MICHIGAN AND A STUDY OF ITS FOREIGN TRADE: 1951-53

Thesis for the Degree of Ph. D.

MICHIGAN STATE UNIVERSITY

Bernard Francis Sliger

1955

THESIS

This is to certify that the

thesis entitled

Michigan and A Study of Its Foreign Trade

presented by

Bernard F. Sliger

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Economics

Harry G. Brauer
Major professor

Date June 21, 1955

O-169

MICHIGAN AND A STUDY OF ITS FOREIGN TRADE: 1951-53

By

Bernard Francis Sliger

AN ABSTRACT OF A THESIS

Submitted to the School of Graduate Studies of Michigan
State University of Agriculture and Applied Science
in partial fulfillment of the requirements
for the degree of
DOCTOR OF PHILOSOPHY

Department of Economics

1955

Approved Harry G. Brainard

Bernard Francis Sliger

AN ABSTRACT

The main purpose of this thesis is to examine the foreign trade of Michigan, and to find out how that commerce, as revealed by its commodity make-up, its increase or decrease in magnitude, its import origin, the destination of its exports, and the effects of governmental policies, influences the economy of the state. The period for study of the thesis was the years 1951, 1952, and 1953.

On a regional or state basis there are no statistics available which give precise data covering exports emanating exclusively from and imports going to and remaining in a given political subdivision of the United States. The statistics of the foreign trade of the United States are, however, broken down by customs districts. Therefore, as a result of the method that the Commerce Department has of keeping statistics on its foreign trade, all reference made to Michigan's foreign trade should be understood to mean the foreign trade of the Michigan customs district.

Michigan's foreign trade can be described with a few statements. First, the foreign trade of the state is immense, approximating a billion dollars a year for exports and six hundred million dollars a year for imports. Second, Canada dominates the trade, export-wise as well as import-wise. Third, Michigan's exports consist mainly of Michigan produced and processed goods, namely, automotive equipment and other machinery. And, fourth, the state's imports, with the exception of agricultural machinery, are largely articles in a raw or semiprocessed form, such as wood and paper, and metals and metal semimanufactures.

As for the effect of foreign trade on the state's economy several conclusions are in order. Looking at exports we see that a considerable portion of Michigan's mineral products is exported. In regard to agriculture, it can be stated that exports play a significant role. Exports in the agricultural grouping were valued at approximately $50.0 million per year during the three year period. Manufacturing is the most important economic activity in Michigan. The value of the exported items from Michigan's manufacturing industries approximated $700.0 million per year for the 1951-52-53 period. In addition, the major industries of the state, and also those which pay the highest wages, namely, motor vehicles and equipment, machinery, fabricated metal products, and chemicals and related products, are also the industries which have the greatest amount of export.

Nearly every important industry in Michigan is dependent upon imports for some part of its operations. Quantitatively, the value of Michigan's imports during the 1951-53 period averaged over $600.0 million a year. Imports, as well as exports, however, become more significant when their qualitative, as well as quantitative aspects, are considered. Michigan's leading items of import were newsprint, chemical wood pulp, agricultural implements, nickel, aluminum, iron and steel semimanufactures, copper, and whiskey.

Thus, Michigan is an active, or even vigorous, participant in foreign trade. Nevertheless, in spite of the magnitude of the trade there seems to be ample opportunity for improvement.

Among the obstacles to the state's foreign trade are the following:

excessive tariff rates on items which Michigan imports; antiquated customs rules and regulations; quota restrictions of various types; and the delay of the construction of the St. Lawrence Seaway. Upon examining these impediments it is concluded that for Michigan to have a freer trade it is necessary that we have: (1) a gradual lowering of tariffs on products imported; (2) that we have an elimination of quota restrictions; (3) that we have some sweeping revisions in customs procedure; and (4) that the Seaway be extended to encompass the qualified ports of Michigan.

What would be the likely result for the state if the above policy recommendations were followed? First, Michigan would realize some of the benefits of an increase in world output made possible by a more efficient use of the factors of production. A second benefit to the state would be an increased stability in the demand for some of its exports.

Thus we see that although the state is already enjoying a large foreign trade the interests of Michigan could be served best by the expansion and encouragement of an even larger trade.

ACKNOWLEDGMENTS

Undoubtedly, the most pleasurable part of thesis writing comes when one pens the acknowledgments. It goes without saying, that whatever merit this volume may possess a large part of it is due to the generous assistance of teachers, colleagues, and friends.

I would like to express first thanks to Dr. Harry G. Brainard for his interest, supervision, and helpful suggestions in the preparation of this study. In addition, however, he was more than a supervisor. As a teacher, adviser, and friend, his encouragement has enabled me to complete the assigned task. Most assuredly, whatever is worthwhile in this thesis is due in large part to him.

A permanent debt of gratitude is owed Professors Denzel C. Cline, Harold Fields, Charles C. Killingsworth, William H. Knowles, Anthony Y. C. Koo, Madison Kuhn, Richard W. Lindholm, Elmer B. Lyon, Leonard H. Hall, Jacob Schmookler, Melvin J. Segal, Victor E. Smith, and Leland E. Traywick for encouragement and constant stimulation in my search for knowledge.

The courteous assistance rendered me by the many employees of the Detroit office of the Collector of Customs and the field office of the United States Department of Commerce at Detroit is also gratefully recorded here.

Thanks, too, are due David J. Luck and the Bureau of Business Research at Michigan State University who provided me with the necessary funds to process the Michigan import statistics on the University IBM machines. Thanks are due also to Miss Norma Taschner of the University

IBM department who supervised the IBM processing on Michigan's imports.

I am also happy to acknowledge the advice of Dr. K. M. Thompson at Louisiana State University who read and criticized portions of the manuscript.

Finally, to my wife who, not only typed the manuscript through all of its phases as well as suggesting many improvements of style, but who also showed a measure of patience unparalleled during the entire period I was engaged in research, I owe a debt far beyond telling.

Needless to say, I alone am responsible for the views expressed and any errors in the text.

