ECONOMIC ANALYSIS

of the

STATE OF MINNESOTA

Report to

THE MINNESOTA RESOURCES COMMISSION

1945

IN THREE VOLUMES

Volume I

J. G. WHITE ENGINEERING CORPORATION

NEW YORK

February 13, 1945.

The Honorable Edward J. Thye
Governor Of Minnesota
State Capitol
Saint Paul 1, Minnesota.

Dear Governor:

The Minnesota Resources Commission presents herewith the report of the J. G. White Engineering Corporation on its economic analysis of the State of Minnesota. The commission wishes it understood that this is solely the report of the J. G. White Company and is presented as such. This impartial study by a staff of experts is designed to provide the facts from which vital decisions affecting the State's welfare may be made. The Commission submits the report together with the following comments, which are based in part on the report itself, but are drawn to a large extent from the experiences and observations of its members.

Minnesota's greatest asset is the character of its citizens, their loyalty to, and faith in their state. Such qualities are based on dynamic, not static factors. They can be maintained and sustained only by the existence or the creation and support of conditions within the state of the social and economic opportunities that justify them. Those who bear the responsibility of political leadership must exercise eternal vigilance to keep alive and in health the conditions upon which these are based.

Minnesota's historical background is that of agriculture. For a time, the state experienced the growth of a manufacturing economy. This found itself largely in the simple conversion of existing resources such as its original forests and annual crops into usable forms and the mining of high-grade iron ores. To these were added local services and service enterprises supplying the immediate needs of a growing population.

In addition, certain manufacturing industries sprang up as the result of local enterprises, inventions, or other fortuitous circumstances which developed through the special attributes and character of goods produced into wider, and in some cases, national and international distribution. To a certain extent these have remained; some have moved to other areas by reason of developing advantages to be obtained elsewhere. On the whole and for the various causes set forth in the report, the manufacturing industries of Minnesota are declining. Concurrently the per capita wealth of the state has suffered a significant loss.

Minnesota today is at the cross-roads of a vital decision. It must now determine whether the future of the state is to be one of the single economy of agriculture (a field of diminishing return) or a multiple economy of agriculture, industry, commerce and service. No plans for the future can be made short of such a decision and with it the determination to create the conditions necessary to accomplish the objectives.

The decision is one of immediate concern. The close of the war will find large accumulations of private capital seeking investment. Under present conditions, Minnesota cannot hope to attract such capital. Neither can we hope to maintain all of our present capital investments in manufacturing or sustain the present basis of employment.

Providing post-war employment is a matter of general concern and planning. However, creating the condition to make the jobs is the first essential to successful accomplishment, otherwise jobs cannot exist or long continue. Employment is not fulfilled by high purpose.

In respect to post-war employment, Minnesota faces a variety of problems:

a. Rural population is increasing more rapidly than urban.
b. Requirements for farm labor are growing less.
c. The low rate of population growth offers no significantly increasing opportunities in the field of services (i.e., doctors, dentists, lawyers, veterinarians, etc.) or service enterprises.
d. Manufacturing employment previous to the war was declining.

To meet this situation, the trend in manufacturing must be reversed. This can be effected only by the creation of conditions conducive to the expansion of present manufacturing enterprises and to the encouragement of private venture capital to locate within Minnesota.

Assuming that it is the desire of the state to develop a multiple economy, it is the opinion of the Commission that there are many useful things that can be accomplished. It is evident no one thing can be wholly effective.

Taxes- The matter of taxes is highly important. Our tax structure requires revision. The present tax structure is obsolete, inequitable and inefficient. It is the natural outgrowth of expediency in a period of rapid growth rather than adherence to a comprehensive plan suitable to our present needs. Taxes in Minnesota, like those in some other states, have been levied at various times to meet developing sectional and other immediate needs with little or no consideration given to the effect of such upon the balance of the total structure. Unless the present legislature is willing to undertake a comprehensive revision and modernization of the present tax structure, we urge you to solicit action on the part of the legislature for the appointment of an interim committee to study the problem of revision and, if possible, to prepare for submission a comprehensive tax structure related to existing needs and the future well-being and development of the state.

It is our further suggestion that when, as and if, such a plan has been developed, it should be given consideration at a special session of the legislature. We do not believe that satisfactory accomplishment in the revision of this important factor can be obtained at a regular session.

Agriculture- As Minnesota is predominantly an agricultural state, it is natural that we should give every encouragement to that industry. It is equally important that this be done in a constructive manner without impairment or at the undue expense of either industry or commerce.

Agriculture is engaged in the production of primary goods which are sold as such or in products of simple conversion (such as milk to butter and cheese, and livestock to hides and meat). For the most part, such goods represent large volume and bulk. They have been sold under the constant and increasing pressure of price and with small and decreasing margins of return.

At present, the efforts of state and federal goverments are directed in large measure to aid the farmer to produce more with less effort and with greater protection and security. Little or no effort is being made to develop additional markets for the present or resulting surplus products, the conversion of such primary products to industrial usage, or the development and production of goods in advanced stages of processing where they enjoy increasing relief from the pressure of price and higher transportation costs to markets.

Under normal conditions, total farm production in many lines is already too large. No intelligent effort is being made to reduce the amount of land engaged in agriculture, a considerable portion of which is known through experience to be unfit for profitable farm operations. According to the census, there are 30,881 farms in Minnesota producing less than $400 per year. These represent a total value of farm products of $6,000,000 and an area largely in excess of 1,000,000 acres. Production on this basis does not provide an adequate standard of living. The volume of tax-delinquent land unfit for profitable agricultural production is evidence of this condition. Such land should be dedicated to other purposes than farming.

Farm labor in Minnesota is in the ration of seven in the family to one of non-family. Improved methods in mechanization are constantly reducing the amount of manpower required on the farm and are releasing excess farm population to seek employment in other fields. A low rate of population growth limits opportunity for such release in the field of service and service enterprises. Unless other industrial opportunities can be created for the use of such labor within the state, it will migrate elsewhere and domestic demand for farm products will suffer loss. Minnesota has a basic responsibility to agriculture, not only in methods of improved production, but in the development of processing and merchandising of agricultural products in order to obtain wider markets and greater margin of returns.

The Commission believes that a department of market research and analysis for agricultural production should be created to the end that our agricultural population may know of existing and potential market opportunities and will be better informed as to the most desirable products to conform with such opportunities. Funds should be provided for adequate staffing and maintaining such a department.

The Commission observes that while liberal provisions have been made for research in the servicing of agriculture, little or no appropriations have been made for extensive and intensive fundamental research into the development of new products on agriculturally based materials.

Forests- The Commission does not believe it would be practical to engage in a reforestation program designed to replace the growth of timber as originally found. The original growth represented trees of 300 to 400 years of age. Such a cycle of replacement is far too long. On the other hand, reforesting in a shorter cycle can be accomplished to the great and lasting benefit of the state in production of trees for small lumber, pulpwood, cellulose, and many other potential forest products, as well as fuel.

The present provisions for the protection of the forests and the encouragement of reforestation are inadequate and discouraging to private venture capital which otherwise would be attracted. The contributions of forest areas to recreational facilities are a large factor in maintaining this latter and most important enterprise.

Mining- While forests are replaceable and crops are produced annually, mining represents irreplaceable depletion.

The question of whether the present supply of merchantable iron ores will last ten years, twenty years or half a century is not so important as the effect of eventual loss of that income, either through exhaustion or the lessening of demand through the development of competitive and more advantageous sources of supply. Every ton of ore moved is irreplaceable and the final exhaustion of mines will represent a significant and enduring loss to the state.

The tax revenues from iron ore are highly important. The loss of this revenue through whatever cause will come with startling and impairing effect upon the remaining industries who necessarily will be required to assume the burden of the deficit, unless public services are allowed to decline.

The present conditions surrounding the mining of ore tends to force exploitive rather than constructive type of mining -- "dig it and get rid of it as soon as possible." In addition, the present impositions upon the industry give encouragement to, and hold the umbrella for, venture private and public capital to develop deposits in other states and those in foreign countries which otherwise might not have been inspired and which may well diminish or eliminate the demand for our remaining supplies of merchantable ores.

Unmerchantable Ores (Taconite)- Of low-grade and presently unmerchantable ores, Minnesota has an almost unbelievable quantity. In cases, these deposits, although at present unmined and unsalable, are subject to taxes. It is the opinion of the Commission that relief should be afforded such holdings in order to encourage exploration, and development and that either adequate sums should be made available for fundamental research in the discovery of methods of utilizing these types of presently unmerchantable ores and/or encouragement given to private enterprise to engage such research through proper tax credits or other means where the outcome of successful research is developed within the state.

The lack of adequate fuel supplies available to Minnesota on favorable competitive basis makes the present outlook for advanced stages of iron and steel production unattractive.

Manufacturing- An agricultural economy is supported by the usual and necessary services and by small local enterprises supplying the immediate needs of a population within its own area. A broad industrial manufacturing economy is dependent upon a variety of products and markets of an extensive character. For the most part, manufacturing in the past has been confined to the simple conversion of primary goods to usable forms. These are sold as such under the constant pressure of price and with extremely small margins. Since such products are generally all of bulky character, they continue under the handicaps and disadvantages of geographical location involving long transportation hauls and high transportation costs to markets. A recession of our namufacturing activity over the 30 years preceding the present war is a direct reflection of the character and highly competitive nature of goods produced.

Minnesota possesses a few manufacturing industries converting primary goods (Raw materials in original forms) into more advanced forms possessing special qualities and high value in relation to weight. Industries of this character enjoy competitive advantage and reduced transportation costs. The future of a broad industrial manufacturing economy providing high employment lies in the development of such industries whether they engage in the processing of raw materials produced within the state or those acquired from outside sources.

Industrial manufacturing of this type of product, so urgently needed to give competitive advantage, requires heavy plant investment and large inventories. At present, these rest under inequitable tax burdens and restrictions which impair the necessary competitive trade advantages. Immediate steps should be taken to develop manufacturing industries of this character and to encourage private venture capital investment, by removing obstacles and providing the incentives for such development.

Minnesota must either undertake on its own behalf or encourage private capital through appropriate methods of tax credits or otherwise to engage in intensive and extensive fundamental research in the discovery, development and manufacture of new goods of advanced technique.

Existing industrial enterprises should establish and financially support their own state-wide department of market research and analysis to make available to all existing industries information in respect to market potentials and the merchandising and marketing of products producible to advantage within the state.

Labor- The Commission notes with pride and appreciation the high character of our industrial labor. In its loyalty to the state and the environmental satisfaction it enjoys, it has worked longer hours for less pay than labor in many sections. This has, no doubt, been due to the superior nationalistic background of our citizens and to the fact that there are recognized compensating values in climate and recreational facilities.

Minnesota has a primary obligation to provide for labor, both employment and wages commensurate with those existing in other comparable states. To this end Minnesota should employ every measure to develop an industrial manufacturing economy based on the production of goods of special attributes with high value in relation to bulk.

Under such conditions, it is possible to provide employment opporunities sufficient to absorb both a growing rural population and our present industrial workers and even to encourage migration of additional labor to Minnesota.

Labor's interest in a program for this type of manufacturing is increasingly evident.

The decrease in manufacturing activity experienced in the thirty years preceding the present war clearly demonstrates that a manufacturing economy based largely on the simple conversion of primary goods to usable form will not suffice to maintain satisfactory employment or commensurate wage rates. Unless corrective measures are inagurated we may anticipate a continuance of experienced pre-war trends which indicate further losses of our manufacturing industries and our industrial workers to other states offering greater advantages and opportunities.

Recreation- While we possess inadequate statistical background as to the scope and volume of this field, there are strong indications that this is of major importance in the economy of the state.

If it was possible to prepare a balance of trade for the state there is evidence to believe recreation might prove to be a most important balancing item.

In view of its magnitude and importance, those departments entrusted with this responsibility should be given adequate finances to maintain a proper staff and to initiate and develop those measures conducive to the maintenence and expansion of the growing opportunities in this important field.

Small Business- The various service enterprises and industries serving local communities or limited demand markets constitute what is called small business. The employment in these enterprises, the services rendered and the capital invested make their prosperity and well being of utmost importance to the entire economy of the state. They should receive every attention, support and consideration.

Small business is the barometer of existing conditions within the state. Its progress, or otherwise, marks the degree of general prosperity or depression. Large manufacturing industries are highly dependent on small business for a great variety of products and services. In turn industrial manufacturing activity contributes to the well being of small business through direct transactions, and indirectly by transaction with others who are in turn customers of small business.

Facilities for a state wide consolidated market research and analysis should be established in order that these types of essential enterprises may be provided with current information as to market potentials and opportunities both within and without the state.

Many large enterprises have grown from small local industry. With encouragement, support and proper information many others may so develop to the benefit of the entire state.

General Research- The White Report indicates the existence of undeveloped mineral resources (other than iron). However, there is no evidence to show that these exist in sufficient volume or concentration to warrant large scale commerical exploitation under presently known techniques.

The discovery of new methods may endow these with real values, but such methods will require extensive fundamental research. Our neighboring states possess huge deposits of easily obtainable lignite coal. In its present state, it lacks commercial acceptance as a satisfactory substitute for other types of fuel; the same applies to the use of peat of which Minnesota possesses large deposits. Research may be able to develop methods of converting these potential fuel supplies into new and economic form or the production of many useful derivatives.

The Commission wishes to emphasize the importance and urgent need for intensive and extensive research in the discovery of new products arising from presently available raw materials, those that can be advantageously produced in the state or imported for manufacture.

Minnesota should either undertake and adequately support, such a program of research or devise ways and means to encourage similar undertakings by private capital.

Highways- The Commission observes with satisfaction the work of Minnesota's Highway Department in the establishment and maintenance of highways throughout the state. At the same time, it expresses the hope that developing highways will be kept in proper balance with traffic needs. There is just as much danger in having too many roads to maintain as there is in having too few and inadequate roads. The maintenance of superfluous roads will prove a heavy burden and militate against the economies of government which are so necessary to maintain Minnesota on a competitive basis with other comparable states.

Schools- The cultural levels to which Minnesota aspires has its foundation in the schools.

Minnesota takes justifiable pride in its schools. Minnesota must not only maintain and adequately support facilities for education, but must encourage its youth to utilize these educational opportunities to the fullest advantage.

The first consideration should be quality and not quantity. In the latter, the evils of over-expansion are as detrimental as would be their inadequacy. The report indicates that we have a very considerable number of schools in rural districts of extremely small attendance and inadequate teaching

staffs. All unnecessary schools should be eliminated, to the end that the remaining schools may be better served and more adequately provided for.

Rural youth that does not find placement on the farm will require an increasing educational background to qualify for advantageous employment in other fields.

The fullest advantage and justification of costs obtain when the outturn of our schools and colleges are retained through opportunities afforded within the state.

To this end Minnesota must provide expanding employment opportunities; otherwise migration will occur to the advantage of other states at our expense and cost.

State Expenses- While the commission believes that the state has taken steps to prevent unnecessary expenditures and waste, nevertheless the fact remains that on a per capita basis of taxation, our taxes must be materially reduced to be commensurate with other states which are to be considered in a competitive category. The need of further economies is clearly evident.

In concluding, the Commission points out that very little time has been available in which to prepare the vast amount of material necessary for the report. There is much confirmatory work to be done and further studies to be conducted. We hope, however, that this report will serve to bring to the attention of yourself, the Legislature and the citizens of Minnesota the condition of their state and their potential opportunities. It is axiomatic that "something cannot be gained for nothing". If we are to enjoy the type of economy on which the Commission believes the future welfare of the state rests, we must immediately proceed to the formulation of measures necessary to obtain the desired objectives.

In addition to the White report the commission has received and has on file many valuable contributions from authentic sources.

Most grateful acknowledgement is made to those who have given so generously of their ability and time, often at great personal sacrifice, and to Batten, Barton, Durstine and Osborn for the contribution of the time and assistance of their officers and staff in making the contents of the report known to the people of the state.

The Commission also wishes to commend most highly the services of its Secretary, Mr. J. W. Clark whose interest and efficient handling of the Commission office has been of great value to the members and to the work of the commission.

The White report and its presentation has been made possible through the interest and generosity of many patriotic citizens who have belief and faith in the future of their state and who need only adequate support to further enhance its welfare.

The Commission now has concluded its work and unless it is the expressed wish of yourself, and unless adequate funds are provided for the continuance of the work of this or a succeeding commission, we believe that the Resources Commission as such should be disbanded.

As a commission and as loyal citizens we are vitally interested in the future welfare and prosperity of Minnesota. We join with those who have so generously and patriotically made possible the preparation of this report and invite the participation of others in urging immediate and appropriate action.

Respectfully submitted

James F. Bell
Chairman

MINNESOTA RESOURCES COMMISSION.

THE J. G. WHITE ENGINEERING CORPORATION
ENGINEERS AND CONSTRUCTORS
80 BROAD STREET
NEW YORK 4

GANO DUNN
PRESIDENT

CABLE ADDRESS
WHITENGECO, NEW YORK

February 21, 1945

Hon. James F. Bell Chairman
Minnesota Resources Commission
624 State Office Building
St. Paul 1, Minnesota

An Economic Analysis of the State of Minnesota

Dear Sir:

In accordance with our contract with the State of Minnesota, effective June 28, 1944, we submit herewith 500 copies of our final Report entitled "An Economic Analysis of the State of Minnesota". Each is in three volumes in accordance with your request, with the exhibits of Volume II separately bound.

This Report presents the results of our "study of the broad, underlying, basic factors having to do with the economic conditions and trends which affect the public welfare of the people of Minnesota". It is based on observations and analyses made by our officers and staff through personal inspections throughout the State, visits to representative individuals, corporations and institutions familiar with the problems involved; and an intensive study of statistical material wherever available, accompanied by discussion of this material with members of the Minnesota Resources Commission and others interested.

We desire to express our appreciation for the cooperation of the members and staff of the Commission, and the others throughout the State, including various Federal, State and local government agencies, who helped us to determine the facts on which our conclusions are based.

Respectfully submitted,

THE J. G. WHITE ENGINEERING CORPORATION

Gano Dunn

Gano Dunn, President

ECONOMIC ANALYSIS OF THE STATE OF MINNESOTA

Printed in the United States
PRESTIGE BOOK CO.
New York

ECONOMIC ANALYSIS

of the

STATE OF MINNESOTA

Report to

THE MINNESOTA RESOURCES COMMISSION

1945

Volume I

THE J. G. WHITE ENGINEERING CORPORATION

NEW YORK

Table of Contents

AUTHORIZATION

*On May 10, 1944, the Governor of Minnesota, by Executive Order No. 1, established the purposes and functions of the Minnesota Resources Commission to be the study of the broad, underlying, basic factors having to do with the economic conditions and trends which affect the public welfare of the people of Minnesota, *****.*

On June 23, 1944, the State of Minnesota, through the Chairman of the Minnesota Resources Commission, entered into a contract with The J. G. White Engineering Corporation to conduct a program of investigation and submit a report.

