159.1 | 170.6 | 6.9 |
| Breweries | 100 | 107.9 | 106.7 | 114.0 | 127.8 | 3.1 |
| Tobacco Products | 100 | 105.9 | 111.4 | 105.0 | 106.9 | .8 |

TABLE A-5

PRIMARY INDUSTRIES
EMPLOYMENT BY INDUSTRIAL SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|-------------------------------------|---------|---------|---------|---------|---------|
| ENERGY: | 61,522 | 66,048 | 67,872 | 70,139 | 68,645 |
| Electricity and Gas | 61,159 | 65,742 | 67,872 | 70,139 | 68,645 |
| MINING: | 206,041 | 189,359 | 191,892 | 190,385 | 183,315 |
| Hard Coal and Coke | 23,360 | 22,319 | 21,418 | 20,159 | 17,630 |
| Lignite Coal, Coke and
Briquets | 108,294 | 109,524 | 111,326 | 111,843 | 108,823 |
| Iron-Ore Mines | 3,093 | 2,864 | 2,813 | omitted | omitted |
| Non-ferrous Metal Mines | 21,583 | 1,868 | 1,910 | 1,901 | 1,234 |
| Potash and Salt Mines | 27,361 | 27,174 | 27,736 | 27,999 | 27,757 |
| METALLURGY: | 86,795 | 107,840 | 106,788 | 112,459 | 115,150 |
| Iron and Steel | 67,745 | 69,164 | 70,561 | 67,539 | 70,529 |

TABLE A-5 Continued

PRIMARY INDUSTRIES
EMPLOYMENT BY INDUSTRIAL SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|---------|---------|---------|---------|---------|
| CHEMICALS | 264,733 | 269,025 | 272,185 | 280,645 | 284,286 |
| Basic chemicals, organic and inorganic | 74,791 | 75,710 | 74,718 | 76,745 | 77,267 |
| Specialized Products (e.g. films) | 52,384 | 50,430 | 52,717 | 52,480 | 53,986 |
| Plastics | 22,008 | 25,058 | 25,349 | 25,994 | 28,279 |
| Pharmaceuticals | 15,170 | 14,887 | 14,657 | 14,341 | 13,352 |
| Rubber and Asbestos Goods | 42,093 | 44,429 | 45,783 | 47,436 | 47,367 |
| Synthetic Fibres | 19,961 | 20,399 | 20,625 | 22,950 | 23,663 |
| Mineral Oil and Tar | 38,326 | 35,558 | 34,332 | 40,699 | 40,372 |
| BUILDING MATERIALS: | 92,791 | 92,117 | 88,212 | 87,973 | 87,156 |
| Concrete Products | | | | 21,010 | 21,016 |

TABLE A-5 Continued

PRIMARY INDUSTRIES
INDEX OF EMPLOYMENT BY INDUSTRIAL SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|-------------------------------------|------|-------|-------|-------|-------|
| ENERGY: | 100 | 107.4 | 110.3 | 114.0 | 111.6 |
| Electricity and Gas | 100 | 107.5 | 111.0 | 114.7 | 112.2 |
| MINING: | 100 | 91.9 | 93.1 | 92.4 | 89.0 |
| Hard Coal and Coke | 100 | 95.5 | 91.7 | 86.3 | 74.3 |
| Lignite Coal, Coke and
Briquets | 100 | 101.1 | 102.8 | 103.3 | 100.5 |
| Iron-Ore-Mines | 100 | 92.6 | 91.0 | 8.8 | 5.7 |
| Non-ferrous Metal Mines | 100 | 8.7 | 8.9 | 102.3 | 101.5 |
| Potash and Salt Mines | 100 | 99.3 | 101.4 | | |
| METALLURGY: | 100 | 124.2 | 123.0 | 129.6 | 132.7 |
| Iron and Steel | 100 | 102.1 | 104.2 | 99.7 | 104.1 |