TABLE OF CONTENTS

LIST OF TABLES

TABLE PAGE

TABLE PAGE

CHAPTER I

PURPOSE, METHODOLOGY AND SIGNIFICANCE OF STUDY

A. Statement of Purpose. There are many conflicting reports concerning the extent of Michigan's foreign commerce. In regard to the benefits or harmful effects of foreign trade, either actual or potential, the thoughts of Michiganders are divergent as well as vehement. In other words, without traversing too many steps in the state one can find a great divergence of opinion in regard both to the scope of Michigan's trade and to its significance. And, as might be expected, the problem becomes even more complex when the public policy aspects of the issue are encountered.

It was because of this diversity of opinion on the subject of Michigan's foreign trade, as well as the dearth of information on it, that the idea for this study was conceived. Thus, the main purpose of this thesis is to examine the foreign trade of Michigan, and to find out how that commerce, as revealed by its commodity make-up; its increase or decrease in magnitude; its import origin; the final destination of its exports; and the direct effects of governmental policies, influences the economy of the state.

For organizational purposes the thesis is divided into six chapters. Chapter one deals with the purpose, methodology, and significance of the study. In chapter two, Michigan's history, geography, topography and economy are surveyed. In chapters three, four, and five, the main body of the thesis, an attempt is made to measure the foreign trade of Michigan, in regard to its present size, growth or decline, commodity composition, and its foreign origin or foreign destination. The sixth chapter is an analysis of

the significance of foreign trade to the state's economy as well as a brief analysis of the policies of the government relevant to Michigan's trade with some suggestions for the improvement of these policies.

Though one is cognizant that the United States economy is not an economy of states, one is also aware that by a more intensive study of the individual states or regions a better understanding can be obtained of the whole economic structure of the country.

B. Statistical Sources: Availability, Interpretations, and Limitations. The statistics for chapter two of this study, though widely scattered, were precise and readily available in published form. The Census of Manufactures proved invaluable, as did the Survey of Current Business, the Statistical Abstract of the United States, the Minerals Yearbook, and the United States Agricultural Statistics.

In addition, there was little or no problem in defining the area for study in regard to the history, geography, topography, and economy of Michigan.

For chapters three, four, and five, the task of obtaining adequate data was considerably more difficult. Comprehensive and summary statistical data on the foreign trade of the United States are published regularly. A number of United States government agencies issue such data regularly. The Foreign Trade Division of the Bureau of the Census, and the International Economic Analysis Division of the Office of International Trade (Bureau of Foreign and Domestic Commerce), both bureaus of the Department of Commerce, are the most important as sources of these data. These two agencies issue monthly publications with quarterly and annual cumulative supplements. In the case of

the Census Bureau publications, the data for a time were assembled and presented annually in an extremely comprehensive compilation known as Foreign Commerce and Navigation of the United States. The Bureau discontinued this service, however, in 1951, with the printing of Foreign Commerce and Navigation of the United States Calendar Year 1946. Thus it is apparent that Foreign Commerce and Navigation is only a source of "non-current" data.

On a regional or state basis there are no statistics available which give precise data covering exports emanating exclusively from and imports going to and remaining in a given political subdivision of the United States.[1] The statistics of the foreign trade of the United States are, however, broken down by customs districts. For statistical purposes the United States has been divided into forty-six customs districts, although these customs districts do not necessarily follow state lines. For example, the customs districts which are relevant to Texas are twenty-one, twenty-two, twenty-three, and twenty-four, but in addition to Texas two of these districts include parts of Louisiana and New Mexico. This makes the ascertainment of Texas' foreign commerce much more difficult than would be the case if it were either one customs district or composed of districts which included only Texas. Fortunately, however, Michigan is encompassed entirely by only one customs district, that being the thirty-eighth. Moreover, the thirty-eighth district includes only the state of Michigan.

---

[1]See Michigan and Foreign Trade, Department of State, Washington, D. C., 1951, p. 1. Hereafter cited as Department of State, Michigan and Foreign Trade. See also John M. Hunter and Donald A. Moore, Michigan and Foreign Trade, p. 7., Governmental Research Bureau, Michigan State College, East Lansing, Mich., 1953. Hereafter cited as J. Hunter and D. Moore, Michigan and Foreign Trade.

For regional, that is, customs district data, Foreign Commerce and Navigation, gives the volume and value for each Customs District by Commodity, and Customs District by Country of Destination or Origin; that is, a "two-way" breakdown. With this information it is possible to obtain the commodity composition, and, separately, the country composition of the trade of a given district. It is impossible to get a "three-way" breakdown of trade, that is, District by Country by Commodity, or District by Commodity by Country, from Foreign Commerce and Navigation. In other words, one is able to find out the total value of goods Michigan imported from and exported to any country, and, on the other hand, the quantity and value of commodities exported from and imported to Michigan, but it is not possible to derive Michigan's export or import of any particular commodity from a specific country.[2] The latter is a "three-way" breakdown.

For customs district data on a current basis, only limited information can be gained from the regular monthly publications. The total value and total volume of exports and imports of each customs district is all that is shown.[3] Thus it is apparent that there are no regularly published sources which give, on a current basis, commodity and country breakdowns of the foreign trade of customs districts. Such data can be derived, however, from unpublished machine tabulation sheets. The corresponding

---

[2]For example, it is possible to determine the amount of wood pulp Michigan imports, and also the state's total imports from Finland, but it is impossible to find, from Foreign Commerce and Navigation, the amount of wood pulp Michigan imports from Finland.

[3]See Summary Report FT 970, United States Foreign Trade, Bureau of the Census, Foreign Trade Division, Department of Commerce, Washington, D. C.

sheets which show data for exports and imports for districts for all means of transportation are Foreign Trade Report No. EM-563: United States Exports of Domestic and Foreign Merchandise District of Exportation by Country of Destination by Commodity, and Foreign Trade Report No. IM-154: United States Imports for Immediate Consumption, United States Customs District by Commodity by Country of Origin. These sheets are published on a monthly basis, separately by customs districts, and can be borrowed for personal use from the Department of Commerce field office of the customs district in question.