I.

FOREWORD

THIS Report is the result of a study of the general welfare of the people and State of Minnesota. In their analysis, which included the activities of most of the important industries in the State, the engineers of The J. G. White Engineering Corporation have found that Minnesota has not been maintaining its wealth on a per capita basis to the same extent as the country as a whole. The relative downward trend began in 1904 with a rapid drop from 1922 to about 1928, since which time the per capita wealth of Minnesota has shown a tendency to stabilize at around 82% of the per capita wealth of the United States.

In the following pages of this and subsequent volumes will be found the facts which support this statement accompanied by a description of the methods of evaluation which justify it.

Only those general or specific activities within the State which have had an important bearing on the State's welfare, were selected for intensive study. A uniform approach to all activities was not readily determinable, but if the findings were to have a basis for comparison, some foundation pattern was essential and had to be taken for the development of general conclusions.

This pattern rested on certain assumptions, namely: that the fundamental elements of each and every industrial enterprise, in which category agriculture is included, are ownership, investment and a "plant." The operations of the plant involve management and labor; the result is products; their disposition requires a market.

Ordinarily the financial results are reflected by an income account. Trends in the various items of expense are presumed to be of primary interest to ownership as their total must be deducted from the total receipts before actual or net income can be determined. The quality of performance, where known or estimated, was assumed to be measured by net return on investment.

Whether a case involved industry within the State as a whole or an individual business, the pattern under which it has been treated has been essentially the same.

The facts which the study has revealed and on which the conclusions have been based have been primarily of a statistical nature gathered from many sources, national, state and local; probably one thousand reports and records

were examined by the engineers. In over three hundred conferences, and in many visits to forest areas, mines, manufacturing establishments and agricultural centers, men in all walks of business, professional, industrial and farm life were consulted in the sifting and evaluation of the importance of the data. Although the engineers have been greatly assisted in the assembly of these facts by the members of the Minnesota Resources Commission and others, the final opinions, conclusions and findings are wholly those of the authors of this Report.

The length of treatment or discussion relating to any particular industry is not intended to be a measure of its relative importance in the State's economy. Length may have been due to the need of emphasis or to complexity of the study. No comparisons or contrasts between industries have been intended. Interdependent interest of two or more activities has been emphasized where such emphasis is deemed to have economic significance such as that which has been shown to exist between manufacturing and agriculture. There is nothing new in this fact but on account of the location of the State and on account of national economic trends, it is of peculiar importance to Minnesota.

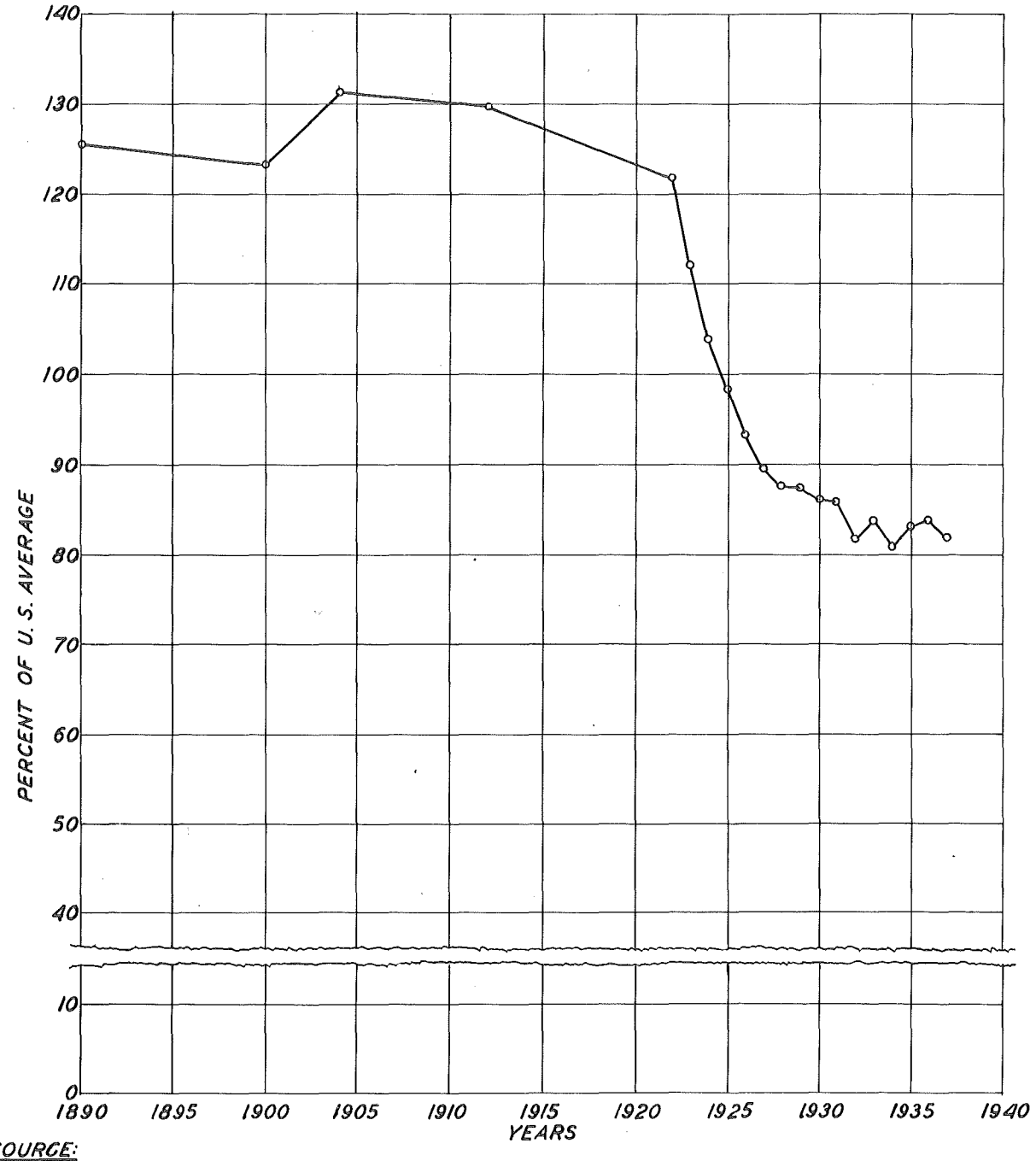
In certain situations, trends which are inimical to the best interests of the State are clearly indicated and suggest desirability of programs for correction.

In other situations, trends have been developed which of themselves are not injurious but only emphasize a natural course of events. Such trends, although fully realized, indicate that the greatest care should be exercised to conserve all possible values to the State. This applies particularly to the iron mines as a State resource.

Recreation has been characterized as one of the State's largest industries but, in the time given to the survey, it has not been possible to isolate and identify the dollar income proving the economic importance of recreational activities. Factual evidence is insufficient to evaluate either their actual extent or the net amount of their financial benefits. Evidence does exist to indicate that their extent and the returns from them are impressive and that there are material potentialities for substantial increase of income to the people of the State through a proper promotion of recreational facilities. Great care should be exercised, however, in seeing to it that expenditures made in the interest of this particular "industry" are not overdone without a clear-cut appreciation of the facts as to current or potential income to be expected from these expenditures.

The authors believe that by putting the herein treated activities of the State of Minnesota to an economic test by the unusual practice of treating them all as industries, and applying the criteria customarily applied to invested capital and cost of operation, they have given to this Report a value in pointing the way to remedial measures for improving the economy of the State of Minnesota which would not have been accomplished by any other approach.

PER CAPITA WEALTH IN MINNESOTA
PERCENT OF U. S. AVERAGE



SOURCE:

CALCULATED FROM DATA IN TABLE "MINNESOTA WEALTH" IN SECTION III-E OF THIS REPORT-VOL. 2

II. FUNDAMENTAL CONDITIONS

Minnesota's geographical location near the center of the North American Continent imposes the handicap of distance from older, larger, and more diversified centers of manufacturing and consumption which provide the principal markets of the country and, to a great degree, the producing facilities to satisfy them.

The effects of these distances may be changed only slowly over considerable periods of time as technological developments, along with changes in distribution of population, tend to nullify them.

The State's location affects its economic welfare in many ways. It means briefly that any enterprise within the State must have, or must create, intrinsic advantages sufficient to overcome, or at least to equal, the increased costs of doing business as compared with more favorably located competitors.

The comparatively level terrain favors farming, forestry, and transportation. The climate, which compares not unfavorably with neighboring states, fosters a virile and active population. The rainfall usually is ample for agriculture. There are dry periods which increase the hazard of forest fires.

Water conservation and improvements in natural drainage have not been developed adequately to serve urgent needs, owing to a reported shortage of funds.*

The State was settled by pioneers migrating from the Atlantic seaboard, followed by strong Northern European immigrants who, with their descendants, have been and are industrious and of good character and reputation. There is little tendency, under normal conditions, toward emigration, except as spurred by ambitions not satisfied by opportunities offered at home.

Looking toward the near future, it well might be said that Minnesota should be concerned with providing opportunities for returning sons and daughters as well as attracting newcomers.

VOL. II, p. 24, 25

*See Statistical Reports, State of Minnesota, Department of Conservation, Biennial ending June 30, 1940; June 30, 1942.

III ECONOMIC DEVELOPMENT IN INDUSTRY

A. Public Service Industries

Without intending to belittle the achievements of any phase of human endeavor, it may reasonably be stated that the greatest contribution to success in advancing civilization has been through activities here included for purposes of this report under the head of "Public Service Industries", namely, the distribution of energy, the means of public transportation, fuels, commerce and communication. That these agencies shall be strong, stable, well maintained and economically operated is essential to the welfare of any state. These are not to be confused with the Personal Service Industries.

Commerce—wholesale and retail trade—represents a substantial portion of the business transactions within the State and increases the welfare and happiness of the people by supplying the many articles of utility and luxury that are produced in anticipation of effective demand. VOL. II, p. 72

Information on Banking and Finance obtained from available data and from interviews with officers of the Federal Reserve Bank of Minneapolis; with some of the larger banks in Minneapolis and St. Paul, and with over 150 business organizations and concerns in the Twin Cities and various other points in Minnesota, all of which were representative of a wide range of different activities in the State, indicated that the banking facilities and resources were ample to provide for the banking needs of Minnesota. VOL. II, p. 81

Accurate and dependable information concerning the extent, location and particular characteristics of all of the available sales outlets probably is the most essential information upon which to build the success of any enterprise. However, a detailed study and summary of Minnesota's markets is beyond the scope of this Report.

Many of the State's markets appear to be nationwide as indicated by conversations with over 150 industrial and commercial establishments in the Twin Cities, Duluth and other points throughout the State. In addition to the national markets of these establishments, some of them appear to have export markets, such as those for dairy products, commercial printing, machinery, flour milling and cereal preparation. Some market data, referring to specific classes of products, are included in various sections of the Report dealing with Agriculture, Forestry, Manufacturing and Mining.

Vol. II, p. 29

Power

The importance of the power industry as a factor in the State's economy lies primarily in its ability to produce and deliver relatively cheap power when, where and as it is required for industrial, commercial, agricultural or domestic use. The industry as a whole appears to be fulfilling this function satisfactorily, as evidenced by the increasing acceptance and use of electrical energy.

Ex's. III-F-1 and 2
Ex. III-F-3

The combined output of generating plants in the State more than trebled between 1920 and 1942. Generating capacity increased from about 307,000 kw. to over 768,000 kw. during the same period. The State as a whole appears to be well provided with electric transmission lines and distribution facilities where these are economically warranted.

Vol. II, p. 32

A study of recent generating capacity additions, made during the war period, and of system loads of some of the major electric systems in the State, indicates that adequate capacity is available to supply exiting loads, including war demands, and to provide ample capacity for probable post war requirements for a considerable time to come. It is the declared policy of the major privately owned utilities in the State to make any necessary additions to plants and lines when and as they may be required.

Ex's. III-F-6 and 7
Vol. II, p. 33

In general, electric rates are comparable with those of neighboring states, despite the inherently high generating costs caused by high fuel costs. While there are wide variations in rates applicable in various parts of the State, this condition is not unusual, and similar variations are to be found in neighboring states. Domestic use of electricity on a per customer basis compares favorably with the United States average; the per customer consumption of energy delivered by the privately owned companies is materially in excess of such average.

Ex. III-F-5

Vol. II, p. 33

It appears probable that in the future, the domestic and agricultural uses of electricity will continue to increase, and that on a unit-output basis its use in industrial and commercial fields also will increase, but the total energy requirements in these latter fields will depend largely on general industrial and business conditions in the State.

Vol. II, p. 30

There appears to be little opportunity for the development of low cost hydro or steam power in the State owing to the absence of advantageous water power sites with adequate flowages and the lack of nearby high grade fuel deposits.

Vol. II, pp. 34 and 61

Transportation *(including Fuel Supply)*

As of outstanding importance in the State's economy, too great emphasis cannot be placed upon the necessity of endeavoring to secure a minimum of cost in the transportation of the products of the State to market.

The location of industry, other than extractive industries which operate where the resources exist, depends to a great extent on comparative transporta-

tion charges. Some of these industries tend to locate near sources of raw materials by reason of the loss of weight in their processing; others, which draw raw materials from several sources, or which handle perishable products, tend to locate near their markets; again others decide to locate near materials, or near markets, depending on the relative costs of freight on raw materials and on the finished products.

An industry producing an article of high value in relation to weight may compete profitably in a wider market area than one producing bulk products. The "high-value" type of industry is more especially adapted to conditions prevailing in Minnesota.

If, owing to its geographical location, Minnesota is forced to overcome a competitive disadvantage imposed by the cost of transportation, every effort must be made to see that full opportunity is given to transportation facilities to operate under high load factor conditions. In other words, idle mileage must be reduced to a minimum.

There are relatively few areas in the State that are not well served by rail lines. Because interstate rail rates fall under the jurisdiction of the Interstate Commerce Commission, Minnesota cannot control that element in the cost of delivered products.

Detailed tabulation of the freight movements into and out of the State for 1940 by Class I railroads are given in Volume II—Section III of this Report. These data show movements of various classes of products.

VOL. II, p. 37
EX's. III-E-1, 2, 3, 4, 5 and 6

The lowest possible costs of coal and other fuels should be a main objective. Climatic conditions and the need of heat through the long winters necessitate a ready delivery of coal where conditions require its use as the basic fuel. Both are essential if the State contemplates the further development of manufacturing.

Public subsidizing of facilities to compete with rail transport should be carefully evaluated in its eventual effect upon the economic interest of the public because of the extent that such subsidizing can contribute to the destruction of other essential facilities; for instance, the lavish expenditure of public funds in the improvement of river transport without thorough study of the over-all economics involved. Too often enthusiasm in the promotion of projects of the kind tends to outweigh thorough consideration of actual cost.

VOL. II, p. 42

The interstate shipment of Minnesota iron ore is almost wholly dependent on lake transport. In 1940, 92% of the total tonnage of Duluth-Superior outgoing lake shipments was iron ore, the balance being grain, flour and a limited amount of agricultural and manufactured products. Coal, limestone and gasoline comprised 93% of the incoming lake tonnage which, by way of comparison, was only about 20% of the outgoing.

VOL. II, p. 39

VOL. II, p. 43

The upper Mississippi waterways have been utilized to serve only a relatively small portion of total traffic, and movement of this traffic has been principally in one direction. The up-river receipts by barge in 1942 totalled 1,257,545 tons, and the down-river shipments 90,012 tons. The combined total of 1 1/3 million tons is a small fraction — less than 1% — of the total tonnage originating and terminating in the State. An upward trend in the use of this form of transportation has been indicated as the result of the completion of the nine-foot channel project. With the termination of the war, when additional river craft become available, the traffic on the river may be expected to increase.

The development of motor truck and bus transport naturally accompanies progress in that form of transportation and the improvement of state highways.

VOL. II, p. 44

A persistent and continuing problem is the apportionment of taxation of these facilities in order that they may make their fair contribution to the maintenance and development of the State highway system.

A like problem is the allocation to the public of the proper portion of the burden of maintaining these highways for the use of privately owned automobiles. It involves a sound counterbalancing of the public interest and the public pocketbook.

VOL. II, p. 54

Air transport is, and will become, an increasingly important factor in long distance transportation of articles having a high value in relation to weight, as well as in speeding up business contacts. In the latter regard, this particular facility promises to offset Minnesota's disadvantageous geographical location by contributing to the closer inter-relation between business interests within the State and those in other parts of the country.

VOL. II, p. 65

To date, pipe-line transportation is confined to the delivery of natural gas and some oil to the State. In 1935, over 10 billion cu. ft. of natural gas were so "shipped in." Nevertheless, it is interesting to note that, as a result of war conditions, nearly 34 billion cu. ft. were delivered in 1943. Present deliveries of gas are limited by existing pipe line capacities. The rapid growth in the use of this fuel attests its advantage and convenience.

Although the State is wholly dependent upon its transportation facilities as a service agency in bringing in all of its fuel requirements in the form of coal (6,300,000 tons), petroleum products (733,000,000 gallons), and natural gas (34,000,000,000 cu. ft.), the rural population is still dependent to a large extent upon wood as a source of fuel and, generally speaking, upon individual or local means of transportation.

VOL. II, p. 72

Minnesota has no known deposit of coal, oil, lignite, or natural gas, other than a narrow coal seam that has never been mined, development of which is believed to be commercially impracticable. The State has large deposits of

peat but these are virtually unused at the present time, and its use for fuel on a large scale has not as yet appeared economically practicable.

In North Dakota there are extensive deposits of lignite, some of which is now shipped to Minnesota as fuel, but in such small quantities that it is insignificant in relation to the total fuel used. Experiments are now being conducted by the Department of Mines and the Universities of North Dakota and Minnesota on the production of hydrogen gas from lignite, but to date, these experiments are in the laboratory stage.

TRADE AND COMMERCE — VOL. II, p. 72

Those enterprises which are primarily concerned with the distribution of primary or manufactured products of industry, to the ultimate consumer, are an important factor in the State's economy, not only because of essential service, but also because they furnish employment to a relatively large number of people. In 1939, over 143,000 persons in Minnesota were engaged in trade.

For convenience, Trade is usually divided into two classifications — Wholesale and Retail.