TABLE A-5 Continued

PRIMARY INDUSTRIES
INDEX OF EMPLOYMENT BY INDUSTRIAL SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|---|------|-------|-------|-------|-------|
| CHEMICALS: | 100 | 101.6 | 102.8 | 106.0 | 107.4 |
| Basic chemicals, organic
and Inorganic | 100 | 101.2 | 99.9 | 102.6 | 103.3 |
| Specialized Products | 100 | 96.3 | 100.6 | 100.2 | 103.1 |
| (e.g. films) | 100 | 113.9 | 115.2 | 118.1 | 128.5 |
| Plastics | 100 | 98.1 | 96.6 | 94.5 | 88.0 |
| Pharmaceuticals | 100 | 105.6 | 108.8 | 112.7 | 112.5 |
| Rubber and Asbestos | 100 | 102.2 | 103.3 | 115.0 | 118.6 |
| Goods | 100 | 92.8 | 89.6 | 106.2 | 105.3 |
| Synthetic Fibres | 100 | | | | |
| Mineral Oil and Tar | 100 | | | | |
| BUILDING MATERIALS | 100 | 99.3 | 95.1 | 94.8 | 93.9 |
| Concrete Products | 100 | | | | |

TABLE A-6

METAL WORKING INDUSTRIES
EMPLOYMENT BY SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|-------------------------------------|---------|---------|---------|---------|---------|
| HEAVY MACHINERY: | 173,174 | 175,559 | 178,576 | 182,384 | 189,483 |
| Power Machines | 35,811 | 39,293 | 37,660 | 37,209 | 39,290 |
| Machine tools | 35,934 | 37,263 | 39,144 | 40,157 | 40,972 |
| Transportation Equipment | 22,077 | 22,787 | 21,152 | 21,476 | 22,176 |
| Steel Structures | 26,424 | 25,592 | 23,242 | 21,010 | 22,363 |
| GENERAL MACHINERY: for | 171,467 | 197,671 | 198,706 | 204,242 | 208,425 |
| Primary Industry | 16,246 | 19,117 | 18,703 | 19,779 | 20,169 |
| Metal-Working Industry | 2,823 | 3,159 | 6,625 | 8,029 | 8,323 |
| Light Industry | 35,594 | 35,241 | 36,377 | 36,703 | 36,852 |
| Food Industry | 18,665 | 22,587 | 22,794 | 23,809 | 24,046 |
| Construction Industry | 5,086 | 5,442 | 5,901 | 5,725 | 5,963 |
| Agriculture and Forestry | 25,187 | 27,702 | 27,355 | 29,173 | 29,875 |

TABLE A-6 Continued

METAL WORKING INDUSTRIES
EMPLOYMENT BY SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|---|---------|---------|---------|---------|---------|
| VEHICLES: Manufacture and
Repair of: | 185,781 | 182,474 | 184,826 | 143,515 | 148,285 |
| Steam, Diesel & Elec-
trical Locomotives | 32,358 | 30,971 | 29,516 | 9,564 | 9,828 |
| Rail and Street Cars | 49,771 | 46,430 | 45,029 | 21,670 | 21,718 |
| Trucks | 35,034 | 38,251 | 42,312 | 43,594 | 43,283 |
| Automobiles | 35,550 | 34,388 | 34,568 | 32,823 | 34,951 |
| Tractors | 13,274 | 14,043 | 14,411 | 14,853 | 16,408 |
| SHIPBUILDING: Manufacture
and Repair of: | 39,266 | 37,106 | 37,673 | 38,180 | 38,619 |
| Ocean and Coastal Ships | 24,756 | 23,233 | 22,190 | 23,395 | 23,393 |
| Inland Ships | 2,029 | 1,188 | 1,892 | 1,640 | 1,645 |
| Fishing Ships | 8,050 | 7,671 | 6,677 | 6,871 | 7,268 |
| CASTINGS AND FORGINGS: | 46,555 | 47,306 | 45,554 | 44,681 | 45,446 |