In regard to the unpublished machine tabulation sheets several points should be noted. The export sheets, analyzing them first, have in summation form only the total exports from Michigan to particular countries. Therefore, in order to find, for example, the value of exports of specific commodity classifications to a country, it has to be done by summing them up on a computing machine. This is also the case in obtaining export data on any other type of classification one might wish. On the other hand, as could be noted from the above titles of the unpublished machine tabulation sheets, the statistical alignment for the import sheets differs from that of the exports. Imports are given by District by Commodity by Country, whereas exports are aligned by District by Country by Commodity. The task of making "three-way" summary compilations is naturally complicated as a result of this "reversing" of alignment.

Customs facilities are maintained at various ports of entry within each district, and in each district one of the ports is designated as the headquarters port. In Michigan the designated port is Detroit. Other main

ports in the customs district are Port Huron, Sault Ste. Marie, Saginaw, Bay City, Escanaba, Marquette, Algonac, Muskegon, Grand Haven, Calcite, Detour, Mackinac Island, Manistee, South Haven, Port Inland, Munising, and Presque Isle.[4]

Therefore, as a result of the method that the Department of Commerce has of keeping statistics on foreign trade, all references made in this study to "the foreign trade" of Michigan, unless otherwise noted, should be understood to mean the foreign trade of the Michigan customs district.

C. Significance. The study, or at least the subject matter of the study, should be of interest to anyone who is interested in the economy of his state, whether he be producer, middleman, or consumer.

More specifically, however, the study should be of value to Michigan firms which are partially or wholly engaged in foreign trade at the present time. Likewise, it might prove beneficial to firms which are prepared to begin, contract or expand their foreign trade activities in response to measures which are crucial to planning operations.

It could also have usefulness to organizations, private and public, which are concerned with the advancement of all forms of business activity,

---

[4]In addition to these there are minor ports of entry located at Alpena, Bangor, Baraga, Bay Shore, Benton Harbor, Carrolton, Cheboygan, Clinton River (Mt. Clemens), Drummond Island, Ferrysburg, Filer City, Holland, Houghton, Ludington, Manistique, Marine City, Marysville, Monroe, Northport, Rockport, St. Clair, St. Ignace, and St. Joseph Harbor. See Schedule D-Code - Classification of the United States Customs Districts and Ports, p. 18., hereafter cited as Schedule-D. Schedule-D is included in Schedule B - Statistical Classification of Domestic and Foreign Commodities Exported from the United States, Jan. 1, 1952, edition, United States Department of Commerce, Bureau of the Census, U.S.G.P.O., Washington, D. C., 1951.

particularly including foreign trade. In this category could be listed such agencies or organizations as the Detroit Board of Commerce, the Detroit field office of the United States Department of Commerce, the seventh and ninth regional Federal Reserve Banks and their branches, the Chambers of Commerce, various Port authorities, the office of the Collector of Customs, the Michigan Economic Development Commission, and the St. Lawrence Waterway Commission.

The real value of the study, however, seems to be something more than the statements above. It is an attempt to obtain information which has heretofore been unobtainable; to bring sight for the first time to statistics which had been sightless; and to release them from their codefied closet. In the performing of this task the writer hopes he has added some new information to the regional economy of one of the nation's most important agricultural and industrial states.

CHAPTER II

A BRIEF OUTLINE OF MICHIGAN'S HISTORY, RESOURCES, PRODUCTS, AND ACTIVITIES

The purpose of this chapter, as stated in the introduction, is to discuss Michigan's history, geography, topography, and economy. By so doing it is hoped two things can be accomplished: first, that the reader will have a more lucid picture of Michigan and its entirety; and second, that he will be better able to understand the nature and significance of Michigan's foreign trade.

A. History of Michigan. Though Michigan was occupied at an early date by Indians, it was not until the early seventeenth century that the first white man set foot on its soil. The first white settlers of Michigan were the French, who came here largely interested in one of two things: either converting the Indians to Christianity, or acquiring pelts for the lucrative fur trade. As a result of these early developments by the French, what is now called Michigan was pretty much under French domination. In 1760-61, however, as a result of the French and Indian War the control of the area passed over to the English.[1] The English ostensibly lost control of the territory at the end of the Revolutionary War in 1781, but it was not until 1796 that all of the state was surrendered

---

[1] Detroit passed from the French to the English in 1760, but the rest remained in French hands until 1762.

by Great Britain.[2] In the meantime, 1787, this region had become a part of the Northwest Territory. In 1800-1802, the sub-territory of Indiana, of which the present area of Michigan was a part, was created, and out of this the sub-territory of Michigan was formed in 1805. From 1805 to 1818, the territory was pretty much a wilderness, with the main occupants still being Indians. In 1818, however, as a result of public land sales a good many pioneers were tempted to this remote settlement. A further inducement was offered in 1825 with the completion of the Erie Canal, which established water connection between the Great Lakes and the Hudson River.

By 1835, the population of the area was large enough to elect state officers and apply for admission to the union. In 1837, with over two hundred thousand people Michigan became the twenty-sixth state of the union.

Though the fur trade reigned supreme in Michigan until around 1825, by 1850 farming had supplanted it as Michigan's chief occupation. In 1855, with the opening of the canal at Sault Ste. Marie providing for cheap transportation, Michigan's mining industry came to the forefront. In the decades of the 1870's and 1880's it was the nation's leading lumber producer.

With the improvement and extension of rail and water transportation the frontier rapidly disappeared and manufacturing became the leading

---

[2]Technically, even 1796 was not the last that the Americans were to see of the British. In the War of 1812 General William Hull surrendered Detroit to the British, and in the same year they took over Mackinac. However, in 1813 as a result of Commodore Oliver H. Perry's victory on Lake Erie, control of all of Michigan, except the Mackinac area, went back to the United States. The Americans recaptured Mackinac in 1815, but still some British held out on Drummond Island until 1828. The troops on Drummond Island were the last British troops to leave the United States.

occupation. Starting from 1880 Michigan's population changed from predominantly rural to predominantly urban, with the change being accelerated by the increased importance of the automobile in the American way of life.