The annual volume of retail trade is probably one of the best indices of relative prosperity, since it indicates the extent to which people are able to satisfy those needs and desires which they are unable to satisfy through their own personal efforts. — VOL. II, p. 72

Wholesale trade refers generally to an intermediate step in the distribution of goods, namely: the distribution of goods by manufacturers to the retail stores through warehouses and warehouse facilities. In general, this phase of trading is gradually assuming less importance, largely because of improved transportation facilities, mail order houses and chain-store operations. These enable the retail stores to operate with smaller stocks and more nearly on a current basis. — VOL. II, p. 73

Studies of United States Census figures for 1929, 1935 and 1939, and indices derived therefrom for Minnesota and the neighboring states of Indiana, Iowa, Michigan, Missouri, and Wisconsin, indicate that Minnesota compares favorably with these States as regards sales per capita, coverage (population per store), efficiency of operation (sales per store, employees per store, and sales per employee), and average wages paid (wages per employee). Comparison of the statistics for 1929, 1935 and 1939 reveals that the extent of Minnesota's recovery from the recent business depression (typified in 1935) compares favorably with the other states listed. From these data, it may be inferred that the people of Minnesota have been and are (1939) generally able to gratify their desires to an extent at least comparable with those of the neighboring states. — Ex's. III-J-3 and 4

Census data subsequent to 1939 are not available but would be of little value

in a representation of normal conditions, because of the confusing and probably false picture resulting from unstable war conditions.

VOL. II, p. 79

Cooperative Associations are a factor of growing importance in the economic life of Minnesota as well as in many other states. In general these associations are marketing, processing and purchasing organizations whose membership consist primarily of farmers. Minnesota is among the leading states in the cooperative movement. The State has large and important cooperatives in the oil associations, the dairy association, the grain elevator associations and others, principally connected with agriculture. Most of the associations have modern buildings and equipment and appear to be well managed. In the past there have been some failures but also there have been some outstanding successes.

Cooperative associations may obtain certain advantages over private concerns, partnerships and corporations by complying with various legal requirements. Exemption from Federal and State Income Taxes is one of the more important advantages.

VOL. II, p. 83

COMMUNICATIONS

The statistical portion of the Report supplies ample evidence of the fact that the State is adequately served by modern communication facilities and that industry and the general economic welfare are fully provided for as of the present and in promise for the future.

SUMMARY

Summarizing the situation as it concerns the "Public Service Industries," it appears that the State is well supplied with public service facilities and that, in general, these facilities are efficiently operated.

The State's economic well being requires adequate and relatively inexpensive transportation facilities, particularly as the service medium for its supply of fuel, other than that originating in farm woodlots.

Because of the State's remoteness from fuel sources and lack of sites for low cost hydro-electric power, it is not possible to produce low cost power in large blocks, such as are required for successful metallurgical or electro-chemical operations, but this fact does not prevent the application and use of other electric power by industries which primarily require reliability of service. According to the United States Bureau of Census, 1939, the cost of electric power represents but 1% of the value of the finished manufactured product throughout the United States.

Until some other means of transporting heat energy has been satisfactorily developed, the State will have to depend on rail, water, and pipe line facilities for this most important form of service. Consequently, Minnesota should most

carefully guard the economic stability of those agencies which transport the bulk of the State's fuel requirements, as well as its raw materials and manufactured products. Disruption of transportation in the State resulting from financial difficulties of the transportation agencies, would be extremely detrimental to the State's economy. Minnesota's transportation facilities are adequate, and, with time, when and as needed, should increasingly favor the highly desirable development of certain types of manufacture within the State.

B. Iron Ore Industry

Introduction

Iron ore is an irreplaceable natural resource, valuable as a basic raw material used in the manufacture of various highly refined products, ranging from automobiles to watch springs, which permeate the whole economic structure of the United States. The mining of iron ore is basically an extractive industry dealing in a raw material of low price per unit, which if it were sold in open market would be subject to pure price competition.

In the investigation and analysis, trends have been developed which in many instances have been modified by the increased importance of the industry in prosecuting the war.

Importance of the Industry

The mining of iron ore in the State of Minnesota has been most important in the economic development of the United States during the last four or five decades. It has contributed in a large measure to the economic welfare of the State of Minnesota through the employment it furnishes within the State and the amount of taxes it pays to the State and local governmental units.

In addition to direct employment and taxes, it contributes indirectly to the economic welfare of Minnesota through the use of railroad, dock and lake shipping facilities, the purchase of supplies (particularly timber) within the State and the payment of royalties to the State and private owners. The blast furnaces and the steel mill at Duluth undoubtedly are the result of and dependent upon the mining industry.

Ex. III-C-12

In the past ten-year period (1933-1943), the iron ore mined in Minnesota has increased from 60% to 70% of the total production of the United States. The low point for this period occurred in 1938 when Minnesota's production, as a percentage of the United States total, dropped to approximately 56%. This is the only year in which the proportion was less than it was in 1933.

Ex. III-C-10

As a source of iron ore, Minnesota's current leadership is based mainly upon the large reserves of open-pit direct shipping ores. Minnesota's percentage of the total United States production of iron ore increases in years of large production and decreases when production is small. This results from the relative ease with which the rate of production by the open-pits may be increased or decreased to correspond with current demands. Therefore, the increase noted in Minnesota's proportion of the total production in the United States

is almost entirely due to dependence on Minnesota's open-pit mines for the additional ore needed during the war years.

The Minnesota taconite, as a possible future source of iron ore, must meet acute competition from New York and other places.

Mining Properties and Reserves

The three Minnesota ranges, Vermilion, Mesabi and Cuyuna, are located in the northeastern quarter of the State within approximately 100 miles of Lake Superior. The Mesabi range is not only the most important of the three, but it is the most important source of iron ore in the United States. Shipments from the Mesabi range started in 1893, shortly after the discovery of the ore. Ex. III-C-2

Properties vary in size, depth of overburden, depth of ore, quality of ore as regards structure, and grade of ore affected by iron, silica, and impurity contents.

At the end of the year, 1944, the reported Minnesota iron ore reserves in the ground and in stock piles approximate one billion tons. In addition, it has been estimated that iron bearing formations including Taconite containing not less than 35% iron, exceed thirty billion tons. In Minnesota, these are not presently considered as "merchantable ore." During the 32-year period from 1907 through 1939, the reserves of the Mesabi and Vermilion Ranges decreased only 45 million tons. During this period shipments amounted to over one billion tons. Reserves have not decreased by a similar amount because of new discoveries; because of small increases in the amount of reserves by current drilling, particularly in underground operations on the Vermilion Range; and because of the reclassification into ores, of materials that were known to exist, but were not previously classified as ores. Looking to the future, it cannot be expected that new discoveries will continue to add to the reserves at the rate indicated in the past. Improvements in beneficiation processes may increase the reserve tonnages, but reserve valuation will not be increased accordingly. Vol. II, p. 93 Vol. II, p. 97

As for the future, it can certainly be anticipated that, as long as the open-pit direct shipping ore is available, the Mesabi Range will continue as the leading source of ore in the United States. However, a major concern of the State is whether the steel industry will continue to look to Minnesota for its iron ore requirements as the open-pit direct shipping ore is gradually exhausted.

Mine Ownership

There are approximately 500 ore properties listed by the State, including 420 on the Mesabi Range, and they are owned by various steel companies or their subsidiaries; by individual interests and by the State of Minnesota. The State owns, in whole or in part, 66 of the properties representing about 10% of the known reserves. Vol. II, p. 88

MINE OPERATORS

The State and most private individual owners do not mine their own properties. Instead, the properties are leased to steel companies, their subsidiaries or agents, or to mining companies on a royalty payment basis. In 1943, ore was mined from 95 owned and leased properties by 23 mining operators.

Royalties are based on tonnages of ore mined except that a minimum yearly royalty is specified in the leases. The amount of royalty varies with different properties. The trend of costs of royalties has been upward. For the period 1921 through 1941, the average royalty cost, spread over all the ore tonnage mined including that mined from direct-owned properties, approximated $0.43 per ton with a maximum of $0.547 per ton in 1932, a year of low production, and a minimum of $0.379 during 1937, a year of high production.

VOL. II, p. 92

For the fiscal year ending June 30, 1942, the State received about $4,300,000 in royalties from leases on State owned mining properties, which is about $0.25 per ton of ore shipped that year from State owned lands. Monies so derived became part of the Permanent School or State University Funds.

VOL. II, p. 90

Though the trend in royalty costs of new or renewed leases has been upward, as stated, the State in a recent legislative act, adopted a sliding scale of royalties, so that the poorer grades of ore pay less than higher grades.

MINING OPERATIONS

Since 1892 when mining was begun on the Mesabi Range, the proportion of ores shipped, that have been mined by different methods, has varied from time to time. From the beginning until 1903, the proportion of underground direct shipping ore to total ore shipped increased to a maximum of 51%, equivalent to 6,500,000 tons. Open-pit direct shipping ore constituted the balance. Though the amounts of underground direct shipping ores continued to increase until 1918, when 10,000,000 tons were shipped, the amount of open-pit direct shipping ore increased more rapidly, so that the proportion of underground ore shipments dropped from 51% to 25%. Meanwhile, about 1908, shipments of concentrates had begun and in 1918 constituted 12% of the total. These trends have continued so that in 1943 the proportions of shipments of underground direct shipping ores, open-pit direct shipping ores and concentrates were 4%, 75% and 21% respectively. In 1943, shipments of underground direct shipping ores had dropped to 2,500,000 tons.

EX. III-C-10

During periods of low production, the proportion of shipments of underground direct shipping ores temporarily tends to increase because the open-pit mines react more quickly to change in the demand for ore. The type of excavating and handling equipment is constantly being improved.

While the total quantity of ore classified as reserves has not materially decreased during the above mentioned period, the quality of the ore is appreciably lower in grade. Mere comparison of analysis over a period of years does not tell the whole story, since increasing percentages of ore mined have been beneficiated before shipment.

Since 1910, the average iron and silica content of ore has been quite uniform, although the iron content decreased and silica content increased compared with shipments prior to 1910. More beneficiation has become economically possible with the decrease in average iron content of all ore mined, and in the interests of conservation. Ex. III-C-7 Ex. III-C-8

The degree of beneficiation is increasing as the quality and structure of mined ore become poorer. The percentage of ore needing beneficiation that can be made merchantable by washing is also decreasing with the decrease in iron content of ores mined. From the foregoing, it is reasonable to assume that the future rate of beneficiation will continue to increase as the average iron content in ore mined decreases. Similarly the degree of beneficiation will increase because of poorer grade ores in which the iron minerals are not as easily separated from the gangue or rock material.

The State, as well as mining and steel companies all are interested in developing and improving methods of beneficiating lower and poorer grades of ore at costs which will allow their use in a competitive market.

Markets for Minnesota Ores

Most of the Minnesota ores are consumed in the blast furnaces bordering the Great Lakes and in the furnaces in the steel districts south of Lake Erie. Roughly, the Allegheny Mountains form the boundary line between east and west competing areas.

Freight rates from the Mesabi and Cuyuna Ranges have experienced an overall increase in the period from 1892 to 1943. The rates to shipping ports from Ely on the Vermilion Range have decreased and in 1943 the rate from Tower and Soudan was about the same as in 1892. Cost of transportation constitutes a large part of the delivered costs of ores.

Because of distance advantage, ores from Michigan, Wisconsin and New York enjoy a favorable differential, compared to Minnesota ores, in transportation costs to the Pittsburgh and Youngstown districts; at present it is overcome by the lower mining costs in Minnesota.

Minnesota underground and lower grade open-pit ores meet stiff competition from other iron ore regions in the United States. Direct shipping open-pit ores generally must compete with scrap in the production of steel. The Vol. II, p. 106 Vol. II, p. 113

primary factor in the use of scrap is price. It can be anticipated that the use of scrap will increase with the need for beneficiation and its accompanying increased costs.

Direct shipping open-pit ores must also compete with foreign and local ores which make possible diversion of iron and steel production from plants supplied by Minnesota ores to plants on the Eastern seaboard and in the West. The need for iron and steel during the war has prompted the Federal government to subsidize the construction of steel plants, and, to the extent that this policy is successful and permanent, it will lessen the demand for Lake Superior ores by diverting steel production away from the plants built to use these ores. This may substantially lessen the competitive advantages now enjoyed by the Minnesota ores.

Minnesota has only 1.6% of the world's known ore reserves. To date imports have not been excessive, but they do indicate that foreign ores are
Ex. III-C-14 able to enter the United States market in competition with Minnesota ores. These ores are on the border line of a price advantage that could so change as to make them the major source of iron ore for the United States. The Minnesota iron ores predominate in the United States because of their nearness and the ease with which they are mined and the consequent price advantage. Because of the gradual need for beneficiation, the shift of this price advantage to foreign ores or to other ores within the United States would remove Minnesota from its current favorable position.

IRON ORE PRICES — LAKE ERIE PRICES

Only a small percentage of the ore mined in Minnesota is sold in the open market and prices paid are confidential. The Lake Erie price, which now is more of a list price than an actual selling price, is the only published index of price trends. Such ore as is sold, is usually sold below the Lake Erie price. The State Tax Department, lacking other definite prices, uses the Lake Erie price in deriving taxable values for the ad valorem tax on some properties, and in all cases for computing the occupation tax.

Ex. III-C-11 From the date (1895) when the Mesabi actively came into production until 1943, the Lake Erie prices for both Bessemer and non-Bessemer ores have increased in a ratio of 2 1/3 to 1. In comparing the years 1915 to 1943 the ratio of increase is 1½ to 1. Future prices may be limited by the competition of iron ore from other sources and the competition from scrap.

COSTS

The costs per ton of open-pit mining operations have averaged less than 50% of those for underground operations for the period 1926 to 1941. This

relationship between underground and open-pit operations has undoubtedly accounted for the shift from underground mining to open-pit operations. The cost of open-pit operation has remained fairly constant while the cost of underground methods has increased during this period. Ex. III-C-3

The average costs per ton of mining for all ranges in Minnesota decreased during the period 1921-1941. This does not represent a decline in cost levels, but may be attributed to the shift in operations from the more costly underground to the less costly open-pit methods. Within each method there is a large variation in costs. This variation makes it dangerous to generalize in specific cases.

The cost of common labor has shown an overall trend upward. During World War I there was a decided increase in labor rates, later decreasing at the close of the War, but not to the prewar level. Ex. III-C-27

The output per man has increased during the period 1906 to 1943. In the period 1915 to 1943 the output per man increased in the ratio of 3 to 1 while in the same period labor costs increased 3⅛ to 1. The increase in output per man may be attributed to the change from underground to open-pit mining methods, and to technological improvements. Ex. III-C-24 Ex. III-C-25

The mining labor cost per ton of open-pit ore mined in 1926 was $0.137 and in 1941, $0.138. In underground operations the comparable figure for 1926 was $0.953 and in 1941 $1.033. These figures would indicate that technological improvements have not been able to keep up with increasing labor rates.

It is to be expected that the upward trend in output per man will gradually reverse itself to a downward trend as beneficiation becomes increasingly necessary.

In the nineteen year period from 1923 through 1941, iron ore industry has paid out in wages and salaries, $286,830,000 or an average of $15,090,000 per year. Ex. III-C-26

Taxation

Much controversy has centered around taxation as imposed by local communities, school districts, counties and by the State in the form of ad valorem, occupation and royalty taxes. There is undoubtedly strong feeling in the Iron and Steel industries that the tax policy of the State of Minnesota has been unduly oppressive. Operators point to the fact that iron ores are assessed for ad valorem tax purposes at a rate 25% higher than other industrial real estate; that the occupation and royalty taxes are substantially more burdensome than any taxes imposed upon other industries in the State; that local expenditures in mining communities have been on a scale much higher than other portions of the State. Vol. II, p. 129 Vol. II, p. 137 Vol. II, p. 132

The feeling is that, despite assurances to the contrary, this tax policy will be

continued and that attempts will be made by the State and local communities to exact from lower grade and underground ores the same amount of money as is now exacted from higher grade ores. This undoubtedly tends to discourage investments in such low grade ore deposits. The State cannot expect the mining companies to make the large investments which will be needed for the development of the extremely low grade ore materials of Minnesota so long as the fear of adverse tax treatment continues.

As the high grade open-pit ores in a particular community approach exhaustion, acute tax problems arise. At the present time the Minnesota laws provide no mill rate limitations on the tax levies of home rule charter cities (except as such cities may incorporate such limitations in their charter) and provide no effective mill rate limitations on the tax levels of independent school districts. The high level of local expenditures cannot be maintained in communities where the direct-shipping ore is being depleted without arriving at a critical point where the remaining ore becomes valueless because it cannot carry the tax burden.

Ex. III-C-23

In Eveleth, for instance, the tax rate has increased over a period of 10 years about 66% from 109 mills in 1934 to 180.8 mills in 1944. While the other iron range communities do not yet present this problem in an acute form, unless a solution is reached in Eveleth, in years to come each of the other Mesabi Range communities will be confronted with the same problem. The taxes which these communities and school districts can collect are prevented from rising to unlimited sums by the per capita tax limitations. A corresponding mill rate limitation on ordinary expenditures could prevent unduly high taxes on the diminishing iron reserves in a community.

The importance of taxes as a factor in the cost of producing iron ore is indicated by the following summary:

Ex. III-C-18

The iron ore industry has paid and is paying annual taxes in Minnesota averaging more than $20,000,000. This is more than 10% of the tax income of the State.

Ex. III-C-19

The taxes per ton of ore shipped unfortunately vary inversely with the quantity of ore shipped, namely, the less shipped the higher the taxes per ton.

Ex. III-C-20

The ad valorem taxes, as a percentage of the total taxes collected from the industry, are decreasing.

The royalty and occupation taxes, as a percentage of the total taxes on the ore, are increasing.

The taxes levied by School Districts and Towns or Municipalities, have decreased proportionately from 75% of the total taxes levied on ore in 1920 to approximately 37% in 1941.

During this same period the proportion of taxes levied on ore by the State has increased from 9% in 1920 to 48% in 1941.

The taxes levied by the County, in percentage of the total taxes levied on ore, have remained fairly constant throughout this period.

As a percentage of total production costs throughout the period 1921 to 1941, taxes reached a low in 1941, but even then they were 25.6%. Ex. III-C-3

The industry has been able to bear the burden of taxation in the past and still have a price advantage over other sources of ore, but this has not always resulted in the use of the best mining policies and practices.

The iron ore industry contributes to the economic well-being of the State of Minnesota by the amount of employment it furnishes within the State and by the sums it pays to the State in taxes and royalties. The industry per se is one of decreasing assets that cannot be replaced. For the State's best interest, it is apparent that the contributions by the iron ore industry to the State's support should be so balanced that the maximum advantage will be achieved by the State as a whole.

If it should be possible to encourage a proportionate increase in the employment of its citizens through a reduction of taxes, this should be done for the advantage would be twofold. Evidence of the realization that taxes must be adjusted to permit the development of beneficiation processes is furnished by the so-called Taconite Bill, and further, by the incorporation of the labor clause in the Occupation Tax law.