TABLE A-6 Continued

METAL WORKING INDUSTRIES
EMPLOYMENT BY SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|---------|---------|---------|---------|---------|
| METALWARES: | 87,242 | 86,840 | 90,182 | 89,668 | 91,596 |
| ELECTRO-TECHNICAL: | 208,111 | 215,157 | 225,451 | 232,594 | 242,188 |
| Electrical machines,
transformers and
switches | 49,124 | 48,027 | 49,579 | 49,164 | 51,040 |
| Cables and electrical materials | 20,938 | 20,826 | 22,003 | 23,004 | 24,158 |
| Other Electrical
Products | 35,324 | 35,876 | 38,145 | 39,605 | 42,286 |
| PRECISION TOOLS/OPTICS: | 93,444 | 94,229 | 95,082 | 102,097 | 108,941 |
| Office Machines | 27,563 | 27,075 | 25,907 | 28,423 | 31,097 |
| Measuring Instruments
and Watches | 19,344 | 17,665 | 19,022 | 23,291 | 24,783 |
| Optical Instruments | 31,248 | 30,216 | 30,444 | 31,203 | 32,410 |

TABLE A-6 Continued

METAL WORKING INDUSTRIES

INDEX OF EMPLOYMENT IN SUBSECTORS AND BRANCHES - 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|-------------------------------------|------|-------|-------|-------|-------|
| HEAVY MACHINERY: | 100 | 101.4 | 103.1 | 105.1 | 109.4 |
| Power Machines | 100 | 109.7 | 105.2 | 103.9 | 109.7 |
| Machine tools | 100 | 103.7 | 108.9 | 111.8 | 114.0 |
| Transportation Equipment | 100 | 103.2 | 95.8 | 97.3 | 100.5 |
| Steel Structures | 100 | 96.9 | 88.0 | 79.5 | 84.6 |
| GENERAL MACHINERY: for | 100 | 115.3 | 115.9 | 119.1 | 121.6 |
| Primary Industry | 100 | 117.7 | 115.1 | 121.8 | 124.3 |
| Metal-Working Industry | 100 | 111.9 | 234.7 | 284.4 | 294.8 |
| Light Industry | 100 | 99.0 | 102.2 | 103.1 | 103.5 |
| Food Industry | 100 | 121.0 | 122.1 | 127.6 | 128.8 |
| Construction Industry | 100 | 107.0 | 116.0 | 112.6 | 117.2 |
| Agriculture and Forestry | 100 | 110.0 | 108.6 | 115.8 | 118.6 |

TABLE A-6 Continued

METAL WORKING INDUSTRIES
INDEX OF EMPLOYMENT IN SUBSECTORS AND BRANCHES - 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|---|------|-------|-------|-------|-------|
| VEHICLES: Manufacture and
Repair of: | 100 | 98.2 | 99.5 | 77.3 | 79.8 |
| Steam, Diesel and Elec-
trical Locomotives | 100 | 95.7 | 91.2 | 29.6 | 30.4 |
| Rail and Street Cars | 100 | 93.3 | 90.5 | 43.5 | 43.6 |
| Trucks | 100 | 109.2 | 120.8 | 124.4 | 123.6 |
| Automobiles | 100 | 96.7 | 97.2 | 92.3 | 98.3 |
| Tractors | 100 | 105.8 | 108.6 | 111.9 | 123.6 |
| SHIPBUILDING: Manufacture
and Repair of: | 100 | 94.5 | 95.9 | 97.2 | 98.4 |
| Ocean and Coastal Ships | 100 | 93.9 | 89.6 | 94.5 | 94.5 |
| Inland Ships | 100 | 92.7 | 93.3 | 80.8 | 81.1 |
| Fishing Ships | 100 | 95.3 | 82.9 | 85.4 | 90.3 |
| CASTINGS AND FORGINGS: | 100 | 101.6 | 97.8 | 96.0 | 97.6 |