B. Boundaries, Climate, Topography and Physiography. Michigan consists of two peninsulas formed by the Great Lakes and separated by the Straits of Mackinac. The northern peninsula is approximately 300 miles from east to west and, except for the part bordering Wisconsin, is surrounded by Lake Superior on the north and Lake Michigan and Lake Huron on the south. The lower peninsula which measures about 350 miles from north to south and about 200 miles from east to west, is bordered on the west and north by Lake Michigan and on the north and east by Lake Huron, the St. Clair River, Lake St. Clair, the Detroit River, and Lake Erie. Ohio and Indiana form the southern boundary. Both peninsulas extend north and south for a distance of approximately 400 miles, and lie between the latitudes 41° 41' and 48° 18' N and longitudes 82° 7' and 90° 25' W.

The area of Michigan, exclusive of about 40,000 square miles of Great Lakes within its borders, is 58,216 square miles, of which 1,191 square miles are inland waters. It is the second largest state east of the Mississippi, the twenty-second largest in the United States, and its shore line, 1,624 miles, is the longest of any state.[3] In comparison with other

---

[3] Statistical Abstract of the United States 1941, United States Department of Commerce, United States Printing Office, 1942, Washington, D. C., p. 1. Also, see "Michigan", Encyclopedia Brittanica, Vol. 15, Encyclopedia Inc., Chicago, London and Toronto, 1952, p. 418. Hereafter cited as "Michigan", Encyclopedia Brittanica.

states it is larger than the total area of Massachusetts, New Hampshire, and Vermont, and also larger than the combined areas of Maine, Connecticut, Rhode Island and Delaware. To compare it with foreign countries it is about the size of the combined area of England and Wales, larger than Greece, and four times as large as Belgium.

In order to have any understanding of the economic structure of Michigan it is necessary to have a clear concept of its climate. Along with soils, forests, minerals, and waterways, climate must be considered as one of the most important physical conditions of the environment of the state.

It would seem to be a safe generalization to say that, among the states in the United States, Michigan is one of the more diversified in regard to climate. In general, the climate is somewhat similar to that of New York and New England, but more favorably modified by the Great Lakes, through their prevailing westerly winds.

In some areas the climate has some very unfavorable aspects, such as shortness of seasons and deep snows in the northern parts, but looking at the climate as a whole, it is quite moderate and conducive to the production of many different kinds of crops, in addition to being stimulating for its populous.

Michigan's overall mean annual temperature is 46° Fahrenheit, with July being invariably the warmest month and February the coldest. Different areas within the state, however, vary considerably from this 46° average. In Michigan's southern tier of counties the mean annual temperature is 48° Fahrenheit, while at Calumet, in the Upper Peninsula, it is 39° Fahrenheit.

This difference in mean overall temperature goes a long way in explaining the diversity and types of crops in Michigan.

The mean annual precipitation for the state is 30.45 inches, with better than 50 percent of this falling during the five growing months from May to October. This amount of precipitation is ample for the growth of vegetation and crops. As with the temperature, however, the different regions of the state vary as to precipitation. In some of the southern counties, for instance, precipitation averages forty inches a year, while other areas, such as the Keweenaw Bay area, portions of the Thumb, and the Saginaw Lowland, have less than twenty-four inches.

As for irregular phenomena, such as hail storms, tornadoes, sleet and thunderstorms, Michigan, though having some, is not bothered too much. As Bert Hudgins, Chairman of the Department of Geography at Wayne University, says, though the recitation of losses to be found in the newspapers seem numerous, such occurrences "are generally of a local nature, and in proportion to total population and property values are not great."[4]

The amount of sunshine a state has is also an important factor in the growth of vegetation and various other activities of a state. Michigan, however, on this score is a land of cloudiness, in the winter months averaging for the state as a whole only 30 percent of possible sunshine, and in summer, 40 percent. In fact, Michigan, as a whole, ranks with Western New York and Washington as the cloudiest sections in the United States.

---

[4]Bert Hudgins, Michigan: Geographic Background in the Development of the Commonwealth, 1948, p. 38. Hereafter cited as B. Hudgins, Michigan Geography.

To this fact, it should be added, though, that on the western coast of the Lower Peninsula the percentage of possible sunshine approximates 70 percent, the highest in the state. This factor plays a large role in making the western part of Michigan a fruit belt.

As one would imagine from what has already been said Michigan's growing season also varies greatly for different parts of the state. The longest growing season in the state occurs in the southwest corner of the state and approximates 180 days. Also, the western part of the state, bordering Lake Michigan has a long growing season averaging between 160 and 180 days a year. These are contrasted, however, with the upland of the western part of the Upper Peninsula and the high planes area around Crawford and Roscommon counties in the northern part of the Lower Peninsula, which average only from 80 to 100 days of growing season per year.

Thus, we can see that in no part of the state could such crops as cotton, sugar cane, bananas, and coffee be grown, while wheat, corn and other grains, potatoes, vegetables, fruits, and hay crops can be grown in nearly all parts.

Needless to say, the closeness of land to large bodies of water is an important factor in the climate of Michigan. Thus, any attempt to give a picture of Michigan's climate, without bringing into the scene the effect of the Great Lakes on it, would be totally impossible.

Lakes Michigan and Superior are large and deep and so located in regard to westerly winds that the air from their surface greatly influences the climate of Michigan. As a result of the fact that water warms slower in summer and cools slower in winter, Michigan is considerably warmer

in winter and cooler in summer than it would otherwise be. In addition, Michigan is located in the westerly wind belt of the northern hemisphere. These westerly winds blow, for the most part, from west to east and bear somewhat to the northeast, thus bringing about the typical weather changes in Michigan.

Topographically and physiographically, Michigan consists of three sections: Eastern Lower Michigan which comprises the eastern half of the Lower Peninsula; Western Lower Michigan, or the western half; and Upper Michigan, otherwise known as the Upper Peninsula.