Iron ore and mineral bearing deposits that contain iron cannot be lumped together in any discussion or treatment of the taxation or of the employment problem. If taxes should be reduced on the open-pit direct shipping ores, shipments and consequently employment would not necessarily increase. At all times, shipments of iron ore depend principally upon the demand for steel.

As long as any ad valorem tax is imposed on reserves, even though such tax is reduced, a tendency will still remain (though reduced) to ship open pit direct shipping ores first in order to reduce the valuation of these reserves at the maximum rates.

The possibility of the beneficiation of low grade ores and various types of iron bearing formations lies in the development of processes and adjustment of taxation to the end that ore so produced may enter the competitive market. Unquestionably tremendous capital outlays will be necessary in plant and equipment for any large scale beneficiation operation.

In that event, it is further indicated that more man hours of employment per ton of ore produced will be necessary. The added costs of production of beneficiated ores must be offset to bring the ores so produced into a competitive

market. This can largely be aided by a more temperate tax policy than that now being applied to the high grade open-pit ores. The measures through which this tempered tax policy is placed in effect should guarantee to the operators of beneficiation plants a maximum of stability of the revised tax structure.

The future of the iron mining industry in Minnesota is an immediate problem as it concerns many companies. Certain companies, as they face the future, are now determining their policies with respect to immediately available holdings of ore. The very companies paying the present tax burden are the companies to which the State must look for the development of the low grade ore materials. The tax structure of Minnesota will be a major consideration in these determinations. Therefore, it is to Minnesota's advantage to establish its future tax policy at the earliest possible date.

It is evident that a reduction of taxes can be a material compensating factor for increased production costs. From 1920 through 1943, the mining industry has paid to the State and its subdivisions, in the form of taxes, $513,800,000 or an average of $21,400,000 per year. As of June 30, 1940, of the $108,000,000 in the various State Trust Funds, $44,000,000 came from royalties on iron ore and $24,000,000 from the Trust Fund's share of occupational taxes on iron ore. It is apparent that the State would be well advised to do all in its power to encourage and insure the continuance of this important industry.

Profits from Iron Mining Operations

Selling prices are confidential and the mining companies jealously guard their figures for gross and net incomes. An approximation of certain unit costs may be derived from the Reports to the Tax Commission and if these figures are compared with the "Lake Erie Prices" it appears that there are extreme variations in costs and profits among different mining properties.

Conclusions

Minnesota has been the dominant factor in the iron ore mining industry of the United States. At the existing rate of mining and under existing operating and economic conditions, the known Minnesota reserves of merchantable ore will not be exhausted for at least 16 years. Beneficiation will become a more and more important factor in iron ore production.

Ex. III-C-17

Minnesota has competition in iron ore production, and competition will become keener from other domestic and some foreign ores, as well as from scrap iron and steel. There will be competition, though not serious, from substitutes for steel.

The State, counties, communities and school districts have taxed the

mining industry, rather heavily. The ad valorem tax has been the most burdensome tax and, owing to its size, has been particularly burdensome in years of low production. The ad valorem tax has been the cause of uneconomical development of the ore properties, and the abandonment of some high cost properties.

The State, through per capita tax limitations, has reduced the ad valorem taxes collected for local, municipal and school purposes, but such reductions have been offset by the State's collections through passage of the occupation and royalty tax bills and the gradual increase in the rates of State levies.

Taxes on Minnesota ore are high compared with other states. The total tax when applied on the basis of tax per ton of ore mined in Minnesota is two to three times as high as the tax per ton of ore mined in Michigan. When, however, the taxes are compared on the basis of tonnage of respective reserves, the taxes are approximately the same.

For the year 1941, the mining taxes were 12.4% of the total taxes levied in the State of Minnesota for all purposes. The tax burden has not stifled the industry as a whole, as is evidenced by the fact that Minnesota was able to meet the demands of the steel industry for the war period with a peak production of 75,000,000 tons in 1942, which in that year was almost 70% of the total ore produced in the United States.

Several of the mining companies have made large capital expenditures on mines, equipment and structures in other states, in preference to attempting to concentrate or beneficiate low grade ores or taconite in Minnesota. Among the causes which contributed to these decisions may be included the desire to obtain a better grade of ore to mix with the poorer grade of Mesabi ore, and general economic considerations.

VOL. II, p. 109

The State through many legislative acts has been encouraging the development of lower and lower grade ores. These acts have decreased the tax burden on the low grade ores and placed more and more of the burden on the high grade, easily mined, ores.

The ad valorem tax has discouraged exploration work for new reserves.

C. Miscellaneous Mining and Quarrying

Minnesota has many mineral resources, some of which are being utilized and some of which have latent possibilities.

Iron ore is the one mineral resource which has been developed extensively. Other mineral resources which have been utilized to varying degrees include low grade manganese ore deposits, building materials, such as sand and gravel and building stones, peat, limestone, clay and shale deposits, but these are not available presently for large scale development.

All of these raw materials have potentialities. In addition, there are other minerals not now utilized which could become useful. These include magnetite, containing titanium and vanadium; low grade bauxite ores and high aluminum clays; dolomite (containing magnesium); limestone and marls for cement and other manufacturing; peats for fuels, chemicals, insulation and packing.

Minnesota has no commercial source of fuel in the form of coal, oil or natural gas.

D. Forestry

Economic Importance

The forests of Minnesota, occupying 40% of the State's area in 1940, have frequently been referred to as the State's largest renewable natural resource. They furnished the State's first cash crop and lumbering was the major export industry of Minnesota immediately subsequent to the Civil War. For 10 years ending with 1900 sawmills employed about 15,000 men annually. In addition, lumbering operations furnished a local market for hay, grain and foodstuff. Vol. II, p. 150 Vol. II, p. 164

In prewar years, Minnesota's forests were occupying an entirely different position in the State's economy. Interest therein has varied widely. A large portion retained in the hands of the Federal government, including Indian reservations, was and is being given treatment that accords with a rational policy of conservation, combining a certain amount of experimental regeneration and encouragement of its use for recreational purposes, together with a carefully regulated program of cutting. Another and still larger portion of the forest land now in the hands of State and county authorities includes unsold grant lands and lands acquired largely by tax forfeiture. Commercial use and development of the forests now involves a minor portion and is chiefly concerned with the production of pulpwood. Vol. II, p. 166

With respect to the State's economy and future possibilities, the forest situation in the State of Minnesota has been subjected to a brief study in an endeavor to discover the causes for this extraordinary change that has occurred during the passing years and whether conditions can be corrected with a view to restoring the forests to the position of a highly important economic asset.

Ownership

The 40% of the total State area in forests in 1940 was owned as follows:

Federal Government	16% or	3,200,000 acres
State	20	4,000,000
Counties	15	3,000,000
Farm Woodlots	25	4,800,000
Private Holdings (largely by individuals)	21	4,200,000
Commercial Timber Tracts	3	500,000
Totals	100%	19,700,000 acres

VOL. II, p. 162

This situation with its large amount of State and County ownership is the result of too high valuation of cut-over land for tax purposes which has forced private owners as well as corporate owners to abandon their holdings as soon as the timber was cut. Only 3% of the State's forest land remains in commercial tracts.

As a result of study, it may be determined to be in the public interest to transfer back into private ownership and management much of the forest land acquired by the State and counties by tax forfeiture, in order to re-establish the production of forest products on a larger scale. If so, such a transfer cannot be accomplished without the correction of conditions responsible for the present extent of public ownership.

CHANGES IN VALUE

VOL. II, p. 155

In 1850 the forests occupied 70% of the State's area and were made up of virgin stands estimated to include 20,000,000,000 board feet of merchantable pine, which, at an estimated value of $0.50 per 1,000, would have been worth $10,000,000. By 1910, six more species had become merchantable as sawtimber with an estimated 24,000,000,000 board feet of sawtimber stumpage, having an approximate value amounting to $54,000,000 and 30,000,000 cords of firewood worth $30,000,000. It is conceivable that forest values might then have reached a total figure of $84,000,000, conservatively stated.

Ex's. III-A-1, 2, 3, and 4

Despite decreasing areas and notwithstanding the cutting of a vast amount of pine, by 1939 the total value of timber stands had reached about $191,000,000. This total was made up as follows:

12,000,000,000 ft. sawtimber	$72,000,000
36,000,000 cords pulpwood	92,000,000
27,000,000 cords firewood	27,000,000
	$191,000,000

It must be recognized that, in the development of the foregoing approximations, the purpose has been to show the trend in values rather than to attempt to supply any absolutely accurate measure of the State's timber wealth. The trends have reflected the effect of new products, the use of species at one time considered worthless, and the rise of stumpage prices reflecting a growing national scarcity.

The above mentioned changes in character and value were accompanied by the transfer to agricultural use of a large portion of the areas previously occupied by pine, which areas were and are of greater economic use as farm land. Yet, despite their reduced area, the increase in value of the forests as a whole has not even nearly attained its possibilities. Minnesota's forests have

been subjected to deterioration of two general types, one of which definitely has been due to ravages of fire and infestation by insects and fungi, and the other has been due to an illogical type of taxation.

Minnesota's relatively high "normal" annual timber losses from fire and other destructive agencies as compared to the similar loss in other Lake States is well illustrated in the following:

State	Loss in Percentage of Drain
Minnesota	37.2%
Michigan	10.4%
Wisconsin	8.9%

This would indicate that Minnesota's forests have not been receiving even reasonably adequate protection. Records for 1940 show that 64,173 acres were burnt over with a cost of $70,550 for fire fighting. Although this shows a loss of less than 1% of the total forest area, it still is a poor record because all but a few fires due to lightning were man made and therefore probably preventable. VOL. II, pp. 159 and 160

The greatest single element affecting values of privately owned forest areas injuriously, is probably the form of present taxation, which will be discussed in greater detail as affecting income.

An outstanding, immeasurable element of forest value is hydrological. Any program of forest maintenance should be combined with the protection of Minnesota's water resources; but it is the opinion of the authors of this Report that proper and organized protection of these resources has not been afforded. VOL. II, p. 157

Summarizing the changes in forest value during the passing years, it is clearly indicated that, despite the decrease in forest area and the handicaps imposed by lack of care, values have increased enormously. As a result of their study, it is the opinion of the authors of this Report that the forestry record of the recent past can be materially improved upon in the future: VOL. II, p. 155

CHANGES IN TYPE AND EXTENT OF GROWTH

Opinions vary as to what might have been the present-day value of the so-called original stands of white pine and red pine which are now under an aspen cover. In other words, if in the field of "pure" competition, non-farm areas which had been occupied originally by white pine and red pine were still in existence and if they had been maintained through proper rotation, would their product stand a chance against lumber now being shipped from the other states? The answer of course is "No," on account of the lack of quantity, which is an important factor, if not the deciding one. The quantity should be sufficient to warrant the application of mass production and it is not. VOL. II, p. 150

VOL. II, p. 152

Records show that 2,686,000 acres formerly occupied by pine are now occupied by aspen (2,135,000 acres) or are entirely deforested (551,000 acres). As of today, the State is definitely out of the general market for white pine or red pine lumber. There are presently only about 400,000 acres of white pine or red pine in the State, including all ages. Any attempt to restore white pine and red pine within its original acreage or any large portion thereof is dependent upon certain factors that have hitherto interfered with the possibility of such development. One of these is that aspen is apparently of greater value for pulpwood and certain lumber uses. Also, it has been found difficult to secure satisfactory natural regeneration of white pine and red pine.

In this connection it should be noted that the United States Forest Service is growing white pine and red pine in the Chippewa National Forest by both natural and artificial regeneration.

Jack pine, covering 1,266,000 acres and occupying an area which was never invaded to any great extent for farm land, is used at the present time for both sawtimber and pulpwood, as no great change in type or extent of growth has developed in the case of this particular species.

PRODUCTION

VOL. II, p. 149
VOL. II, p. 162

Including the major products, i.e., lumber, pulpwood and firewood, it is estimated that the State has a total stand of 90,000,000 cords of merchantable timber, but this is represented as now showing an average annual marketable growth of only one-seventh of a cord per acre.

VOL. II, p. 151

For many years Minnesota has used more lumber than it produced. The trend of production and consumption is illustrated in the following.

Year	Production Million Ft. B.M.	Apparent Consumption Million Ft. B.M.
1922	555.3	985.5
1928	442.3	736.5
1936	123.0	549.6

It is believed that if interferences are eliminated and encouragement given, enough lumber can be grown within the State for its own use with a period of twenty years. It is true that the necessity of supplying its own needs may never arise, yet the possibility does eist. For instance, Minnesota now depends primarily upon the Pacific Coast for the remainder of its lumber requirements. If in the course of the progressive development of industry on the Pacific Coast, the market in that region should absorb a heavier proportion of its own lumber production than at present, and if the Atlantic Coast should offer a better market for Pacific Coast lumber than it does at present — it is quite conceivable that

VOL. II, p. 152

Minnesota might find itself in the embarrassing position of paying a premium for outside forest products which could have been grown at home, because of the fact that it costs more to deliver Pacific Coast lumber to Minnesota by rail than it does to deliver it to the Atlantic Coast by water.

At the present time the primary interest in Minnesota's forests has been increasing in pulpwood. Trends within the last twenty years show an increase from the rate of consumption in 1919 of 204,000 cords to a prewar consumption in 1940 of 349,999 cords, and an amount far in excess of this figure during the present war period. Prewar, 54% of the State's output went to local mills and the remainder was divided between Wisconsin (32%), Canada and other states (14%). VOL. II, pp. 152 and 153

As of January 1940 production of pulpwood (wood at the mill at $10) was estimated to have a value of approximately $4,330,000. Because of the extent to which pulp mills have been developed within the State, pulpwood has become well established now as the most important forest product in Minnesota. VOL. II, pp. 154 and 155

Apparently there are no complete data covering the cut of fuelwood because that has always been regarded as a minor wood product and the information regarding it is rather scant. However, its economic importance as a major source of fuel supply for a large percentage of the population is obvious in the light of an estimated use of 3,000,000 cords per annum including tops and cuttings from accessible sawtimber stands. If the value of fire wood in Minnesota for roadside delivery is estimated to average $10 a cord, the total cut in the State would represent a business transaction of $30,000,000 a year, although it is realized that much of it is "paid for" by the farmer in the form of his own labor in taking his supply from his own woodlot for his own use.

EMPLOYMENT

Since the end of the Civil War when woods work began in earnest as a separate full-time occupation, there have been many and significant changes. The first operations naturally were relatively simple. From such primitive beginnings, there was a steady improvement and diversification of tools and machinery. Furthermore, in the lumber camps, production on a big scale forced specialization. Since the beginning of the big white pine and red pine cuttings every large operation has had its experts for the various branches of the work. VOL. II, p. 164

As for the number of those employed, the Census records began in 1870 with 207 sawmills and 2,952 workers, and there was a steady increase to a maximum of 16,170 workers in 1890 with 392 sawmills. From that time, the number of sawmill workers decreased to 5,222 in 1933; but by that time, in addition to sawmills, there were in the State 8 pulp mills employing 855 men, 67 other wood using plants with 922 men, besides 4,400,000 man days of firewood cut-

ting. Making allowance for part-time work such as firewood cutting, it is estimated that 35,000 persons were employed in 1933 in woods work and wood using plants. At that time, however, fire protection, insect and fungus protection, road building, stand improvement and recreation activities were not as well developed as now, so that it seems conservative to estimate the total annual payroll in 1940 as $35,000,000 with a wartime peak (1943) of 50,000 men. Based on an average annual wage of $800, this would indicate a payroll of $40,000,000.

As derived from Census and Survey figures, the foregoing records consolidate employment data relating to both woods work and that of an industrial nature. Consequently it is difficult to develop trends indicative of the extent to which employment opportunity is developing within the forests of Minnesota with respect to woods work only.

INCOME

It is common practice to consider income from forest products in rather general terms, with a tendency toward inconsistency in terminology. For the purposes of this Report, forest products include the following: lumber "on the road"; pulpwood ready for delivery to the mill; and firewood "on the road". With due appreciation of the processed values of these products, increase in value is developed only where processing takes place; i.e., pulpwood cut in Minnesota and processed in Wisconsin contributes to the value of manufacturing in Wisconsin. The greater the strength of the pulp processing industry in Minnesota, the greater the benefit that inures to Minnesota. With these facts controlling, the annual production of forest products in Minnesota has shown the following trends as to annual gross income value:

VOL. II, pp. 154 and 155

Product	Approximate Gross Income Value of Annual Production 1850	1910	1939 - Roadside
Lumber	$500,000	$15,000,000	$ 4,500,000
Pulpwood	—	—	3,200,000
Firewood	50,000	24,000,000	30,000,000
Totals	$550,000	$39,000,000	$37,700,000

VOL. II, p. 162

Taxation is one of the most serious and uncertain elements of expense in the cost of growing timber. In fact, within the industry it has been considered the greatest incentive to over-cutting. Its effects have been recorded previously within this Report in the form of material losses of forest land from the category of private ownership because of tax forfeiture.

The Auxiliary Forest Law, passed in 1927, was intended to permit the

owner of forest land to pay a reasonable ad valorem tax annually on the value of the land and growing stock, plus a yield tax. This law should have universal application as a substitute for the present ad valorem tax.

There appear to have been difficulties in the administration of the Auxiliary Forest Law, probably because local authorities have been loath to reduce, in conformity with it, the assessed values upon which they depend for local revenue to the lower values that it would have involved. During the period between 1920 and 1930, ad valorem taxes in the State applied to forest land ranged from $0.17 to $0.68 per acre per annum, averaging $0.28. Under the Auxiliary Forest Law, the maximum tax on the growing stock and land is at the rate of $0.08 an acre, yield being taxed at the rate of 10% in addition when cut. The latter basis of assessment is reasonable as to type in that recognition is taken of the difference between the "producing plant" and the product thereof by taxing each separately.

The following illustration as to the effect of the two forms of taxation is based on figures previously developed in this portion of the Report:—with standing timber having an average value of $2.10 per cord, a rate of production of about 1/7 of a cord per acre would result in a production value of $0.30 per acre. Against this figure, an ad valorem tax of $0.28 would be confiscatory, whatever division might be made of the total tax as between producing property value and product. Obviously, the tax under the Auxiliary Forest Law, in this instance totaling $0.11, would seem to be at least somewhat more reasonable.

It seems to be the general impression that under the ad valorem law the situation as it has affected the interest of the private operators has definitely discouraged continuance of private ownership and maintenance of forest areas. Until the tax situation is put on a cleancut basis definitely equitable and supplying incentive to the commercial development of the forest, whatever form taxation may take, there is little possibility for the development of a constructive program of reforestation or reestablishment of Minnesota's forests as a source of income and employment.