TABLE A-6 Continued

METAL WORKING INDUSTRIES
INDEX OF EMPLOYMENT IN SUBSECTORS AND BRANCHES - 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|------|-------|-------|-------|-------|
| METALWARES: | 100 | 99.5 | 103.4 | 102.8 | 105.0 |
| ELECTRO-TECHNICAL: | 100 | 103.4 | 108.3 | 111.8 | 116.4 |
| Electrical machines,
transformers and
switches | 100 | 97.8 | 100.9 | 100.1 | 103.9 |
| Cables and electrical
materials | 100 | 99.5 | 105.1 | 109.9 | 115.4 |
| Other Electrical
Products | 100 | 101.6 | 108.0 | 112.1 | 119.7 |
| PRECISION TOOLS/OPTICS: | 100 | 100.8 | 101.8 | 109.3 | 116.6 |
| Office Machines | 100 | 98.2 | 94.0 | 103.1 | 112.8 |
| Measuring Instruments
and Watches | 100 | 91.3 | 98.3 | 120.4 | 128.1 |
| Optical Instruments | 100 | 96.7 | 97.4 | 99.9 | 103.7 |

TABLE A-7

LIGHT INDUSTRIES
EMPLOYMENT IN SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|---------|---------|---------|---------|---------|
| WOODWORKING-CULTURAL: | 151,192 | 152,949 | 148,349 | 141,161 | 140,055 |
| Wooden parts for Construction and Industry | 20,780 | 20,409 | 19,067 | 17,419 | 16,420 |
| Furniture and Upholstery | 47,889 | 48,844 | 46,953 | 42,976 | 42,281 |
| Equipment | 8,570 | 8,463 | 8,282 | 8,058 | 8,616 |
| Musical Instruments | | | | | |
| Toys, Sports equipment, Ornaments | 29,402 | 31,077 | 31,342 | 33,180 | 33,697 |
| TEXTILES: | 330,604 | 322,671 | 301,614 | 280,935 | 269,412 |
| Spun and yarn goods | 68,053 | 64,756 | 59,858 | 57,566 | 53,581 |
| Weaving | 133,462 | 129,632 | 121,663 | 114,882 | 110,157 |
| Knitting | 77,592 | 77,320 | 72,236 | 66,123 | 63,477 |

TABLE A-7 Continued
LIGHT INDUSTRIES
EMPLOYMENT IN SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|---------|---------|---------|---------|---------|
| CLOTHING: | 118,472 | 116,353 | 108,299 | 103,590 | 100,707 |
| Men's, Ladies', Child-
rens' Outer Wear | 67,749 | 66,309 | 61,517 | 60,218 | 59,433 |
| Work clothes | 15,694 | 14,879 | 13,937 | 12,878 | 12,691 |
| Underwear | 11,987 | 12,850 | 13,338 | 12,880 | 12,696 |
| LEATHER-FUR PRODUCTS: | 69,754 | 68,297 | 65,336 | 65,333 | 65,152 |
| Leather goods | 6,954 | 6,892 | 6,796 | 6,687 | 6,449 |
| Simulated leather goods | 2,553 | 2,417 | 2,262 | 2,232 | 2,263 |
| Shoes (ex. rubber wear) | 32,073 | 31,580 | 30,700 | 30,903 | 30,911 |
| Fur and Leather cloth-
ing, Saddleries | 19,429 | 19,157 | 18,769 | 19,029 | 19,266 |

TABLE A-7 Continued

LIGHT INDUSTRIES
EMPLOYMENT IN SUBSECTORS AND BRANCHES

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|--------|--------|--------|--------|--------|
| CELLULOSE-PAPER: | 62,467 | 62,610 | 60,697 | 58,351 | 56,992 |
| Cellulose, paper, card
and pasteboard | 28,788 | 28,777 | 28,169 | 27,572 | 27,527 |
| Cellulose and paper
products | 30,375 | 30,585 | 29,430 | 27,908 | 26,626 |
| Bookbinding | 3,304 | 3,248 | 3,098 | 2,871 | 2,839 |
| PRINTING: | 39,189 | 37,742 | 36,111 | 35,113 | 34,513 |
| Printeries | 36,485 | 35,002 | 33,382 | 32,434 | 32,042 |
| GLASS-CERAMICS: | 66,574 | 65,685 | 65,453 | 66,126 | 66,480 |
| Glass and Glass Products | 34,894 | 34,230 | 34,428 | 35,162 | 35,191 |
| Ceramic and Ceramic
Products | 31,680 | 31,455 | 31,025 | 30,964 | 31,289 |