Eastern Lower Michigan. The southern part of Eastern Lower Michigan is densely populated and contains numerous cities of considerable size. The northern portion is sparsely populated. In this section are two high areas of land, one in the southern part from one thousand to twelve hundred feet about sea level, and the other in the north which measures from twelve hundred to fourteen hundred feet above sea level. The largest part of the area drains into Lakes Huron, St. Clair, and Erie. The river valleys are mostly broad and flat with earthen riven beds. The southern part is fertile and well adapted to growing grains, grasses, and fruits; while the northern portion contains sizeable areas of sandy soil, originally covered with pine forest. Thus, the northern portion is not too satisfactory for farming.

Western Lower Michigan is suitable for agriculture; fruit growing being one of the main activities. There are numerous important industrial centers, with the southern part of the section being more thickly populated than the northern. Some of the latter area has a dearth of population. The elevation varies from a few feet in the south to more than a thousand feet

above sea level in some parts of the north. Drainage is almost entirely into Lake Michigan. The soil of the southern portion is mostly a dark clay loam, while in the north a large portion of the soil is sandy.

The Upper Peninsula has an area of 16,353 square miles. In terms of acreage it has 10.6 million acres or about one-half that of the area of the Lower Peninsula.[5] The entire area is rather sparsely populated. The highest altitude of the region lies in the western end which reaches a height of over 2,000 feet above sea level. The eastern part of the peninsula is generally less than 1,000 feet above sea level and less than 400 feet above the bordering lakes. The average elevation is about 250 feet above Lakes Superior and Michigan. The drainage is almost exclusively into those lakes, only small areas draining into Lake Huron. Originally, the whole of the peninsula was covered with rich pine forests, almost all of which have now been cut away. The cut-over land in the eastern end is largely swampy, and the black soil, when drained, is fertile. The middle areas surface is rolling and the soil is suited to general farming. Moving westward, the land is hilly and quite rocky. Iron and copper mining abound in this region. Still farther west the contour is more nearly level and there are areas of fertile agricultural ground.

C. Raw Materials of the State. The Michigan economy as it functions today has been molded by many influences. In the state's long and varied

---

[5] Michigan's Upper Peninsula, Ebasco Services Inc., Lansing, Michigan, June 1953, p. 83. This area and acreage includes the 134,000 acres of Isle Royale National Park.

history lies the explanation of how the economy reached its current position. Location, soil, climate and nature's endowment of mineral resources have all combined to influence the pattern of economic development. Having discussed location, soil, and climate in a previous section, it is now necessary to survey the raw materials of the area.

In our modern industrial society it is absolutely essential that a nation possess mineral resources to serve as a basis for technical development. If the United States is to maintain its role as a leader in the world's economy, it must have a continuous source of supply of these resources.

With this view in mind, then, what is Michigan's role in the supplying of resources? From early in its history, Michigan has been one of the leading mineral producing states of the nation.[6] As was pointed out earlier, as soon as the "Soo" locks were opened in 1855, Michigan's mining industry played a leading role in the development of the state, as well as supplying valuable materials to the United States and the rest of the world.

Michigan has rich and diverse natural resources and the boast has been made "that Michigan could exist as an isolated empire while her people enjoyed all the reasonable comforts of life."[7] Though this is an overstatement

---

[6]The possibility of lucrative mining in Michigan was early recognized as is represented by the fact that a thorough geological survey was ordered immediately after Michigan became a state in 1837. See Michigan, Oxford University Press, New York, 1941, p. 62. Hereafter cited as Michigan, Oxford University Press.

[7]Walter A. Terpenning, "Village and Open Country Communities", Michigan Historical Magazine, Vol. 16, Autumn Number, 1932, p. 385.

and in the light of this work highly undesirable, it nevertheless gives one a concept of the multiplicity of natural resources in the area.

Michigan's abundance of resources consists of ferrous and nonferrous metals as well as nonmetallic minerals. Due to the quantity of igneous and metamorphic rocks it has a great many minerals, such as iron and copper; associated with the large amounts of sedimentary rocks in the state are such minerals as petroleum and salt. The vast supply of nonmetallic minerals has allowed the state to play an important role in the production of salt, gypsum, bromine, calcium, chloride, iodine, and magnesium.

Looking at it in its entirety, Michigan produces more than thirty different mineral products, the most important being iron ore, copper, petroleum and natural gas, cement, salt, limestone, sand and gravel, and gypsum products. Others of less importance are, bromine, gold, clay products, calcium grindstones, chloride, graphite, lime, marl, potash, peat, quartz, silver, sand lime brick, and sandstone.[8]

Thus, one sees that Michigan is truly a mineral state, with the total value of copper and iron produced, up to 1948, approximating three billion dollars; while the total value of Michigan's mineral production by the same date had approximated six billion dollars.[9]

For selected years Michigan's mineral production has varied considerably, both in relation to the rank of mineral producing states in the union, and in actual values. As for the products or minerals, however,

---

[8]Ferris E. Lewis, My State and Its Story, Hillsdale, 1939, p. 207. Hereafter cited as F. E. Lewis, My State and Its Story.

[9]B. Hudgins, Michigan Geography, p. 47.

which have been predominant, they have remained pretty much the same, namely, iron ore, copper, cement, petroleum, and salt.

The highest rank Michigan has held among mineral producing states was sixth. It held this position in 1911, 1912, and 1913. During these years the total values for these products were, $65.3 million, $80.1 million, and $93.9 million. The lowest rank it has held was fourteenth in 1947, when, however, it had a total value of production of $170.6 million. The highest total value of mineral production the state has had was in 1951, when it ranked eleventh with a value of $257.9 million.[10]

With this general information on mineral resources our attention now turns to a brief study of individual items.

Iron Ore.[11] Michigan's output of iron ore in 1951 was more than 13.5 million tons valued at over $78.1 million dollars. This was an increase from 1939 when 11.0 million tons were produced valued at $37.0 million.[12] Michigan, among the states, has been second only to Minnesota in ore production. In quality Michigan's iron ore is second only to the famed Swedish resources.

---

[10]See Minerals Yearbook, Department of the Interior, Bureau of Mines, for respective years.