Recreation as a Forest Use

In the survey of the situation in Minnesota no sufficiently reliable figures have been developed for adequately estimating the value of recreation to the State. Various estimates have been given, ranging up to $138,000,000 of gross income per annum, with no measure of cost as an offset nor any indication of the extent to which these values might conceivably be confused with other figures of private income.

Vol. II, pp. 158 and 159

There may be no question about the gross income derived from hunting and fishing licenses, but no record exists as to the elements of offsetting cost.

Unquestionably, gross income of substantial amount is derived by the State and its population from tourist trade. This might well be a subject for careful study to determine its net value and the justification for expenditures and its development.

There is no doubt that for the State of Minnesota there is a distinct potential value in forest, lake and stream care to promote the welfare of its inhabitants and to attract to the State permanent residents whose presence can become an asset.

Under war conditions, it has not been possible to develop fully the facts and possibilities with respect to this so-called industry. Its inclusion in this portion of the Report serves simply to emphasize the fact that, in connection with forest development and use, not only should full recognition be given to forest maintenance and reforestation in sustaining the attractiveness, scenic beauty and useful value of recreational areas, but also that allocation of cost should be made with due appreciation of both the social and economic benefits to be derived.

Summary

Summarizing the situation as it concerns Minnesota's forests:

1. It is apparent that an appreciable value exists with latent possibilities for commercial development and employment which are not fully realized.

2. Despite a variety of handicaps, outstanding among which is the generally applied system of ad valorem taxation, values have increased at a substantial rate and are susceptible to materially greater increase under a program of better protection and a more logical form of taxation.

3. The interdependence between forest use and development and manufacturing, is well illustrated by the extent to which sawmills once made an important contribution to Minnesota's standing as a manufacturing state. The need of sawmills may or may not again develop.

On the other hand, the importance of pulp wood is increasing rapidly, not only as an outlet for forest production but as raw material in a variety of forms for manufacturing, including such products as paper, rayon and plastics.

E. Manufacturing

GENERAL TRENDS

The growth of manufacturing in Minnesota was promoted by the rapid development of the Northwest with the ensuing demand for manufactured articles of all kinds. Manufacturing progressed throughout this development period until the year 1904, at which time Minnesota produced 2.16% of all manufactured articles in the United States. Since that time, it has declined relatively until in 1939 it produced only 1.5% of the manufactured articles of the United States. In the year 1939 manufacturing was relatively lower than for sixty years. In 1879 it amounted to 1.42% of the United States total. VOL. II, p. 171

The trends in flour milling might be cited as typical of the changing compounds of the total of manufacturing. Flour milling was one of the earliest industries in Minnesota, rapidly grew to primary position nationally and internationally, and then declined for similar reasons to the historical pattern of other flour milling centers in the United States. Flour milling took on economic significance to the State only as production rose above local needs and found distribution in national and international markets. National distribution began about 1854 and direct export trade in 1878. By 1889, Minnesota had reached first place in flour milling and continued to increase production yearly to a peak of 29,389,889 bbl. in 1916, and then to steadily decline to 11,153,594 bbl. in 1940. There has been a substantial increase since then due to temporary war conditions. VOL. II, p. 179 VOL. II, p. 180

Further extent of the loss in flour milling is revealed by these figures for the State of Minnesota:

Year	Number of Flour Mills	Daily Flour Capacity (Bbl.)	Flour Exported (Bbl.)	Bushels Hard Wheat Grown
1900	324	140,000	5,500,000	51,500,000
1940	81	71,395	None by 1934	32,069,000
(1909 peak)				94,080,000

VOL. II, p. 180

Bread wheat from the Dakotas, shipped through Minnesota gateways and available to the flour millers, declined from a peak of 25.7% of the nation's total to 16.1% of the total in 1943.

Factors contributing to the decline in flour milling in Minnesota were:

VOL. II, p. 180

1 Reduction of per capita annual consumption of flour from 200 lb. to less than 160 lb.

2 Progress in diversified farming which reduced wheat growing in favor of perishable crops far more remunerative to the farmer.

VOL. II, p. 181

3 Raising of hard types of winter wheat, particularly in the Southwest, rivalling the hard spring wheats of the Northwest for flour value.

4 Shifts in the center of population in line with new freight rate bases gave advantages to new wheat raising areas at expense of the Northwest.

5 The elimination of "milling in transit privileges" for Minnesota made it uneconomical to process wheat grown in other areas.

6 Uncontrolled lake freight rates gave the down lake millers an advantage in milling raw wheat close to the eastern market. In addition, they also have the privilege of milling in bond Canadian wheat for export.

7 The highly competitive flour market tends to follow the almost daily fluctuations in the price of wheat and the close margin of a few cents at best prices has forced the establishment of mills at more advantageous locations.

It is true that industrial development in other lines has served to offset somewhat the tremendous loss that has marked the decline in flour milling within the State, but the trend in manufacturing in comparison with trends in the country as a whole and particularly as compared with neighboring states still is markedly downward.

An excellent illustration of the over-all trend in manufacturing is shown in the following, comparing total employment in 1939 with 1909:

TREND IN TOTAL EMPLOYMENT

State	Increase or Decrease 1909-1939
Minnesota	5.9% decrease
Wisconsin	10.0 increase
Michigan	125.5 increase
Iowa	6.0 increase
UNITED STATES AS A WHOLE	19.2 increase

VOL. II, p. 210

In a comparison of a more general nature relating to the extent of manufacturing in ratio to the density of population, the following data relating to the situation in Minnesota further serve as evidence of the downward trend:

Year	Manufacturing-Population Ratio
1889	0.99
1909	0.91
1929	0.83
1939	0.71

VOL. II, p. 171

At some risk of repetition, there follows a brief summary of the situation with respect to Minnesota's relative decline in wealth during the past years as another evidence of trends:

	1904	1937	Percentage of Change	
Per cent of population of U. S. in Minn.	2.16%	1.54%	29%	Decrease
Per cent of wealth of U. S. in Minn.	3.12%	1.72%	45%	Decrease
Wealth per capita in Minn.	$1,729	$1,900	10%	Increase
Wealth per capita in U. S.	$1,318	$2,335	76%	Increase

VOL. II, p. 171
VOL. II, p. 186

It should be noted that in 1904 Minnesota's wealth per capita was substantially above the average for the United States as a whole, and that it has declined to a point below the average in the year 1937.

The decline in manufacturing generally set forth in the foregoing should be a matter of great concern to the State of Minnesota.

To illustrate its implications, which are of State-wide interest, there might be cited:

1. The decreasing importance of the urban manufacturing centers as sources of tax revenue and the necessity of transfer of tax burden to other areas; and

2. A declining field of opportunity and employment for the "surplus" population of rural areas and what is essential to the maintenance of a sound economic balance within the State, the trend of migration from rural to urban areas on the assumption that the latter can supply in the future, as they have in the past, livelihood and opportunity to the young men and women.

OWNERSHIP

With respect to ownership, the outstanding characteristic of manufacturing establishments in the State is that they are almost wholly of local origin, or include branch plants of national organizations whose location within the

State reflects the need of catering to and serving local requirements. Presumably, the establishment or withdrawal of such branch plants will reflect trends of basic industries within the State.

The corporate form of ownership predominates. Taxation on ownership is more severe for this form than for individual business or partnerships.

VOL. II, pp. 206 to 209

Factual data concerning removal of manufacturing enterprises from Minnesota and the establishment of new industries within the State have not been made available for this report. However, indications point to a net loss over the past twenty years, just prior to the present war, as substantiated by the decline in employment and value of products for all manufacturing within the State.

EX. III-I-1

All types of competitive industry have been lost to the State through failure or removal with no positive evidence that equally advanced types of industry have replaced these losses. The loss of such nationally known products as "Toastmaster", "Blue Moon" cheese, "Log Cabin" syrup and "Milky Way" candy bars is serious because of their great advertising value to Minnesota and their business potential.

VOL. II, p. 205

While it is difficult to determine the exact causes of removal from the State, it appears that freight rates, state taxes and labor conditions were manufacturing factors that caused removal to new locations.

INVESTMENT

Records would indicate that new capital investment in manufacturing plants in Minnesota reached a high level in 1919 — $680,000,000 — after years of progressive increase. Census figures are lacking from that period up to the present. This Report estimates, however, that by 1929 this investment exceeded $700,000,000. Whether because of the depression or other conditions affecting the loss of manufacturing to the State, the decline has been gradual, until the late 1930's, when it is estimated to have been something in excess of $500,000,000. From the foregoing, it is evident that accessions have failed to offset losses, the record being one of distinct retrogression.

VOL. II, p. 168
EX. III-I-1

RAW MATERIALS

Raw materials available within any given locality largely govern the type of manufacturing establishment to be found therein, except as in the case of chemical and metallurgical industries which require extraordinarily large amounts of cheap power, and must be located near the source of such power.

It is also true that certain forms of manufacturing such as the automobile industry in Michigan are favored by special advantages which accrue to them by a combination of various economic factors. Among these are:

1. Transportation of raw materials
2. Labor
3. Geographical location with respect to local markets, and
4. Prior entrance and long continuance in an essential industry.

As a location for manufacturing, Minnesota suffers under the particular disadvantage of being fairly far removed from the larger centers of consumption of many forms of manufactured products, particularly those of a bulk nature, and to that extent is competitively handicapped by the cost of transportation from the point of production to the point of consumption. The cost of transportation likewise limits the Minnesota manufacturer's ability to import quantities of raw materials. For instance, so long as Minnesota was in the center of the large bread wheat growing areas of the country, milling was its great manufacturing industry.

VOL. II, p. 198

The present source of Minnesota's raw materials is and naturally must be the agricultural areas of the State and of neighboring communities in the northwest. Of the first nine industries ranked in order of importance in manufacturing in the State, six are dependent on products of the farm.

VOL. II, p. 173

Throughout this Report there will be recognized three classes of competition to which Minnesota products are subjected. These will be described by the terms "imperfect" where the competition is least, "advanced", where the competition is considerable, and "pure" where it is complete, in giving no advantage whatever to Minnesota products.

VOL. II, pp. 184 and 185

Minnesota manufacturers who are to survive on raw materials other than those from agricultural and forest products must be able to turn out a product that is in a class least affected by competition, namely, where the competition is "imperfect".

As the cost of processing raw materials varies greatly, the "value added by manufacture" is used here as a measure of economic worth. These industries which add the larger amount of value are presumed to be of greater economic importance.

VOL. II, p. 175

EMPLOYMENT

For many years Minnesota manufacturers were favorably affected by conditions that enabled labor to live relatively inexpensively and presumably more comfortably. In 1909, manufacturing in Minnesota gave employment to approximately 85,000 people. In 1939, the figure was reported as approximating 80,000 people. Total wages paid in 1909 amounted to about $47,500,000 or at the rate of $555 per annum per employee. In 1939, the payroll was approximately $97,000,000 or at the rate of $1,215 per annum per employee.

VOL. II, p. 210
VOL. II, pp. 211 and 212

It is apparent in the foregoing that in the intervening years labor's progress

was distinctly favorable. At the same time and of particular importance in the prewar years, there is nothing to indicate that labor's earnings had any material bearing upon the diminution of industrial activity in the State of Minnesota or the removal therefrom of industrial plants. During the war period, however, a trend has developed in the cost of labor which can have a distinct bearing upon the postwar ability of the Minnesota manufacturer to compete in the national market, when the added burden of transportation and other elements of cost which are distinctly unfavorable are taken into account.

This is illustrated in the following instances which are considered to be typical of a more general trend.

VOL. II, p. 216

Year	Location	Worker's Average Hourly Earnings
1936	Minneapolis Manufacturer	$0.554
	Eastern Manufacturer	0.752
1944	Minneapolis Manufacturer	0.926
	Eastern Manufacturer	0.996

VOL. II, pp. 216 and 217

In these instances, the Minnesota manufacturer had a labor cost in 1936 that was 36% less than his Eastern competitor but this advantage as represented in labor cost alone had shrunk to 7.5% in 1944. Presumably this trend represents a tendency toward standardization of labor costs throughout the country.

Living costs and living and climatic conditions, together with recreational opportunities within the State in close proximity to manufacturing areas create an environment for labor that is of a distinctly superior order. To an appreciable extent these factors are of material value to the Minnesota working man. Yet, undoubtedly, the element of increased labor cost, added to the other cost handicaps to manufacturing in the State, can serve only to augment those forces which are tending to drive manufacturing from the State. This operates to the economic injury not only of the State as a whole but of labor in particular.

MANAGEMENT

VOL. II, p. 198

It may be assumed, and no evidence has been discovered to the contrary, that management of manufacturing in the State of Minnesota is of a high order. Nevertheless, to encourage the continuous service in Minnesota of men of high caliber receiving commensurate compensation, either their compensation must offset the comparatively high rate of income tax within the State, or they will be influenced to move to states affording equal opportunity with like compensation and a reduced or negligible burden of local income taxation. This matter is discussed further in the Tax section of this Report. It has a distinct

effect upon the ability of manufacturing to retain personnel of required caliber essential to successful leadership and direction of industrial plants, and whether or not such men are to be continued in or attracted to the State.

PRODUCTS

The products of Minnesota manufacturing, being largely the result of processing the raw materials furnished by agriculture and forestry, fall into the "pure " and "advanced" competitive types. The following table indicates that 42.05% of Minnesota's manufacturing is of the "pure" type. It is further shown that 50.78% of the manufactured products of Minnesota fall into the "advanced" competitive grouping. Although no breakdown is given for the industries classed as being in "advanced" competition, it is deemed essential to state that in classifying these industries, the large majority were found on the border line between "pure" and "advanced" competition. In most cases the industry was placed in the higher or "advanced" competitive grouping when there was any possibility that it was the proper classification.

VOL. II, pp. 177 and 179

VOL. II, pp. 184 to 179

It is characteristic of products entering these types of competition that the value added by manufacture is low. Any disadvantage presented to the manufacturers of this class of product are magnified inversely as the percentage of value added by manufacture decreases.

VOL. II, p. 185

Competitive Type	Number of Industry Classifications	Value Added by Mfg. in Minn. (1937)	Pro rated on 100% Basis
"Pure"	23	33.00	42.05
"Advanced"	20	39.85	50.78
"Imperfect"	2	5.63	7.17
Total	45	78.48%	100.00%

VOL. II, p. 184

In this tabulation the competitive position of manufacturing in the State is approximately presented. Conditions indicate that 93% of the industries are dependent upon net results of local freight rates, labor costs, fuel costs, and tax burdens to maintain their sales volumes.

VOL. II, p. 185

MARKETS

The markets for Minnesota manufactured products are principally restricted by two factors, namely, competitive class and geographical location. The survey of manufacturers when tabulated according to market divides the manufacturing industry approximately as follows:

VOL. II, p. 199

Market	Percentage of Manufacturers
National	45
Northwest	30
Local	25
	100%

VOL. II, p. 184

As has been previously stated, 93% of the products of Minnesota manufacturers fall into "pure" and "advanced" competitive groups with a small margin of profit. It, therefore, follows that the markets for these articles are restricted to an area in which transportation charges will not entirely consume the normally small margin of profit.

VOL. II, pp. 203 and 204

Many of the manufacturers whose product falls within the "pure" and "advanced" competitive groupings and who have a national market are considering moving out of the State. This is indicated in the following tabulation derived from the results of a sampling survey:

	No. Mfrs. Interviewed	Mfrs. Considering Moving		Employees of Groups Considering Moving	
		Number	%	No.	% of All Mfg.
Processing materials available in Northwest	30	9	30	11,580	13
Processing materials not available in Northwest	25	14	56	11,425	13
Totals	55	23	41%	23,005	26%

It is highly desirable that Minnesota recognizes the ability of manufacturers whose products are in "imperfect" competition to overcome, in large measure, the natural disadvantages presented by location within the State, and, therefore, to encourage the establishment of this type of industry within the State.

INCOME

VOL. II, p. 175

The large proportion of the products of manufacturers of Minnesota that fall in the "pure" and "advanced" competitive classes, with their corresponding

low value added by manufacture, requires that large volumes of bulk material be handled. The relative position of the three competitive types of manufacturing with reference to "Value Added by Manufacturing" is tabulated as representing present conditions in Minnesota:

PERCENTAGE OF ALL MANUFACTURING

Competitive Type	Value Added by Manufacture	Total Value of Product	Ratio of "Value Added" to "Value of Product"
"Pure"	42.05	62.29	0.675
"Advanced"	50.78	34.69	1.464
"Imperfect"	7.17	3.02	2.374
	100.00%	100.00%	

VOL. II, p. 185

It, therefore, follows that in the creation of wealth in Minnesota by the manufacturing process much larger volumes must be handled than in states where the percentage of total manufacture is higher in the "imperfect" competition classification. Furthermore, this comparison shows the greater opportunity afforded income as the result of any progress which may be made toward building up production of goods classified as in "advanced" or "imperfect" fields of competition.

VOL. II, p. 175

At the same time, the Minnesota manufacturer is definitely handicapped in the field of competition by the cost of overcoming the greater distances that lie between his plant and his market. If he is even to hope for success in competition, he must hold all expenses to a minimum in order to retain an income that will insure stability and provide for any possibility of expansion within the State.

OTHER EXPENSES

All costs of manufactured products must be held at a level to permit competition with industries in other states. Some of the other expenses are included in the tabulation of results from interviews with manufacturers. This survey shows the importance of these expenses although they are generally a small percentage of the cost of goods sold.

VOL. II, pp. 193 to 197

All manufacturers are affected by adverse freight rates unless they sell only in the local market. The printing group is the one outstanding case of having no complaints to make about freight rates largely because their products are shipped by express. All other groups complain in proportion to their class of competition or location of the sources of raw materials.

VOL. II, pp. 198 to 200

TAXES

VOL. II, p. 196

A survey of manufacturers revealed that the volume of complaints about State taxes was approximately the same as the volume relating to freight rates.

Comments on specific taxes as a disadvantage to the business are tabulated as follows:

VOL. II, p. 198

Type of Tax	Reported as Disadvantage to Business	
	No.	% Interviews
Income Tax		
Company	44	47%
Individual	38	41
Personal Property Tax	24	26
Real Estate Tax	5	5
Monies and Credits Tax	9	10
General (All Taxes)	36	39

VOL. II, pp. 200 and 201

The taxes paid by industry in the State have become a progressively increasing element in the cost of manufactured articles and progressive management indicates that it must be alert to the possibility of reducing the cost of its product by moving its plant to an area in which taxes are more favorable.

SUMMARY

Manufacturers in the State of Minnesota are faced with disadvantages which must be diminished sufficiently to warrant maintaining their plants in Minnesota, or they will be forced to move to locations which will better enable them to meet competition at least on even terms.