TABLE A-7 Continued

LIGHT INDUSTRIES
INDEX OF EMPLOYMENT IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|---|------|-------|-------|-------|-------|
| WOODWORKING-CULTURAL: | 100 | 101.2 | 98.1 | 93.4 | 92.6 |
| Wooden parts for Con-
struction and Industry | 100 | 98.2 | 91.8 | 83.8 | 79.0 |
| Furniture and Upholstery
Equipment | 100 | 102.0 | 98.1 | 89.7 | 88.3 |
| Musical Instruments | 100 | 98.8 | 96.6 | 94.0 | 100.5 |
| Toys, Sports equipment,
Ornaments | 100 | 105.7 | 106.6 | 112.9 | 114.6 |
| TEXTILES: | 100 | 97.6 | 91.2 | 85.0 | 81.5 |
| Spun and yarn goods | 100 | 95.2 | 88.0 | 84.6 | 78.7 |
| Weaving | 100 | 97.1 | 91.2 | 86.1 | 82.5 |
| Knitting | 100 | 99.7 | 93.1 | 85.2 | 81.8 |

TABLE A-7 Continued

LIGHT INDUSTRIES
INDEX OF EMPLOYMENT IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|------|-------|-------|-------|-------|
| CLOTHING: | 100 | 98.2 | 91.4 | 87.4 | 85.0 |
| Men's, Ladies', Child-
ren's Outer Wear | 100 | 97.9 | 90.8 | 88.9 | 87.7 |
| Work clothes | 100 | 94.8 | 88.8 | 82.1 | 80.9 |
| Underwear | 100 | 107.2 | 111.3 | 107.5 | 105.9 |
| LEATHER-FUR PRODUCTS: | 100 | 97.9 | 93.7 | 93.7 | 93.4 |
| Leather goods | 100 | 99.1 | 97.7 | 96.2 | 92.7 |
| Simulated leather goods | 100 | 94.7 | 88.6 | 87.4 | 88.6 |
| Shoes (ex. rubber wear) | 100 | 98.5 | 95.7 | 96.4 | 96.4 |
| Fur and Leather clothing,
Saddleries | 100 | 98.6 | 96.6 | 97.9 | 99.2 |

TABLE A-7 Continued

LIGHT INDUSTRIES
INDEX OF EMPLOYMENT IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|--|------|-------|------|-------|-------|
| CELLULOSE-PAPER: | 100 | 100.2 | 97.2 | 93.4 | 91.2 |
| Cellulose, paper, card
and pasteboard | 100 | 100.0 | 97.9 | 95.8 | 95.6 |
| Cellulose and paper
products | 100 | 100.7 | 96.9 | 91.9 | 87.7 |
| Bookbinding | 100 | 98.3 | 93.8 | 86.9 | 85.9 |
| PRINTING: | 100 | 96.3 | 92.1 | 89.6 | 88.1 |
| Printeries | 100 | 95.9 | 91.5 | 88.9 | 87.8 |
| GLASS-CERAMICS: | 100 | 98.7 | 98.3 | 99.3 | 99.9 |
| Glass and Glass Products | 100 | 98.1 | 98.7 | 100.8 | 100.9 |
| Ceramic and Ceramic
Products | 100 | 99.3 | 97.9 | 97.7 | 98.8 |

TABLE A-8
FOOD - DRINK - TOBACCO
EMPLOYMENT IN SUBSECTORS AND BRANCHES

| Industry Subsectors and
Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|-------------------------------------|---------|---------|---------|---------|---------|
| FOOD-DRINK-TOBACCO | 207,267 | 212,139 | 206,173 | 200,335 | 201,647 |
| Meat Processors | 27,495 | 29,484 | 27,863 | 29,310 | 29,477 |
| Fishing and Fish Pro-
cessing | 12,185 | 13,435 | 13,971 | 14,729 | 15,898 |
| Vegetable Oil -
Margarine | 4,502 | 4,241 | 4,319 | 4,087 | 3,691 |
| Flour Mills, Bakery
Products | 26,472 | 26,567 | 26,125 | 25,135 | 25,398 |
| Fruit and Vegetable
Processors | 13,272 | 13,943 | 13,844 | 12,630 | 13,555 |
| Sugar | 16,746 | 17,611 | 17,110 | 15,844 | 16,325 |
| Confectionary Goods | 14,732 | 14,152 | 12,892 | 12,555 | 12,268 |
| Wines and Spirits | 8,366 | 8,231 | 7,827 | 7,954 | 7,264 |
| Breweries | 27,214 | 26,931 | 26,107 | 25,491 | 25,600 |
| Tobacco Products | 21,162 | 20,913 | 19,107 | 15,107 | 13,701 |