[11]For a more detailed account of Michigan's iron ore production, and for the history of the industry in the state, see, Norman Beasley, The Wolverine State, Garden City, New York, Doubleday, Doran and Co., Inc., 1936, pp. 30-32. See also Michigan, Oxford University Press, pp. 63-64; Bert Hudgins, Michigan Geography, pp. 49-50; and F. E. Lewis, My State and Its Story, p. 188.

[12]The 1939 statistics are taken from Brittanica Year Book 1942, p. 434; those for 1951 from The Americana Annual 1954, Americana Corporation, New York, 1954, p. 451. Hereafter cited Americana Annual: 1954.

Nearly all of Michigan's iron ore is located in three Upper Peninsula areas, Marquette, Gogebic and Menominee. In 1952, the iron ore reserves of these areas were estimated to be approximately 162 million tons.[13]

Petroleum.[14] Although petroleum is the most recently discovered of the state's natural resources, production of crude oil had by 1939 reached 23.5 million barrels, making Michigan second in production among states east of the Mississippi. This was Michigan's peak year of production. After 1939, production leveled off at around 15 million barrels a year, with a value which fluctuated between $40.0 and $50.0 million a year. In 1951, output of petroleum was 13.9 million barrels valued at $37.9 million.[15]

Along with the possibility of new discoveries both in virgin areas and deeper drillings, the proved oil reserves for Michigan in 1952 were estimated at 51.0 million barrels.[16]

---

[13]See Minerals Yearbook 1951, United States Department of the Interior, Bureau of Mines, U.S.G.P.O., Washington, D. C., 1954, p. 681. Hereafter cited as Minerals Yearbook: 1951.

[14]For a more detailed account of the petroleum industry in Michigan see Minerals in Michigan, 1940, p. 33. See also Michigan, Oxford University Press, p. 66; F. E. Lewis, My State and Its Story, p. 202; B. Hudgins, Michigan Geography, p. 54. And The Oil Producing Industry in Your State, the Independent Petroleum Association, Tulsa, Oklahoma, 1950, pp. 25-26. Hereafter cited as The Oil Producing Industry in Your State.

[15]Statistics for 1939 taken from Mineral Industries of Michigan, Department of Conservation, Geological Survey Division, Lansing, Mich., 1940, p. 37. Hereafter cited as Mineral Industries of Michigan. For 1940 to 1950, statistics taken from The Oil Producing Industry in Your State, pp. 25-26. And for 1951 data, see Statistical Abstract of the United States 1954, United States Department of Commerce, Bureau of the Census, U.S.G.P.O., Washington, D. C., p. 758. Hereafter cited as Statistical Abstract of the United States: 1954.

[16]Ibid.

Natural Gas. The natural gas industry is closely related to the oil industry. After a slow start due to the inability to capture much of the gas and the lack of pipe line facilities leading from the gas fields, the industry has, in the last few years, progressed rather rapidly. Presently, annual production is running around 12,000 million cubic feet per year with a value of nearly $2.0 million. In 1951, the proved resources of the state were 203,000 million cubic feet, thus, seeming to guarantee a future for the industry in the state.[17]

Salt.[18] Michigan is the leading salt producing state; and in 1951, its output was 5.1 million tons valued at $21.2 million.[19] Since 1915, the value of Michigan's salt production has never gone below $4.5 million and since 1940 has never dropped below the $10.0 million mark. At the present time it is fourth in value of mineral products in Michigan. Salt is found principally in the southeast quarter of Lower Michigan and is derived from brines obtained from deep wells.[20]

Copper.[21] Michigan's copper mines, located in the Keweenaw Peninsula

---

[17] The Oil Producing Industry in Your State, p. 26. See also Statistical Abstract of the United States: 1954, p. 756. And Minerals Yearbook: 1951, p. 868.

[18] For a more detailed account of the salt industry and its history, see F. E. Lewis, My State and Its Story, p. 199.

[19] The Americana Annual: 1954, p. 451. See also Minerals Yearbook: 1951, p. 1105.

[20] B. Hudgins, Michigan Geography, p. 52.

[21] For a more comprehensive treatment of the copper industry in Michigan see, William B. Gates, Jr., Michigan Copper and Boston Dollars, Harvard University Press, Cambridge, Mass., 1951. See also B. Hudgins, Michigan Geography, p. 47. Michigan, Oxford University Press, p. 63. And Mineral Industries of Michigan, p. 8.

in the Upper Peninsula, produced 49.3 million pounds of copper in 1951 valued at $12.1 million dollars.[22] Much of this copper is taken from very low levels with the result that favorable prices are necessary for profitable production.

At present, Calumet and Hecla Incorporated at Calumet is the state's major producer, accounting for about 90 percent of all the copper produced in Michigan. Total production of copper in the Upper Peninsula is now less than 4 percent of the United States industry total.[23]

Copper mines operating in the Upper Peninsula are marginal producers. Therefore, copper production in the state is dependent largely on the market price of copper or on government subsidies. Although the profitable reserves of copper ore are estimated to be over 3.5 million tons in the Upper Peninsula, this figure is subject to adjustment at any particular time according to the market and government price support situation.[24]

Coal.[25] Michigan's coal is found in the so-called Pennsylvanian formation which includes more than thirty counties, and ten thousand square miles in the south central part of Michigan's Lower Peninsula.

---

[22] Statistical Abstract of the United States: 1954, p. 767. See also The Americana Annual: 1954, p. 451.

[23] Michigan's Upper Peninsula, Ebasco Services Inc., Lansing, Mich., June 1953, p. 150.

[24] Ibid.

[25] A more detailed analysis of the industry may be found in Michigan, Oxford University Press, p. 64. See also F. E. Lewis, My State and Its Story, 1939, p. 1943, and Michigan's Mineral Products, 1940, p. 28.

For the most part Michigan's coal is of a generally poor quality and is used principally for industrial purposes; in 1951, about seven thousand tons were produced.[26]

Limestone. Michigan limestone deposits are extensive and of excellent purity. This purity makes the state's limestone adaptable for use as a blast furnace flux and for chemical purposes. The major areas containing the stone are in Alpena, Presque Isle, Cheboygan, Emmet, Charlevoix, Mackinac and Schoolcraft counties. Nearly all the limestone quarried from these areas is sold in the crushed state, although there are some amounts of slab stone being used for building purposes.