The success of industry is being adversely affected by an extraordinarily broad range of conditions whose character can spell success or failure. For instance, within the State corporate ownership is penalized by taxation as compared with other forms of business. The range of raw materials is exceptionally limited. The previous advantage of manufacturing in labor costs is disappearing. The stability of market opportunities is being threatened by the apparent inability or lack of opportunity of the manufacturer to raise the standard of his product as to the class occupied in the field of competition. The disadvantageous geographical location of the State, reflected in cost of transportation together with the character of taxation tend further to restrict the opportunity of the manufacturer within the State and, to that extent, will serve to repel rather than to attract new industry.

Continuance of the downward trend in manufacturing definitely threatens to transfer the burden of taxation to other forms of industrial activity within the State and to limit the opportunity of those of its citizens who traditionally followed the migratory trend from rural to urban industrial communities. The absorption of the migration by the manufacturing industries within the state is definitely desirable.

F. Agriculture

ECONOMIC POSITION

In a previous portion of the Report great stress has been laid upon the necessity of reestablishing the manufacturing industry in the State of Minnesota, suggesting the idea of a general cooperation to accomplish this desired objective.

In the following pages with respect to agriculture, it appears that the best interest of agriculture will be served not only by developing a closer inter-relation with manufacturing but by definitely contributing to its reestablishment in the State. Before discussing agricultural economics within the State this statement is made in order to explain certain unusual characteristics of the approach made to that subject in this Report.

In the Foreword of this Report it was stated that a foundation pattern has been selected which is common to the economy of all industries studied and even to the over-all economy of the State itself. Accordingly, agriculture has been treated as an industry. Its economic pattern incorporates ownership, investment, a producing plant involving the use of labor, a product sold to a market, and the measure of its accomplishment is indicated in terms of return upon the investment.

It is recognized that return upon the investment is not the only criterion for measuring farm accomplishment, because that neglects to take into account the personal labor, other than the planning, of the farmer and his family, and the fact that they get a considerable part of their living directly from the farm, without its being accounted for. But return on investment, nevertheless, is a most important standard of reference which has become increasingly important as the wealth on farms has increased, not only in the form of land but of buildings, animals, farm machinery of all kinds, and equipment. Return upon investment has been developed for whatever value it may have in revealing a trend over the years, rather than for the purpose of comparison with other states in which variations in the amount of hired labor on farms and other factors would invalidate a comparison.

An analytical evaluation of the State's greatest industry, both in terms of its relationship to other industries within the State and of its opportunities beyond the State's borders, is no simple problem. From certain angles the interdependence between the economic interests of agriculture and those of other industries might be given primary consideration. Yet, from another point of view, the opportunities furnished by agriculture's national market might definitely be con-

sidered to have a paramount bearing on any program or procedure that affects the State's policy toward its farming industry.

As this Report is primarily concerned with the economic interest of the State of Minnesota as a whole, the objective of this study has been, if possible, to point to those trends which best indicate the ultimate needs of the State and its people as a whole, rather than to deal with those which are primarily concerned with the interest of any particular group or industry.

To give agriculture its proper place as an outstanding component of the State's over-all economy, it is essential to view it in conjunction with other industries, and not apart from them as if it were concerned solely with its own opportunities and its own future, regardless of the welfare of the State as a whole. As to the long term future, agriculture might conceivably become the sole basis of the State's economy.

Farm Ownership and Operation

Generally speaking, owner operation of farms in Minnesota since 1880 has followed the downward trend that has characterized the North Central States, among which Minnesota occupies about an average position in respect to owner operation. The history of agriculture within the State shows that about 91% of the 92,000 farms in existence in 1880 were owner operated. As of 1940, 67% of the 197,000 farms were so operated. This latter percentage represents a slight increase over a mid-depression figure of 66% for 1935. The national average for 1940 was reported as about 61%. Vol. II, p. 221

Whether the reversal of the trend carries with it any promise for the future is problematical. The influence of the inflationary effects of the war and other factors such as possible subsidizing inject an element of uncertainty that makes forecasting highly speculative.

Tenant operation increased from 9.1% in 1880 to 33.6% in 1935. In 1940 there was a slight decrease in the percentage of tenant operation to 32.3%. In In 1940 the national average was 38.7% and in that year Minnesota had a smaller ratio of tenant operators to total operators than all of the North Central States except Michigan, Wisconsin, Ohio and Indiana. Corporate ownership and operation, presumably by management, might be assumed to comprise the balance unaccounted for in the above figures on owner and tenant operation. Vol. II, p. 222

The long term trend in operation by managers has been downward. It rose from 0.7% in 1900 to 0.9% in 1920 and has been generally declining since then to 0.3% in 1940. This trend has been paralleled to a degree in all of the North Central States. The national average was 0.6% in 1940. Ownership of farms by corporate businesses or agencies was 8.69% of the total farm units Vol. II, p. 222

operated in 1940 and it is presumed that these were to a large extent operated by managers.

VOL. II, p. 237

The farm population in Minnesota increased by 9.8% from 833,131 in 1910 to 914,609 in 1940 while the State's number of farms increased 26.4%. However, as a percentage of the State's total population, the farm population dropped from 40.1% in 1910 to 32.8% in 1940. The non-farm population, including rural and urban, increased by 55.1% from 1,242,577 in 1910 to 1,877,691 in 1940. These trends indicate a declining proportion of the State's total population on the farms.

VOL. II, p. 237

As the farm and rural birthrates greatly exceed the urban birthrate, it is apparent that the surplus increase of population on the farms has either been absorbed by urban centers or has left the State. Thus a problem of absorption of "excess" rural population is created with the solution placed at the door of urban communities, their industries and their commerce.

It is of interest to note, that as of 1940, 43% of Minnesota's farms "operated by all owners" were free of mortgage.*

The economic problem created by the constant migration cityward of an increasing number of well educated young men and women serves to emphasize the necessity for the State to provide employment for them. That employment can only be provided by a constantly increasing opportunity for them in manufacturing plants and the related public service industries, including commerce.

This phase of the State's economy offers to agriculture an incentive for developing a closer dependence upon and interest in the industry of manufacturing, in addition to the interest of creating a market outlet for agriculture's raw materials.

FARM INVESTMENT

The elements used in calculating the so-called "value of farm property" in the United States Census include values of land, buildings, implements, machinery and livestock. At some time such value might have been fairly representative of investment, but actually it does not represent investment nor is it probably intended to do so.

Based on Census values the following trends have been observed since 1910:

VOL. II, p. 223

The average value per farm in Minnesota, including land and buildings, increased from $46 per acre in 1910 to a boom price of $109 per acre in 1920. Since then the trend has been downward to $44 per acre in 1940.

*Sixteenth Census of the United States, 1940 Agriculture, Vol. III, Chap. IV. Table 18.

Comparing Minnesota's average value per farm per acre, including land and buildings, with the average value in the other North Central States, Minnesota occupied about an average position among them between 1910 and 1940. However, comparing 1910 with 1940, Minnesota's average value per acre for land and buildings has decreased closer to the 1910 value than any of these states except Michigan. VOL. II, p. 224

The trend in the total value of the land and buildings on Minnesota farms has ranged from $1,262,441,426 in 1910 upward to a value of $3,301,-168,325 in 1920, and downward to $1,443,021,200 in 1940. VOL. II, p. 224

The trend in the total value of farm implements and machinery on Minnesota farms has generally been upward from $52,329,000 in 1910 to $193,-444,000 in 1940. VOL. II, p. 226

The trend in the total value of livestock on the farms of Minnesota has been generally upward from $161,641,000 in 1910 to $229,034,000 in 1940. VOL. II, p. 226

There is little recorded data to indicate the extent of farm investment. In a publication of The Brookings Institution, "America's Capacity to Produce," Mr. Edwin S. Nourse, has characterized as capital investment in the farm "plant" the sum of values given to buildings, machinery and livestock. Land values were not included.

Assuming that the Census reported "values" for buildings, machinery and livestock were at some time reasonably representative of something approaching investment, and without attempting to correct these values by recognizing the increment of "residence," this Report has added "land value" in an effort to determine investment trends through the years. For consideration as representing investment and for the purpose of determining trends, this "land value," as used, is not that shown in Census figures following 1910, but has been arbitrarily established upon a reference basis of the 1910 data, with additions from year to year, reflecting the expansion of the total farm area for the State. The resulting figures have been corrected for changes in the purchasing power of the dollar, with the year 1910 taken as having an index of 100. VOL. II, p. 227

In the case of buildings, implements and machinery and livestock, it has been assumed that these more nearly represent investment in terms of the purchasing power of the dollar as of the date reported. It is to be borne in mind that these figures have been developed not to determine the absolute investment values but the trend in values.

VOL. II, p. 228

"REAL VALUES" OF FARM INVESTMENT
(BEFORE CORRECTION FOR DOLLAR PURCHASING POWER)

	1910	1920	1925	1930	1940
Total Farm Investment in State (millions of dollars)	$1,476	$ 3,474	$ 2,592	$ 2,541	$ 2,313
Average Investment per Farm	$9,456	$19,465	$13,771	$13,718	$11,720

(AFTER CORRECTION FOR DOLLAR PURCHASING POWER)

	1910	1920	1925	1930	1940
Total Farm Investment in State (millions of dollars)	$1,476	$1,590	$1,760	$ 2,060	$ 2,060
Average Investment per Farm	$9,456	$8,900	$9,370	$11,150	$10,460

This seems to be a reasonable series of figures evidencing a trend free from wide variations, and understandable. In respect to the value of a farmer's investment measured in terms of the purchasing power of the dollar, it refutes the impression that he is now worse off than he was in 1920, when, in terms of legal tender dollars, the value of his farm was at a high peak. In terms of purchasing power dollars, the value of his investment in 1920 was $8,900, whereas in 1940 it is $10,460. The figures underlying the trend here shown have every indication of being valid, although the only test of their validity in the long run is probably the opinion of men of long experience as practical farmers.

TRENDS IN NUMBER AND SIZE OF FARMS

VOL. II, p. 230

United States Census figures show that between 1910 and 1940 the number of farms in the State increased over 26% and the total acreage by 18%. It happened that 1910 was the peak year (Census) as to the average size farm (177.3 acres). It is apparent that in the intervening years the additions were largely in small farms, although an upturn in average size was reported between 1935 and 1940. In these years averages were reported approximating 161.4 acres and 165.2 acres respectively.

VOL. II, p. 236

The average size of farms varies according to the part of the State in which they are located and according to the type of farming conducted. These averages vary from 14 acres for poultry farms, 24 acres for truck farms, 92 acres for dairy farms, 342 acres for animal specialty farms, to 368 acres for cash grain farms in the Red River Valley area.

For the purposes of this Report, if a downward trend in size of certain types of farms were to reflect increasing impoverishment with attendant inefficiencies and if an upward trend were to reflect the reverse, it would be of distinct importance for a careful investigation to be made as to the actualities of the situation.

However, it is the opinion of this Report, as indicated by trends developed below, that, generally speaking, the situation in respect to the size of farms is sound and the trends favorable.

Products of Agriculture

This Report is more intimately concerned with the results of what has been accomplished during past years, measured in terms of present over-all trends, than with the shifts in agricultural practice that have taken place, even if these have served materially to alter practice within the industry in recent years, as compared to the past.

However, the production of wheat and its related milling was one outstanding characteristic of past practice which closely identified the interests of agriculture with the over-all economy of the State. A series of happenings, plus trends in agricultural economy and practice, has led to a gradual dissolution of the intimate connection between agriculture and manufacturing as represented by milling. It would be desirable to restore this close relation, although in a different form.

Ample reference has been made in this Report to the premier position once occupied by the State in the growing of wheat and its interdependence with manufacturing in the form of milling. The economic relationship was natural. However, in 1940 wheat had come to occupy only 9.8% of the area devoted to the production of the principal crops and consequently the trend in milling in the State has been and, presumably, will continue post-war, to be rapidly downward if the supply of wheat for milling and other factors of an economic and impelling character, encourage the relocation of the State's flour mills elsewhere.

Vol. II, p. 238

Between 1910 and 1940 the increase in value of those crops whose production trends were upward, consisting principally of corn, oats, barley, rye, potatoes and flax, totaled $109,160,000. Certain other crops consisting principally of wheat and hay were in what might be termed a declining economy, showing a decrease in values of $44,030,000. (Derived: Tables F-16, F-17.)

Vol. II, pp. 238 and 239

In the same period, livestock in the "increasing" category increased $148,600,000 in values. Horses declined $36,200,000 in value. The net increase in value of livestock from 1910 to 1940 was $112,400,000. (Derived: Tables F-19, F-20.)

Vol. II, pp. 243 and 244

During the 1910-1914 prewar period (4,617,000 tons average annual sales) there was no appreciable change in the average total tons of the principal agricultural products sold by the farmers of Minnesota as compared with the average

total tons sold during the 1935-1939 prewar period (4,597,000 tons average annual sales).*

Calculated at 1935-1939 prices, the average value per ton of sales increased from $42.12 per ton during the 1910-1914 prewar period to $67.69 per ton during the 1935-1939 period. Apparently, this upward trend in ton values was due to the character of the change in farm production toward products with relatively higher value per ton. "The farmers of the State have increasingly grown crops to feed livestock with a product resulting which has a higher per ton value."*

In all of the foregoing there has been indicated distinct progress in "the value added by agriculture," paralleling in some ways the economically desirable criterion of "value added in manufacturing." Furthermore, development of the processing of dairy products, most of which is off the farm and constitutes an element of manufacturing within the State, has enhanced the competitive status of such farm products and increased the interdependence of the two forms of industry.

Employment

Vol. II, p. 250

The ratio of workers in agriculture to the total of those gainfully employed in the State has varied but slightly between 1910 and 1940 — (33.2% in 1910; 32.2% in 1920; 30.6% in 1930; 31.1% in 1940). This relatively stable condition indicates that the State's capacity for farm employment is probably reached and that additional mechanization on the farms may lead to an excess of workers in the agricultural class.

Vol. II, p. 249

The ratio of family labor to hired labor (about 7 to 1) in Minnesota is much higher than the national ratio which has averaged about 4 to 1 for over forty years. In Minnesota the family farm laborers work nearly two hours per day more than the hired farm laborers.

Vol. II, p. 252

Market for Agricultural Products

Affecting the economy of agriculture in the State, the market situation can be considered from three aspects in evaluating the related trends. These include: (1) State or local consumption, (2) State process or manufacturing industry consumption, and, (3) out of State consumption for any purpose.

Vol. II, p. 254

Studies of the first two criteria show that sales of agricultural products within the State have progressively decreased as a percentage of total sales from about 50% in 1910 to about 33% in 1939-1940, and sales outside of the State are presumed to have increased from one-half in 1910 to two-thirds in 1939-1940.

*Farm Business Notes, University Farm, St. Paul, June 21, 1944.

The more the interest of the Minnesota farmer in the out-of-the State market expands, the more completely will he be subject to or at least affected by national competition.

It may be presumed that out-of-the-State sales furnish him an essential outlet and that their increasing rate is evidence of either an increasing belief in the value of that market, or, actual decline of the market within the State or an increasing uncertainty concerning it.

As applied to the out-of-State market in the field of "pure" competition, in which the producer can have no advantage over his competitor with respect to the form of his product, Minnesota's farmers are handicapped by the geographical location of the State.

Accordingly, it is evident that, as the national economy tends to drift into a buyer's market, the Minnesota farmer certainly will feel the effect of declining income earlier than the average. If this decline affects two-thirds of his gross income, because that is the proportion of his income derived from without the State, his financial injury will be the more severe.

To present another side of the picture, if the farmer were delivering his products to the Minnesota manufacturer or processor on an increasing, rather than on a declining scale, or if his product could be transformed into some form of manufactured product, salable in the field of "advanced" or even "imperfect" competition, it might then be said that the Minnesota farmer would less speedily feel the effect of a declining national economy.

Accordingly, if these assumptions are sound, it would seem to be to his interest to grow or produce the kind of product best fitted for use as a raw material in manufacturing and that such manufacturing should be near the point of production, i. e., in the State of Minnesota. In that regard, the farmer has a great stake in the progress and development of manufacturing in the State of Minnesota.

Summarizing the market situation, whatever may be the effect of the out-of-State market on the Minnesota farmer, there should be a distinct opportunity for him to stabilize his market opportunities by encouraging the development of such manufacturing within his State to which he can deliver his products for use as raw materials. It is thoroughly appreciated that material progress has been made in this direction in the development of processing and manufacturing plants whose raw materials are cattle, hogs, sheep and dairy products which leave the farm and the State as canned goods, cheese, butter or butter fat. In addition, there seem to be rising possibilities in the value of flax as raw material. Such products as soybeans, however, seem to have shown little progress in Minnesota.

VOL. II, p. 241

What the possibilities are, only research in marketing and manufacturing

can determine. In such research lies a field of distinct need and business opportunity. But it will not be fruitful if the interest of Minnesota agriculture is confined economically to the field of agriculture at a time when there is a diminishing trend as to mining, an uncertain future as to forest products, and a limited and declining field of opportunity in manufacturing.

Farm Income

For many years it has been accepted practice to evaluate the income of agriculture, not only within the State of Minnesota but nationally, in a variety of ways, typified by such characterizations as "cash income from farm," "market values of crops produced," or "income from crops." Likewise, expense has been reported in fairly specific terms.

However, net income is rarely reported, either for the farming industry as a whole within the State, or per farm. No records have been discovered within the brief period of this study purporting to reveal return on investment.

The foregoing analysis of agriculture as an industry within the State has followed the lines of an ordinary economic pattern, with full realization that no reliable knowledge can be obtained as to the farmer's economic position in comparison with the position of his co-industrialist in other lines of endeavor, unless, as has been done throughout this Report, farming also has been treated as an industry on the basis common to all. The real indication of the farmer's progress as measured against the progress of any other individual must have its common index in some understandable form. This Report has presented as estimates some ideas as to what this form should be, namely, the return on investment. It is recognized that this is only a relative indication and that in no way is it intended to represent actuality. Complete statistics that would supply a basis of actuality are non-existent.

However, before discussing return on investment, it would be of interest to observe the trends in reported annual gross cash income from farms in Minnesota, which income is derived from the bulk of sales of the principal products of agriculture, namely, crops, livestock, dairy products and other livestock products.

Vol. II, p. 258

The total annual gross cash income from the sale of the principal products of agriculture in Minnesota increased by $130,500,000 from a yearly average of $180,400,000 during the prewar years 1910 through 1914, to a yearly average of $310,900,000 during the prewar years 1935 through 1939.

Vol. II, p. 258

The annual gross cash income from the sale of Minnesota farm crops, including wheat, corn, barley, rye, oats, potatoes, flax and hay, declined by $22,700,000 from a yearly average of $85,700,000 during the prewar years 1910

through 1914, to a yearly average of $63,000,000 during the prewar years 1935 through 1939.