TABLE A-8 Continued

FOOD - DRINK - TOBACCO
INDEX OF EMPLOYMENT IN SUBSECTORS AND BRANCHES, 1959 = 100

| Industry Subsectors
and Branches | 1959 | 1961 | 1963 | 1965 | 1967 |
|-------------------------------------|------|-------|-------|-------|-------|
| FOOD-DRINK-TOBACCO | 100 | 102.4 | 99.5 | 96.7 | 97.3 |
| Meat Processors | 100 | 107.2 | 101.3 | 106.6 | 107.2 |
| Fishing and Fish
Processing | 100 | 110.3 | 114.7 | 120.9 | 130.5 |
| Vegetable Oil -
Margarine | 100 | 94.2 | 95.9 | 90.8 | 82.0 |
| Flour Mills, Bakery
Products | 100 | 100.4 | 98.7 | 95.0 | 96.7 |
| Fruit and Vegetable
Processors | 100 | 105.1 | 104.3 | 95.2 | 102.1 |
| Sugar | 100 | 105.2 | 102.2 | 94.6 | 97.5 |
| Confectionary Goods | 100 | 96.1 | 87.5 | 85.2 | 83.3 |
| Wines and Spirits | 100 | 98.4 | 93.6 | 95.1 | 86.8 |
| Breweries | 100 | 99.0 | 95.9 | 93.7 | 94.1 |
| Tobacco Products | 100 | 98.8 | 90.3 | 71.4 | 64.7 |

TABLE A-9
INDEX OF CAPITAL ASSETS IN INDUSTRY, 1960 - 1967¹

| Industry: Sectors and
Subsectors | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 |
|-------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|
| I. PRIMARY INDUSTRIES | 100 | 106.2 | 114.2 | 122.8 | 133.8 | 143.2 | 152.5 | 159.7 |
| 1. Energy | 100 | 105.5 | 115.8 | 127.0 | 136.9 | 145.7 | 155.7 | |
| 2. Mining | 100 | 109.1 | 117.9 | 127.1 | 139.2 | 152.2 | 162.9 | |
| 3. Metallurgy | 100 | 103.9 | 110.6 | 118.5 | 128.0 | 138.9 | 149.5 | 153.9 |
| 4. Chemicals | 100 | 104.0 | 109.2 | 115.0 | 126.3 | 133.6 | 141.7 | 152.0 |
| 5. Building
Materials | 100 | 111.9 | 123.9 | 133.7 | 145.5 | 151.1 | 154.4 | 157.7 |

¹ Index for 1960 - 1966, with 1960 = 100, is based on Table 7, p. 57,
S.J.D.D.R., 1968.

TABLE A-10

CAPITAL INTENSITY (CAPITAL ASSETS ÷ NO. OF WORKERS)¹
THOUSANDS OF MARKS CAPITAL PER WORKER

| Industry: Sectors and Subsectors | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|------|
| I. PRIMARY INDUSTRIES | 69.9 | 73.7 | 79.0 | 84.8 | 91.3 | 96.7 | 102.5 | |
| 1. Energy | 193.0 | 198.3 | 215.9 | 232.1 | 245.8 | 257.8 | 274.4 | |
| 2. Mining | 63.9 | 70.2 | 75.1 | 80.7 | 87.9 | 97.3 | 104.4 | |
| 3. Metallurgy | 51.2 | 50.8 | 54.2 | 58.5 | 62.5 | 65.1 | 69.0 | 70.2 |
| 4. Chemicals | 60.2 | 62.8 | 65.3 | 68.4 | 74.0 | 76.8 | 81.2 | 85.0 |
| 5. Building Materials | 37.4 | 41.9 | 47.3 | 52.1 | 55.9 | 58.4 | 59.3 | 61.6 |