In regard to annual production of limestone, Michigan, for a good many years, ranked second only to Pennsylvania. In 1935, it had attained first rank in annual production among the states, but in 1936, it dropped to second; since then it has been out ranked by several others, namely, Illinois, New York and Ohio. Even though it has dropped in relative national importance its total output and value in 1951 exceeded its value and output in 1935. In 1935, it had an output of 8.2 tons and a value of $4.2 million, while in 1951 its production was 20.8 million tons valued at $17.4 million. It was the sixth ranking mineral product in Michigan in regard to value in 1950, following iron ore, petroleum, cement, salt, and

---

[26]The peak of Michigan's coal mining production was reached in 1907, when over two million tons were mined. By 1938, production had declined to 478 thousand tons, by 1945, to 126 thousand tons, and in 1949, it was a mere 11 thousand tons. See Michigan, Oxford University Press, p. 64; Minerals Yearbook: 1949, p. 281; and Minerals Yearbook: 1951, pp. 315 and 317.

sand and gravel in that order.[27]

Sand and Gravel. Michigan ranked second among the forty-eight states in 1951 in the production of sand and gravel. Michigan's sand and gravel industry attained a degree of importance after the first World War which was accelerated by World War II. In addition, since World War II production has increased again, so that by 1951, it had climbed to 24.7 million tons valued at $18.3 million.[28]

Most of the sand and gravel of the state comes from Oakland, Kent, Ottawa, Livingston, Manistee, Muskegon, and Osceola counties in southern Lower Michigan. The counties of Marquette, Iron, and Dickinson in the Upper Peninsula, however, do have some production.

Gypsum. Gypsum mining has been continuously profitable in Michigan since 1841, and since 1916 has had yearly products valued at more than $1.0 million per year. Since the turn of the century, Michigan has been one of the leading gypsum producing states in the United States. Since 1900, it has never ranked, except once, below third in quantity produced, and lower than fourth in value of products produced. In 1951, the last year for which data are available, Michigan ranked first among the forty-eight states in both quantity and value of production with a production of

---

[27]Statistics are taken from Minerals Yearbook: 1951, p. 1203; Mineral Industries of Michigan, p. 40; and Paul Cross Morrison, "Michigan Limestone in the Great Lakes Stone Trade", Economic Geography, Vol. 18, October 1942, p. 413.

[28]The Americana Annual: 1954, p. 451; see also 1952 Year Book Brittanica, p. 461; Minerals Yearbook, 1949, p. 1070; Production and Value of Minerals and Mineral Products in Michigan, 1936, p. 31; and Mineral Industries of Michigan, p. 41.

1.6 million tons valued at $4.4 million.[29]

The leading gypsum mining and quarrying areas are at Grand Rapids and Alabaster. In these areas the resource is located near the surface.

Clay. The large deposits of clay in the southern part of the state, suitable for making brick, caused the brick making industry to develop early in Michigan. By 1899, there were 196 brick and tile plants in operation. After the turn of the century the industry continued to grow, with the years of highest production in Michigan being just before World War I. Directly after the war, production fell off only to be rejuvenated by the building boom of the middle twenties. Immediately following this period, however, production declined rapidly, with concrete products and other competitive materials making serious inroads into the brick and tile industry.[30] The industry has never recovered. In 1951, the value of Michigan's clay production approximated $1.5 million.[31]

The main commercial clay areas of Michigan are located in Bay City, Saginaw, Jackson, Grand Ledge, Detroit, Grand Rapids, Kalamazoo, and Lansing.[32]

---

[29] Minerals Yearbook: 1951, p. 655. For earlier statistics see respective Mineral Yearbooks.

[30] Production and Value of Minerals and Mineral Products in Michigan, May 1, 1933, p. 22.

[31] Minerals Yearbook: 1951, p. 300.

[32] B. Hudgins, Michigan Geography, p. 87.

Miscellaneous Minerals and Mineral Products. Among what could be characterized as Michigan's miscellaneous minerals and mineral products are silver, gold, and mineral waters. Silver is associated largely with native copper, and is picked largely from the copper stampings in the mines of the Procupine Mountain region.[33]

In 1881, gold was discovered six miles northwest of Ishpeming, Marquette County, and by 1897, this area's accumulated production was valued at $750.0 thousand.[34] From 1900 to 1933, Michigan's gold production was nil, but in the thirties some gold was produced as a result of exploratory and development work in some of the old gold mines near Ishpeming.[35] The total value of both gold and silver mined in Michigan, from the discovery of the metals to the present, is probably only around $1.5 million.

Though Michigan has produced considerable quantities of mineral water, no study has ever been made of production.

D. Agriculture. Since Michigan's territorial days, agriculture has been a leading industry, both from the standpoint of value of products and number of people employed. Michigan's early agricutural settlement

---

[33] F. E. Lewis, My State and Its Story, p. 196. See also Michigan, Oxford University Press, p. 63.

[34] William Harvey Emmons, Gold Deposits of the World, McGraw Hill Book Company, Inc., New York and London, 1937, p. 107.

[35] Mineral Industries of Michigan, p. 46. See also Publication 8, Michigan Geological Survey, for a detailed account of Michigan's gold mining history.

began in the southern portion of Michigan. As the state matured and population increased, the agricultural settlement extended northward, but with the southern portion of the state always maintaining its supremacy in regard to agricultural production. The reason for this supremacy being that the southern portion of the state has the longest growing season, the better soils, and the better location to take advantage of transportation facilities and markets.