The annual gross cash income from the sale of Minnesota livestock, including cattle and calves, hogs, sheep and lambs, increased by $80,100,000 from a yearly average of $45,700,000 during the prewar years 1910 through 1914, to a yearly average of $125,800,000 during the prewar years 1935 through 1939. VOL. II, p. 258

The annual gross cash income from the sale of Minnesota dairy products, including butter-fat, milk and farm butter, increased by $48,200,000 from a yearly average of $37,900,000 from 1910 through 1914, to a yearly average of $86,100,000 from 1935 through 1939. VOL. II, p. 258

The annual gross cash income from the sale of other livestock products in Minnesota including chickens, eggs, turkeys and wool increased by $24,900,000 from a yearly average of $11,100,000 from 1910 through 1914, to a yearly average of $36,000,000 from 1935 through 1939. VOL. II, p. 258

The net income per farm in Minnesota in 1939, as estimated by the Bureau of Agricultural Economics of the United States Department of Agriculture on a parity basis with certain other States of the North Central group, supplies opportunity for comparisons:

VOL. II, p. 257

	Net Income per Farm 1939		Net Income per Farm 1939
Minnesota	$906	Kansas	$621
Iowa	1,305	Missouri	610
North Dakota	668	Wisconsin	741
South Dakota	684	Michigan	661
Nebraska	698		

Earlier in this section of the Report, data have been cited to show the trend in farm investment within the State. The reasonableness of such figures was supported upon their reduction to a common basis. The 1910 values were arbitrarily fixed at 100%—and the 1910 Census figures on total value of farm investment in the State ($1,476,411,000) were used. There has been a progressive increase so that in 1940 the figure of $2,060,000,000 represented the "real value" of total farm investment as estimated on this basis, compared with what would have been the 1940 money value of $2,312,881,000. In contrast with these quantities, the Census reports the present money value as $1,865,499,000. VOL. II, p. 228 VOL. II, p. 229

The theoretical farm net income in money value in the same period is reported as increasing from $698 per annum per farm in 1910 to $1,143 per annum per farm in 1940. Reduced to the 1910 index of $698 as 100%, the 1940 theoretical net income in purchasing power would have been equivalent VOL. II, p. 261

to $1,020. Based on these assumptions the return on investment per farm increased from 7.4% in 1910 to 9.8% in 1940.

In comparison with these figures if reported Census property values are used in conjunction with the reported money income figures, the record would show a trend in return from 7.4% in 1910 upward to 12.1% in 1940. It is the opinion of this Report that the latter figures are not representative and that the trend of return as developed by means of the use of correcting factors is more truly representative of conditions within the State.

The foregoing income trend has disregarded the effect of war conditions or of the conceivable results of inflationary trends now in evidence.

VOL. II, p. 261

The following table indicates the trend of return on "investment." All values should be used only for trend purposes and not considered as actual.

	1910	1920	1925	1930	1940
Average Investment per Farm	$9,456	$8,900	$9,370	$11,150	$10,460
Theoretical Farm Net Income in State (millions)	109.0	96.1	182.3	162.9	201.4
Theoretical Net Income per Farm	698	538	968	879	1,020
Return on Investment per Farm (%)	7.4	6.0	10.3	7.9	9.8

With respect to the effect of taxation upon income, there are some indications that systems of assessment have favored agriculture. If agriculture persists in maintaining that as an industry it should be favored in the amount of the tax burden it shares, when trends show a declining economy in other forms of industry, it is materially contributing to this declining trend. It is advancing the date when, in great part, it will be the sole industry of the State. If this should become a reality, distribution of the tax burden will be precluded and agriculture will be forced to assume the tax burden now carried by other industries. In the long run, inequalities in the distribution of taxation tend to be leveled out and a carefully ordered anticipation of such tendency would be highly desirable.

SUMMARY

Summarizing the situation as it concerns economic trends in agriculture within the State, the following observations have been made:

1. If the State continues to increase its exports of agricultural products in

"pure" competition, the economy of agriculture within the State will become more closely integrated with that of the Nation. In a rising market the result of such increasing export may broaden the market of the Minnesota farmer, but in any period of general business decline normal expectancy must presume a declining Minnesota agricultural economy not only coincidental with any national decline, but at a relatively higher rate because Minnesota products have the handicap in competition resulting from higher costs of transportation and delivery.

2. The change in the predominant type of agricultural products from wheat to livestock has been accompanied by an increase in value added through the work of farming, and also by an increase in the apparent rate of return on farm investment.

3. For many years agriculture has continued to contribute about 50% of the "raw materials" of manufacture and processing used in the State. However, as has been stated previously in this Report, the growth of manufacturing within the State has failed to keep pace with the average of the country as a whole. In any successful movement to reestablish the State's relative position in manufacturing, agriculture will unquestionably be called upon to contribute a larger percentage of the raw materials of manufacture than the 50% it has been contributing for many years.

4. Prior to the war, employment in manufacturing within the State was declining. If such decline is permitted to continue, relatively less opportunity for employment in the urban manufacturing areas will be afforded to the surplus population of rural areas.

5. With relative lessening of the tax carrying capacity of urban areas by reason of loss of manufacturing, rural areas will necessarily have to carry an increasingly greater portion of the tax burden.

IV ECONOMIC DEVELOPMENT IN GOVERNMENT

A. State and Local Revenue

Introduction

In several of the most important sections of this Report, the conclusion is irresistible that the welfare of Minnesota requires the restoration of manufacturing industry to the place it once occupied in the State's economy, and its further development as one of the most certain means of promoting the economic welfare of the State as a whole in balancing an economy which now is out of balance.

Need for the encouragement of manufacturing has been indicated in many relations. One of the most important of these is the extent to which a modification or shift of the tax burden can contribute to this end. Such a shift should not be for the purpose of lightening the burden on one group of taxpayers to put it upon another, but of lightening the burden upon one group of taxpayers so that the resulting growth of the base of taxation will bring about a lightening of the burden on all.

Method of Procedure

In approaching this problem it may be well to look first at the whole tax picture to see if the over-all burden of State and local taxes is too heavy relatively to other states. After that a review of the State taxes and the local taxes separately to see if there are any unusual characteristics that create competitive disadvantages for the citizens or industries of Minnesota should be made.

There is no scientifically accurate method of measuring and comparing the tax burden of the various states. However, there are approximate comparisons that are useful.

Methods of Comparison

The taxation in one state may be compared with the taxation in another and with the average of the 48 states, both in respect to the nature of the taxes and their amounts. Also, comparisons may be made with the average of neighboring competing states. These various comparisons may be made on the following bases. Vol. II, p. 266

1. *Relative Economic Ability to Pay*

This basis develops in a per capita form the total economic income of all

VOL. II, pp. 267 and 268

Ex. IV-A-1

industries, businesses and persons in Minnesota, and compares it with the per capita figure for the United States as a whole. The results of this comparison show that the relative economic ability to pay of Minnesota is 2% greater than the average of the United States as a whole.

2. *Relative Revenue Produced by Taxation*

VOL. II, p. 269
Ex. IV-A-2

This basis develops per capita the revenue produced in Minnesota by combined state and local taxation, and compares it with the corresponding figure for the United States as a whole. The results of this comparison show that the relative burden of taxation in Minnesota is 4% greater than the average of the United States as a whole.

3. *Combined Index — Relative Ability to Pay In Relation to Revenue Produced*

VOL. II, p. 269
Ex. IV-A-2

With 2% greater relative economic ability to pay and 4% greater relative burden of State and local taxation borne, it follows that the per capita weight of taxation in Minnesota is 2% greater than the average of the whole of the United States.

4. *State Taxes Compared According to their Nature. "Average Tax Structure" — a Measuring Device*

VOL. II, pp. 269, 270 and 271

If throughout the United States certain state taxes which represent 95.22% of all state taxes collected, are broken down as to their type (taxes representing less than 2½% being omitted for simplicity) a tax structure is obtained which, in respect to the yield from each type of tax, serves as a useful norm with which to compare other states.

In the "average tax structure" each type of tax is represented by the percentage it contributes to the whole. The "average tax structure" might be regarded as the taxes in a hypothetical state in which the yield of each type is the average of the 48 states. On account of its character, it should not be used in comparing the amount of total taxation in one state with another. The "average tax structure" as compared to Minnesota's tax structure for the year 1941 is given below.

Ex. IV-A-3

Type of Tax	1941 Average Tax Structure	Minnesota Use of Structure	Difference
Gasoline	25.69%	20.22%	— 5.47%
Sales	15.65	—	—15.65
Motor Vehicle	12.39	12.94	+ .55
Net Income	11.86	18.31	+ 6.45
Alcoholic Beverage	7.36	6.23	— .13
Property	5.72	15.09	+ 9.37
Utility	4.34	9.76	+ 5.42
Inheritance	3.46	1.11	— 2.35
Tobacco	3.03	.26	— 2.77
Franchise	2.99	—	— 2.99
Insurance Company	2.53	2.50	— .03
Total Percentage for Eleven Taxes	95.22%	86.42%	

It will be seen that whereas in the United States as a whole 15.65% of state taxes collected arise from a sales tax, Minnesota derives no revenue from this type of tax. It is also evident that, in respect to state income taxes in which the "average tax structure" shows collection of 11.86%, Minnesota shows a collection of 18.31%; and in respect to property taxes, where the "average tax structure" shows 5.72%, Minnesota shows 15.09%. Minnesota imposes a severance tax which is not represented in the "average tax structure" because of its minor importance (yielding only 1.6%). In Minnesota, however, it yields 11.86% of the total State taxes.

In respect to the gasoline, inheritance, tobacco and franchise taxes in which Minnesota collects considerably less than the "average tax structure", these taxes are about offset by its collection from the severance tax not represented in the "average tax structure".

5. *Local Taxes Collected — Minnesota Local Taxes Compared with United States Average Local Taxes*

VOL. II, p. 271
EX. IV-A-2

For the year 1941 Minnesota collected local taxes amounting to $42.64 per capita at a time when the average for the United States was $39.89. As demonstrated earlier in this section, the relative ability to pay of a citizen of Minnesota is 2% greater than the relative ability to pay of the average citizen of the rest of the United States. If there be taken into account this extra ability to pay, the burden carried by the citizen of Minnesota in local taxes, instead of being expressed by the ratio of 42.64 to 39.89, would be more correctly expressed by the ratio of 42.64 to 40.69, the latter figure being obtained by increasing the United States average by 2%. After adjusting for the Minnesota citizen's greater ability to pay, the figures show that he is still paying above the average in local taxes alone in the ratio of 42.64 to 40.69.

6. *Discussion of Taxes Imposed*

The Property Tax and the Income Tax have been found to be imposing a greater burden on the citizens of Minnesota than would the "average tax structure." It is, therefore, necessary further to investigate these two taxes together with certain other taxes which according to interviews with various industrialists are said to be imposing excess burdens on industry.

a. Ad Valorem Property Tax

(1) Classification of Property

VOL. II, p. 272

According to Minnesota laws, property is assessed at varying percentages of its "full and true" value, depending upon the classification of the property. There are four major classifications, some of which are sub-divided into minor classifications. The assessment rates vary according to type of property from 50% of "full and true" value to 10% of "full and true" value.

This in effect means that when two types of property of the same "full and true" value are assessed, one in the 10% classification and one in the 50% classification, the latter is carrying five times as much tax burden as the former.

None of Minnesota's competitor states discriminate in such a manner by law, although it is well known that assessment values vary greatly and uncertainly between types of property in all the states.

(2) Assessment

The basis for the ad valorem property tax is the assessment value of the property. The assessments can be no sounder than assured by the skill and intelligence of the men elected as assessors. In Minnesota there are nearly 3,000

VOL. II, p. 272

of them. Each has his own method of arriving at a valuation. These valuations, coming from so many different sources, are not and cannot be uniform, although uniformity in valuation would mean a more even distribution of the tax burden.

This is true particularly as the assessment value, as distinguished from the assessment classification, is the uncertain and varying factor in the ad valorem system. It is the relationship of each piece of property to the remainder of the property in the taxing district that determines the proportion of the tax burden that that piece of property will bear. Valuations that reflect true relative value among all properties are more important from a tax standpoint than accuracy of assessment.

The assessors are not full time employees, and usually can perform their duties in a few weeks. Their rate of pay is very low and, therefore, does not attract the best qualified men.

(3) Mill Rates

In Minnesota, the various mill rates by which the taxes are levied are determined by as many as 10,409 (Book of the States, Page 94) different units of local government. Therefore, it is possible to have a very wide diversity among them. There is a wide variation in average mill rates between the counties. There are further large differences between the townships and school districts within the counties. In 1942 the average mill rate of the various counties ranged from 49.90 to 203.85 mills. These different mill rates tend to add further to a disproportionate distribution of the tax burden.

VOL. II, pp. 272 and 273

EX. IV-A-13

(4) Limitations

There are limitations of the tax levies imposed on local governments which tend to restrict variation. To restrict the levies of the local units effectively, it is necessary to impose both a per capita and a mill rate limitation. There are no mill rate limitations on Home Rule Charter cities unless a mill rate limitation is specified in their charter. As indicative of possibilities, this lack of limitation can, in the near future, lead to excessive levies in some of the iron range cities.

VOL. II, p. 273

(5) Burden

With the exception of iron mining, visits to various industries disclosed few complaints against the ad valorem Real Property taxes, but there were numerous complaints against the ad valorem Personal Property Tax. The assessment being made as of May 1st finds many industries with large stocks of raw materials and merchandise on hand, and therefore subject to tax. In the classification system in use, there is no distinction between materials in manufacture, stocks of merchandise and raw materials as differentiated from machinery and fixtures forming part of plant. Without distinction, these all are included in Class 3 and assessed at 33-1/3% of Full and True Value. A distinction has been recognized in agriculture and Class 3a covers agricultural products in hands of producer which are assessed at only 10% of Full and True Value, Class 3d covers agricultural machinery and is assessed at 20% of Full

VOL. II, p. 273

and True Value. In agriculture, the ratio of machinery to products, in respect to the tax they bear, is two to one.

b. Income Tax

General

VOL. II, p. 277

The Income Tax in Minnesota applies against both the individual and the corporation. These must be discussed separately as their effects are different. They are computed on different bases.

In 1943, 29 states and the District of Columbia levied Personal Income Taxes. Thirty-one states and the District of Columbia levy a Corporate Income Tax. Connecticut, Pennsylvania and Tennessee levy a Corporate Income, but not Personal Income Tax. Delaware levies a Personal Income Tax, but no Corporate Income Tax. From Income Taxes in 1941, Minnesota derived 18.31% of its revenue as compared to the revenue from the "average structure" of 11.86%.

In the exhibits, it will be noted that Minnesota spreads the base for its Income Tax over a wider range of incomes than do most of the other states. This feature brings the tax collected in Minnesota nearer the average as the amount of net income increases.

VOL. II, p. 277
Ex. IV-A-15

(1) Personal Income Tax

It has been shown that at the $3,000 net income level, Minnesota is exceeded only by North and South Carolina in the Income Tax it collects. Eleven states and the District of Columbia collect no tax at this level, although they have Personal Income Tax laws. Minnesota collects almost 7 times as much per individual return as the lowest state and a little less than 3 times as much as the average of the 30 states levying Personal Income Taxes.

VOL. II, p. 277
Ex. IV-A-16

At the $5,000 net income level, Minnesota is exceeded, per return, only by North Carolina. At this level, Minnesota collects over 11 times as much as the lowest tax collected by states having Personal Income Tax laws and a little less than 2½ times the average for these 30 states.

VOL. II, p. 277
Ex. IV-A-17

At the $10,000 level, Minnesota is exceeded, per return, only by North Carolina and Oklahoma. Minnesota collects almost six times as much as the lowest state and a little less than twice the average for the 30 states.

VOL. II, p. 278
Ex. IV-A-18

At the $25,000 net income level, Minnesota is exceeded in amount collected per return by five states: North and South Carolina, North Dakota, Wisconsin, and Oklahoma. Minnesota collects over five times as much as the lowest state and a little more than 1½ times the average for the 30 states.

The above comparisons show that Minnesota places a much greater burden on personal incomes than do most of the other states.

(2) Corporate Income Tax

The Corporate Income Tax is a little higher in Minnesota than the average for the 32 states levying Corporate Income Taxes. This is true for a company conducting all of its business in Minnesota. However, a corporation whose sales are made largely outside of the State, but whose property and payroll are largely within the State, is in a much more favorable position compared with the other states. This is because of the ratio applied to apportionment of income to Minnesota in which sales are weighted at 70% and property and payroll at 15% each. VOL. II, p. 278 Ex. IV-A-19 Ex. IV-A-20

The dividends paid to a parent company in Minnesota by a subsidiary company located out of the State are taxable by the State as income to the parent company. This is true even though Minnesota contributed nothing to these earnings and in earning these profits the subsidiary companies did no business in Minnesota.

All profits of corporations located in Minnesota upon which dividends are paid to Minnesota stockholders are subject to double taxation, — once from the corporation and again from the individual. Should the stockholder live in a state which has no Personal Income Tax, he will realize more profit from the same dividend than if he lives in Minnesota.

(3) Revenue — Personal and Corporate

The Income Tax has been producing progressively more revenue. In its first effective year, 1933, revenue produced amounted to slightly over $2,000,000. This increased to $6,500,000 in 1937. At that time the law was rewritten to produce more revenue. Collections have increased greatly since then, reaching $23,500,000 in 1943. In its present form, the Income Tax cannot be expected to continue to produce such large returns. The war years have shown constantly increasing economic income but the provision which has been made by Minnesota that the Federal Income Tax paid may be deducted from State personal income will cause the State revenue derived from this tax to decrease as soon as income becomes more or less stabilized. All this is provided that there is no decrease in Federal Income Tax rates. In any consideration of revenue to be derived from the State Income Tax the years 1942 and 1943 must be considered as abnormal years and the possibility is remote that revenue will continue at the level of these years. VOL. II, p. 278

c. Money and Credits Tax

The Money and Credits Tax has been suspended for the years 1943 and 1944. In 1945, it will again become effective unless the legislature take action to suspend it further. VOL. II, p. 275

Since the time of the Civil War, the problem of taxing Money and Credits,

which, under Minnesota's law, are regarded as intangibles, has been a major problem throughout the United States. Money and Credit are easily hidden and, therefore, very hard to assess. By passage of the Money and Credits Tax Law, Minnesota attempted to ease the difficulties of assessment by reducing the rate. This was done to encourage citizens to declare their Money and Credits for assessment. Because of this reduction of rate, the revenue derived from this tax has increased and many citizens have declared their Money and Credits for assessment.