¹ No. of Workers = "Berufstätige", which in the case of industry, but not of some other economic sectors, is virtually identical to "Arbeiter und Angestellte." E.g. in 1967 there were 2,764,700 "Berufstätige" and 2,754,400 "Arbeiter und Angestellte" in industry (S.J.D.D.R., 1968, p. 61). In both case apprentices are excluded. Figures for 1960-66 are taken from S.J.D.D.R., 1968, Table 8, p. 58, and those for 1967 are derived from S.J.D.D.R., 1969, Table 10, p. 50, by using coefficients calculated on the basis of the overlapping years 1960, 1963, and 1966. This was possible for only a few subsectors.

TABLE A-10 Continued

CAPITAL INTENSITY (CAPITAL ASSETS ÷ NO. OF WORKERS)
THOUSANDS OF MARKS CAPITAL PER WORKER

| Industry: Sectors and
Subsectors | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 |
|-------------------------------------|------|------|------|------|------|------|------|------|
| II. METAL PROCESSING
INDUSTRIES | 17.6 | 18.6 | 19.6 | 20.6 | 21.9 | 23.0 | 24.2 | |
| 1. Heavy Machinery | 21.6 | 23.1 | 24.2 | 25.1 | 26.5 | 27.5 | 28.5 | |
| 2. General Machinery | 18.6 | 19.6 | 20.7 | 21.3 | 22.7 | 23.7 | 25.0 | |
| 3. Vehicles | 19.2 | 20.2 | 21.5 | 21.8 | 23.4 | 25.5 | 27.6 | |
| 4. Shipbuilding | 21.9 | 23.7 | 25.1 | 26.6 | 27.1 | 27.7 | 28.0 | |
| 5. Castings and Forgings | 22.5 | 23.3 | 24.1 | 26.5 | 29.2 | 30.6 | 32.0 | |
| 6. Metalwares | 16.7 | 17.6 | 19.2 | 20.3 | 22.2 | 23.3 | 24.0 | |
| 7. Electro-Technical | 13.0 | 13.9 | 14.6 | 16.0 | 17.1 | 18.1 | 19.3 | 19.8 |
| 8. Precision Tools/
Optics | 12.7 | 13.0 | 13.4 | 14.3 | 15.1 | 16.0 | 16.5 | |

TABLE A-10 Continued

CAPITAL INTENSITY (CAPITAL ASSETS ÷ NO. OF WORKERS)
THOUSANDS OF MARKS CAPITAL PER WORKER

| Industry: Sectors and
Subsectors | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 |
|-------------------------------------|------|------|------|------|------|------|------|------|
| III. LIGHT INDUSTRIES | 19.1 | 20.2 | 21.5 | 23.4 | 25.6 | 27.2 | 28.2 | |
| 1. Woodworking - | | | | | | | | |
| Cultural | 15.2 | 15.6 | 16.2 | 17.4 | 19.5 | 21.4 | 22.1 | |
| 2. Textiles | 20.4 | 21.7 | 23.3 | 24.9 | 27.3 | 29.1 | 30.2 | 30.7 |
| 3. Clothing | 3.8 | 4.2 | 4.5 | 5.1 | 5.7 | 6.0 | 6.2 | |
| 4. Leather-Fur
Products | 17.7 | 18.5 | 19.7 | 20.8 | 21.8 | 21.1 | 21.6 | |
| 5. Cellulose/
Paper | 41.5 | 42.1 | 46.2 | 50.0 | 54.0 | 57.0 | 57.9 | |
| 6. Printing | 18.1 | 20.2 | 20.5 | 23.5 | 24.4 | 25.9 | 27.7 | |
| 7. Glass/
Ceramics | 22.3 | 23.9 | 25.2 | 27.5 | 30.2 | 32.8 | 34.7 | |
| IV. FOOD-DRINK-
TOBACCO | 39.9 | 40.8 | 43.0 | 45.4 | 47.9 | 48.0 | 49.5 | 52.1 |
| ALL INDUSTRIES | 35.1 | 37.0 | 39.5 | 42.4 | 45.7 | 48.3 | 50.8 | 52.7 |