A survey made by Roy G. Blakey, in 1932, indicated that at that time much less than 50% of taxable Money and Credits were being taxed. In 1940, the Minnesota Institute of Governmental Research, conducted a further study of the Money and Credits Tax Law. In only 9 counties, the assessment of Money and Credits exceeded the bank deposits. In 78 counties, the Money and Credits assessment was less than the single item of bank deposits.

Inquiries by the Minnesota Institute of Governmental Research, addressed to states where a Property Tax is levied against so-called intangibles, indicated that evasion of the tax was so extensive that Money and Credits contributed very little to the total Property Tax revenue.

d. Auxiliary Forest Tax

VOL. II, pp. 273 and 274

Forest taxation presents a problem similar to that of Mining taxation. Many trees require a growing period of 75 to 100 years. During this period no revenue accrues to the owner. Only at the "harvest" of the timber does he realize any return therefrom. In the past, timber was considered as a natural resource existent at the time setllers came into possession of the land. It was not necessary for them to finance the timber and land throughout the growing period. This favorable condition largely has ceased to exist owing to the extensive "mining" of the forests. Timber should now be considered as a crop with an extended growing period. The value of timber at maturity probably will be less than the accumulated taxes paid during the long growing period if timber land continues to be taxed principally on the same basis as agricultural land. The major portion of agricultural crops never appear on the tax rolls because they are harvested within the year.

The realization of the inability of trees as a crop to stand the present tax burden is evidenced by the introduction of the principle of taxation employed in the Auxiliary Forest Law, previously discussed under "Forestry". However, this law presents certain administrative problems.

These administrative problems largely lie in the difficulty in having a woodlot or forest tract declared an auxiliary forest. A very large part of the woodlands in Minnesota still are taxed under the general ad valorem system.

This is largely because of the lack of knowledge by the taxpayers of the existence of the Auxiliary Forest Law and the complexity of the administrative procedures required to have a tract declared an auxiliary forest.

B. State and Local Expenditures

In the following pages reference frequently is made to records between 1937 and 1943 because those for prior years are non-existent. The trends developed in the prewar years between 1937 and 1940 are rather brief to be considered indicative. The trends between 1940 and 1943 definitely reflect war conditions. Consequently both the peace time and war time trends have been reported; in certain respects the conclusions drawn cannot but be affected by the brevity of these periods.

VOL. II, p. 283

1. NET GOVERNMENT EXPENDITURES, STATE AND MINOR CIVIL DIVISIONS, 1939 THROUGH 1943

Records of net government expenditures of the State of Minnesota and all the minor civil divisions containing the annual totals after elimination of duplications caused by inter-division transfers have not been compiled for years prior to the fiscal year 1937-1938. The data for this year are not as complete as for succeeding years.

Generally speaking, published state expenditure statistics are incomplete in that they do not contain the expenditures of minor civil divisions,—counties, towns, municipalities, school and other districts,—supported by local taxes or otherwise.

EX. IV-A-11

Over a period of several years trends in total expenditures follow the trends of state and local taxes. In Minnesota these taxes decreased from about $161,000,000 in 1930 to $136,000,000 in 1933 and then increased to $178,000,000 in 1940.

VOL. II, p. 284

a. Total Net Expenditures for Current Expenses, Capital Outlays and Interest

After eliminating duplications, the total net expenditures for current expenses, capital outlays and interest made by all the civil divisions such as the State, counties, towns, municipalities and school districts in Minnesota were approximately $220,500,000 in 1939, increased to $224,000,000 in 1940, and then decreased to $198,000,000 in 1943.

The year named is the year in which the fiscal period of the State and most school districts end. The other divisions either end with the preceding calendar year or with dates near its end.

EX. IV-B-1

b. Current Annual Operating Expenses and Capital Outlays by Principal Functions, 1941 through 1943

The three largest groups of expenditures in Minnesota are education,

highways and public welfare (charities); other important functions include general control and public safety. Combined expenditures for hospitals, conservation of health, and sanitation and waste removal have exceeded $15,000,000 in some years. Annual interest payments amounted to about $10,000,000.

(1) Education

VOL. II, p. 285

Education has cost the people of Minnesota about $63,000,000 annually during the years, 1941-1943. Of these amounts the school districts spent about $49,000,000. The State spent about $13,000,000, of which about $11,000,000 was on account of the University of Minnesota and $1,500,000 for the Teachers Colleges. Offsetting revenues of the State from tuition and services rendered to students in these institutions have been identified to the extent of about $5,000,000 yearly.

A comparison with neighboring states of expenditures for public elementary and secondary schools per capita of total population and enrollment in 1936, 1938 and 1940 indicates that Minnesota has been spending for its public schools more, per capita, than the four states, South Dakota, North Dakota, Indiana and Iowa. It usually exceeded Wisconsin, exceeded Michigan to a lesser degree and generally was less than Ohio and Illinois. When measured by per capita income payments to individuals in 1940, Minnesota exceeded three of the same four states, South Dakota, North Dakota and Iowa, but was less than the others.

VOL. II, p. 291

The organization through which the public school system in Minnesota is administered contains a comparatively large number of school districts. In 1940 there were 7,687 of such districts but these had been reduced to 7,674 in the school year 1941-1942. Progress has been made in simplifying the public school system by consolidating school districts, but persons familiar with the situation cite examples which indicate that more opportunities for improvement still exist.

VOL. II, pp. 291 and 297

The Constitution of Minnesota states that it is the duty of the legislature to establish a general and uniform system of public schools. State financial aid to the school districts has amounted to about $17,000,000 yearly. The determination of a fair basis for, and an equitable distribution of, these aids has presented a perennial but changing problem. The situation has been summed up in reports to the authorities " * * * Approximately 37 kinds of aids are distributed. * * * As a result, at the present time, Minnesota has a complicated school aid system which needs simplifying and refining."

VOL. II, p. 292

These educational problems seem to be due partly to the way in which the system has been developed. The sources and allocation of funds seem not to have kept pace with changes in economic conditions and to have become unsuited to present needs.

VOL. II, p. 294

(2) Highways

Highway operation, maintenance and capital outlay during 1941 and 1942 cost about as much as the school districts spent for education,— $47,500,000 in 1941 and $49,000,000 in 1942. Of these sums the State spent about half,— $23,000,000 — and the counties a quarter,— $13,000,000. In 1943 the total was reduced to about $35,500,000. The State spent about $12,000,000 and the counties about $11,000,000. Of the remainder, which during the three years ranged from $11,000,000 to $13,000,000, the cities and villages spent about two-thirds and the towns one-third. State aid (largely from the gasoline tax) ranged from about $8,700,000 in 1941 to $6,100,000 in 1943. Federal grants ranged from about $3,000,000 to $6,500,000.

EX. IV-B-2

During the five years, 1939 through 1943, per capita expenditures for capital outlays for highways in Minnesota were about $7.10 in 1939, increased each year until 1942 to about $9.90, but in 1943 were sharply reduced to about $3.50. During the same period per capita current highway operating and maintenance expenditures started at about $9.08, decreased to $8.32 in 1940 and to $7.13 in 1941. In 1942, they increased to $8.40 and in 1943 reached $9.80.

In 1940 there were 2,734 highway and street administrative agencies having direct or supervisory responsibilities for construction and maintenance of roads and streets. These agencies included 5 Federal, 5 State, 87 county, 1,884 township and 753 municipal. The important systems of highways include Federal-aid system, trunk highways, State-aid roads, county-aid and county roads, and township roads. About 11,000 miles of the total of 120,000 miles of highways, streets and alleys were parts of more than one system. Whole systems may be under the jurisdiction of two or more agencies.

Generally speaking, the highways of Minnesota are excellent and adequate for necessary uses. In mileage of improved roads Minnesota is about on a par with comparable states. War conditions have caused a reduction in capital outlays. Maintenance expenditures in 1943 had increased more than 31% over 1941, but the quality of maintenance deteriorated.

VOL. II, p. 295

(3) Public Welfare

Total net expenditures for "public welfare" or "charities" decreased from $39,000,000 in 1941 to less than $33,000,000 in 1943. The counties spent over three-quarters of these amounts, such sums decreasing from about $30,200,000 in 1941 to $27,200,000 in 1943. State-aid amounted to about two-thirds of these amounts ($19,000,000 to $20,000,000), of which the State, in turn, received more than one-half from the Federal government. The State spent about $2,500,000 yearly, the cities and villages $3,000,000 to about $6,000,000, and the towns from $150,000 to $250,000. The largest single item was Old Age Assistance.

Laws relating to care of and assistance to the indigent, unemployed, and physically and mentally handicapped are administered by the Department of Social Security, composed of the Division of Social Welfare, the Division of Employment and Security, and the Division of Public Institutions.

The Divisions have divided the State into varying numbers of districts depending on their activities and the number and locations of the local units they supervise or through which they function. Various bureaus in the Division of Social Welfare supervise the county welfare boards in their administration of assistance laws.

(4) General Government

General government costs, ranging from about $12,764,000 to $13,884,000 or $4.50 to $5.00 per capita, approximately, have weighed most heavily on the counties which have carried nearly one-half of them. VOL. II, p. 296

2. NUMBER OF LOCAL GOVERNMENT UNITS VOL. II, p. 296

In total number of units of government, Minnesota, with 10,409 in 1941, was exceeded only by Illinois (15,629), Kansas (11,206) and Missouri (10,992). The following table summarizes the comparison with maximum, minimum and average of the neighboring states, Iowa, Wisconsin, Indiana, Michigan, Ohio, North and South Dakota and Illinois and with the average of the 48 states in the Union.

NUMBER AND TYPES OF LOCAL GOVERNMENTAL UNITS IN 1941 VOL. II, p. 297

	Total Units of Government	Counties	Incorporated Places	Townships	School Districts	Other Special Districts
Minnesota	10,409	87	751	1,883	7,687	1
Illinois (Max.)	15,629	102	1,138	1,436	12,129	824
Indiana (Min.)	3,032	92	536	1,016	1,183	205
Average of 8 states other than Minnesota	7,164	82	639	1,311	4,297	205
Average of 48 states in the Union	3,437	63	339	396	2,465	175

These states in the North Central Region have considerably more complicated political organizations of local units of government than the average for the whole country. Minnesota has more local units than all but one of these states, and the total number in Minnesota is about three times that of the average of the 48 states. Comparative records of the costs of the activities of all of these administrative units in all of these states do not exist.

VOL. II, p. 297
Ex. IV-B-2

3. PER CAPITA GOVERNMENT EXPENDITURES, STATE AND MINOR CIVIL DIVISIONS, 1939 THROUGH 1943

During the years 1939 through 1943 the per capita cost of net current expenses of operating the State and local governmental activities ranged from about $63.00 in 1941 to $66.20 in 1943, the high point in the series. Capital outlays ranged from a low of $5.15 in 1943 to a high of $16.19 in 1940. When these sums are added to current expenses the combined costs ranged from $71.34 in 1943 to $79.59 in 1940. These minimum and maximum amounts were increased by the addition of interest payments to $74.77 in 1943 and $83.42 in 1940. This per capita cost of such government operations, — $83.42, — was nearly 16% of the per capita income of $526.

VOL. II, p. 298

4. PER CAPITA STATE COST PAYMENTS, MINNESOTA COMPARED WITH OTHER STATES, 1937 THROUGH 1943

In this category are the payments administered by the State government and grants made by the State to aid minor civil divisions, including the expenditures for operation of the functional departments of the State government, for capital outlays and for interest. Expenditures made by local units are not included except as grants to such subdivisions by the State government are embraced as State expenditures.

Ex. IV-B-3

Minnesota has been compared with the neighboring states, North and South Dakota, Kansas, Iowa, Indiana, Wisconsin and Michigan; and with the average for the 48 states in the Union. The period covers the years 1937 through 1942. Although these per capita expenditures in the case of Minnesota were uniformly higher than those of the other states, excepting Michigan, they progressively decreased during 1939, 1940 and 1941. They were only slightly higher in 1942 than they were in 1938. During the six years from 1937 through 1942, Minnesota's State government cost payments did not exceed in any year an average of $45 for each inhabitant. This compares with a maximum average for the 48 states of $38 during the same period. Year by year, Minnesota exceeded the average for the country by about $12 for 1937 and 1938; by $7 for 1939; by $5 for 1940; by $3 for 1941 and by $6 for 1942. During these years the average for the United States has increased progressively from $27 to $38.

Ex. IV-B-4

A comparison on a per capita basis with all the states in the Union shows that such sparsely populated states as Nevada, Wyoming, Arizona, New Mexico, Idaho (in 1941) and Utah exceeded Minnesota in state government costs as have Colorado, Washington and California. All of the last three have had certain expenditures considerably higher than those corresponding in Minnesota, some owing to special circumstances and some owing to the fact that these states are

less fully developed. New York and Ohio have been slightly higher in 1941 and Delaware has been consistently so throughout the period. The record of Michigan has been irregular and higher in three of the years.

Minnesota, with per capita income payments to individuals of $526 in 1940 spent $40.32 for these functionalized state government cost payments compared with $40.17 spent by New York, whose per capita income was $814, and compared with $37.12 spent by Ohio whose per capita income was $644. These two latter states are highly industrialized and their population density in 1940 was 281.2 and 168.0 respectively, compared with 34.9 in Minnesota. Because of lower population density and comparatively larger expenditures, Minnesota in that year spent 7.7% of its per capita income payments to individuals compared with 4.9% for New York and 5.8% for Ohio.

5. State Cost Payments Made Directly, Compared with Those Diverted to Minor Civil Divisions — Vol. II, p. 299

The states have various and varying policies in their distribution of functions and expenditures between the state as a unit and the minor civil divisions. In the same state, proportions expended for various functions may differ widely. Policy may change from year to year. Among the eight states used in a previous exhibit and the total for the 48 states a comparison in amounts and in percentages has been made of the distribution of expenditures among such important activities as schools, highways and public welfare. The period is only one year, 1942. Only a few examples are cited:

STATE COST PAYMENTS COMPARED WITH STATE-AID PAYMENTS — Ex. IV-B-5

	Percent			
	Direct Operation		State-Aid Paid	
	Minnesota	48 States	Minnesota	48 States
Schools	31	24	69	76
Highways	48	42	52	58
Public Welfare	11	56	89	44

There is wide variation among the states.

6. Per Capita Cost Payments for Principal Government Functions — Vol. II, p. 299

Exhibit IV-B-6 compares per capita cost payments made by the eight states and the average of the 48 states allocated among the principal functions. This comparison is incomplete in that it includes only the direct expenditures by the State government and its contribution to the local civil divisions. Here again, differences in policies followed by the various states invalidate all except general

comparisons. For example, Iowa had comparatively small expenditures for schools. Included elsewhere are grants by the State to minor units for various unspecified purposes. Some of these grants have been made to compensate for exemption of homesteads from local taxes. Such payments probably were used by the local units not only for schools but for all the purposes that would have been supported by taxes on homesteads. The average per capita sums expended by the 48 states for general government control and for employment security were larger than corresponding figures for Minnesota.

VOL. II, p. 300

7. DEBT AND DEBT SERVICE

Since 1928 the Constitution of Minnesota has provided ample safeguards against excessive and, to a large degree, against unwise incurrence of debt by the State itself. Numerous legislative acts limit the powers of the minor units to incur debt and prescribe standards to which they shall conform. The policy of limiting debt to a relatively small proportion of total assessed valuation has tended to keep such valuations high in those civil units in which the outstanding debt is at or near the maximum allowed.

In the Report of the Highway Planning Survey, considerable space is devoted to highway debt. It appears that there have been certain towns that have defaulted on debts incurred many years ago. There also is mention of the use of "Warrant Financing" by counties and local units and certain minor irregularities connected with the practice.

On July 1, 1942 the gross debt burden on the civil units of Minnesota amounted to nearly $115 per capita. Debts have scheduled maturities, although no comprehensive and complete record has been discovered. Highway bonds and State obligations apparently will become due in constantly decreasing amounts through 1953 with one or two series not maturing until 1977.

During the years 1940 through 1943 yearly retirements exceeded annual new issues of State bonds for "Charities." The gross amounts outstanding decreased from about $23,354,000 to $13,832,000. Continuing retirements are scheduled through 1953.

Summary

1. Comparison with the average of expenditures throughout the nation and with certain selected states indicates that the general level of expenditures in Minnesota is higher than is warranted by the economic status of the State.

2. The totals of expenditures and their apportionment among the various units of government depend on and reflect general policies of the people of Minnesota in determining the scope of government activities and allocating functions among the various agencies.

3. In Minnesota the total number of local governing units is about three times the average for the country as a whole.

4. The Constitution of Minnesota requires a general and uniform system of public schools. The State has granted substantial sums as aid to the school districts, allocating them by a method that has been characterized as complicated and unsuited to present needs.

5. Minnesota's highway system appears to be adequate for necessary uses.

6. The highway administrative structure in Minnesota is composed of a large number of agencies which have supervisory or joint responsibilities over several highway systems, some of which overlap.

7. Expenditures for public charities reflect a policy of localizing responsibility for such activities, limiting them reasonably and retiring debt incurred for such purposes.

V. SUMMARY OF FINDINGS

Analysis of the data gathered for this Report shows that in the first half of its statehood Minnesota, by energetic liquidation of its patrimony, realized or created wealth relatively more rapidly than neighboring states. In the second half, Minnesota not only failed to maintain its position, but relatively lost ground, and, as this Report is submitted, is faced with an actually declining economy.

In dealing with components of the total economy of the whole State this Report may be regarded as emphasizing a condition that at present is characteristic of the State, i. e., each industry is primarily concerned with its own immediate welfare. If this condition continues, it can only serve to bring about a result which is rather clearly indicated in the Report, namely, the exhaustion of the State's iron ore, the depletion of its forests and the discouragement of manufacturing. This will leave in Minnesota the economy of an almost wholly agricultural State competing in the national market, subject to the fluctuations of income and other vicissitudes that characterize national market competition.

It is realized that, in contrast with this prospective single economy, the road to a multiple economy designed to develop many interests is hard, in that it involves coordinated planning for long term continuance of the State's iron ore in a competitive field, the most advantageous use and regeneration of its forests, and the integration of the products of both forest and agriculture to supply the raw materials that are essential to the prosperity of manufacturing and processing.

It is true that, to attain this desired end, it has been indicated that the State's governmental agencies have a burden of responsibility not only through self-examination as to rates of expenditure, but also as to the manner in which the tax load is distributed among the people.

The authors of this Report are in no position to lay down complete programs of remedial action. These can best be determined by close cooperation between the State's agencies of government and the organizations that may now represent, or that should be organized to represent, private industry, agriculture, labor and education.

In another portion of the Report, the authors will submit their recommendations as to remedial measures. These recommendations are offered as suggestions for the consideration of those permanently concerned with the State's problem.