TABLE A-10 Continued
INDEX OF CAPITAL INTENSITY, 1960 = 100¹

| Industry: Sectors and
Subsectors | 1960 | 1962 | 1964 | 1966 | 1967 | Index
for 1967
given in
S.J.D.D.R.,
1969, p.
50, based
on E.L.N. |
|-------------------------------------|------|-------|-------|-------|-------|--|
| I. PRIMARY INDUSTRIES | 100 | 113.0 | 130.6 | 146.7 | | |
| 1. Energy | 100 | 111.9 | 127.3 | 142.2 | | |
| 2. Mining | 100 | 117.6 | 137.6 | 163.4 | | |
| 3. Metallurgy | 100 | 106.0 | 122.2 | 134.8 | 137.1 | (147.9) |
| 4. Chemicals | 100 | 108.4 | 123.0 | 134.9 | 141.2 | (144.8) |
| 5. Building Materials | 100 | 126.5 | 149.6 | 158.8 | 164.7 | (164.5) |

¹ Index figures for 1960 - 1966 taken from Table 8, S.J.D.D.R., 1968, p. 58.

TABLE A-10 Continued
INDEX OF CAPITAL INTENSITY, 1960 = 100

| Industry: Sectors and
Subsectors | 1960 | 1962 | 1964 | 1966 | 1967 | Index
for 1967
given in
S.J.D.D.R.
1969, p.
50, based
on E.L.N. |
|-------------------------------------|------|-------|-------|-------|-------|---|
| II. METAL-PROCESSING
INDUSTRIES | 100 | 111.3 | 124.4 | 137.3 | | |
| 1. Heavy Machinery | 100 | 112.0 | 122.6 | 131.7 | | |
| 2. General Machinery | 100 | 111.4 | 122.3 | 134.8 | | |
| 3. Vehicles | 100 | 112.5 | 122.3 | 143.9 | | |
| 4. Shipbuilding | 100 | 114.7 | 124.1 | 128.1 | | |
| 5. Castings and
Forgings | 100 | 107.1 | 129.5 | 142.0 | | |
| 6. Metalwares | 100 | 115.3 | 132.7 | 143.9 | | |
| 7. Electro-Technical | 100 | 112.2 | 131.5 | 147.7 | 152.3 | (148.8) |
| 8. Precision Tools/
Optics | 100 | 105.6 | 118.5 | 129.7 | | |

TABLE A-10 Continued
INDEX OF CAPITAL INTENSITY, 1960 = 100

| Industry: Sectors and
Subsectors | 1960 | 1962 | 1964 | 1966 | 1967 | Index
for 1967
given in
S.J.D.D.R.
1969, p.
50, based
on E.L.N. |
|-------------------------------------|------|-------|-------|-------|-------|---|
| III. LIGHT INDUSTRIES | 100 | 112.2 | 134.0 | 147.1 | | |
| 1. Woodworking -
Cultural | 100 | 106.7 | 128.7 | 145.9 | | |
| 2. Textiles | 100 | 114.1 | 134.2 | 148.2 | 150.5 | (145.2) |
| 3. Clothing | 100 | 117.3 | 148.1 | 162.2 | | |
| 4. Leather-Fur
Products | 100 | 111.5 | 123.3 | 122.4 | | |
| 5. Cellulose/Paper | 100 | 111.4 | 130.2 | 139.6 | | |
| 6. Printing | 100 | 113.1 | 134.8 | 152.8 | | |
| 7. Glass/Ceramics | 100 | 113.0 | 135.8 | 155.8 | | |
| IV. FOOD-DRINK-TOBACCO | 100 | 107.8 | 120.2 | 124.2 | 130.6 | (131.4) |
| ALL INDUSTRIES | 100 | 112.8 | 130.4 | 144.9 | 150.1 | (148.7) |