Statistics reveal that in 1840, over 90 percent of the people in Michigan were engaged in agriculture, however, at the present time only about 11 percent of the people are so occupied. Yet, the important thing here is that Michigan's total production in 1950, both dollar-wise and unit-wise, exceeded the production of 1840 by several fold.[36]

How important is agriculture to Michigan? In 1950, approximately 17.3 million acres or 47.3 percent of the state's land area were in farms as compared with 18.4 million acres (50.4 percent) in 1945, 18.0 million acres (49.4 percent)in 1935, and 19.0 million acres (51.7 percent) in 1920. More than half of the 155,589 farms in 1950 ranged from 50 to 200 acres, and crop lands during the same year totalled 7.8 million acres.[37]

The value of all farm lands and buildings increased from $912.5

---

[36]See B. Hudgins, Michigan Geography, p. 84. See also 1950 Census of Agriculture: Michigan, United States Department of Commerce. Bureau of the Census, U.S.G.P.O., Washington, D. C., 1952, pp. 259-313. Hereafter cited as 1950 Census of Agriculture: Michigan.

[37]Michigan Agricultural Statistics 1951, Michigan Department of Agriculture, Lansing, Mich., May 1952, p. 15. Hereafter cited as Michigan Agricultural Statistics: 1951. See also "Michigan", Encyclopedia Brittanica, p. 422, and 1950 Census of Agriculture: Michigan, p. 3.

million in 1940, to $1.2 billion in 1945, and by 1950, to $1.7 billion. This shows an increase in value of farm lands and buildings of nearly 100 percent from 1940 to 1950.[38]

The value of all farm products sold in Michigan in 1950 was $473.6 million, of which $285.9 million was from livestock and livestock products, $3.0 million from forest products, and $184.7 million from crop returns.[39]

A further gauge of agriculture in Michigan's economy can be seen by observing the estimated cash receipts from marketings. This figure in 1951 totalled $781.0 million, of which $274.3 million was crop returns, $8.8 million, government payments, and $497.9 million from livestock and livestock products. This value of $781.0 million of cash farm income in 1951 allowed Michigan to rank fifteenth in the nation in total cash farm income. To break this down into its component parts it ranked twentieth in value of farm crops, and fourteenth in cash farm income from livestock.[40]

As for the number of people employed in agriculture, in June of 1949, there were 278,300 or 11.3 percent of the state's labor force.[41]

---

[38] Michigan Agricultural Statistics: 1951, p. 16. See also, "Michigan", Encyclopedia Brittanica, p. 422.

[39] Michigan Agricultural Statistics: 1951, p. 17.

[40] Ibid., pp. 5 and 7.

[41] "Michigan", Encyclopedia Brittanica, p. 422.

In regard to farm ownership the census for 1950 shows that of the 155,589 farms in the state, 73.2 percent were operated by full owners, 17.4 percent by part owner, .4 percent by managers, and 9 percent by tenants. This 9 percent of the farms being operated by tenants is a considerable change from the 19 percent operated by tenants in 1935.[42]

Because of Michigan's wide latitudinal variation (6°) it is able to grow many different kinds of crops, and raise many different types of livestock. Thus, in the following portion of the study we will deal specifically with the different types and quantities of products produced, in order, not only to show the respective values of the crops, but also to show the diversity of Michigan's agriculture.

Grains. In common with other farm crops, most of Michigan's grain is grown in the lower half of the lower peninsula. The leading Michigan grains are corn, wheat, oats, rye, barley, and buckwheat.

Corn, of all the crops produced in Michigan, was first in value in 1951. Its total production in that year was 69.1 million bushels valued at $120.8 million. This production permitted it to hold down the number eleven position in rank among states.[43] Corn is gorwn on about 120 thousand farms in Michigan, or 68 percent of the farms in the state. Lenawee is the leading producing county; others are Monroe, Hillsdale, Gratiot, Saginaw,

---

[42] Agricultural Statistics 1951, United States Government Printing Office, Washington, D. C., 1951, p. 531. Hereafter cited as Agricultural Statistics: 1951. See also 1950 Census of Agriculture: Michigan, p. 4.

[43] Michigan Agricultural Statistics: 1951, pp. 7-8.

and Washtenaw.

Wheat is Michigan's third most important crop in terms of value, with its value amounting to $68.4 million in 1951, when 30.8 million bushels were produced. Its rank among the forty-eight states was seventeenth. Nearly all of Michigan's wheat is winter wheat.[44] All in all, wheat is grown on about 70 thousand farms in Michigan with Lenawee, Clinton, Shiawasee, Saginaw, and Monroe counties being the leading areas of production.

Michigan, because of its cool land, is well adapted for the growing of oats. In 1951, Michigan ranked seventh among the forty-eight states is its production. This ranking, however, was a drop from 1940 when it held the sixth position. Michigan's production in 1951 was 60.2 million bushels worth $50.0 million. Sanilac, Lenawee, Huron, Saginaw, Tuscola, and Gratiot are the leading oat production counties in the state.[45]

At one time, Michigan was one of the leading producers of barley in the United States. In 1951, the state ranked fifteenth in the nation in the production of barley. In that year, the value of Michigan grown barley was $4.7 million from an output of 3.9 million bushels. The two leading barley producing counties in the state are Huron and Tuscola.[46]

Rye, like barley, was, for a good many years, one of Michigan's

---

[44] Michigan Agricultural Statistics: 1951, p. 8.

[45] B. Hudgins, Michigan Geography, p. 73. See also Michigan Agricultural Statistics: 1951, p. 8.

[46] Agricultural Statistics: 1951, p. 54; and Michigan Agricultural Statistics: 1951, p. 8.

leading crops. In 1910, Michigan led all states in rye production.[47] In recent years, however, the production and value of rye has declined. In 1951, Michigan produced 868.0 thousand bushels valued at $1.4 million. This production gave it sixth ranking among states in the United States.[48]

Michigan also ranks high among the states in the production of buckwheat; in 1950, it ranked fourth with a production of 264.0 thousand bushels valued at $264.0 thousand.[49]

Vegetables.[50] Michigan has long been a leading producer of vegetables among the states in the union. It produces beyond its own needs in several vegetables, notably, beans, potatoes, sugar beets, and celery.

Michigan has been the leading bean producing state in the United States for several years.[51] From 1939-45, the state had a total production more than double its nearest competitor. During this six year period Michigan's annual production was 4.4 million bags,[52] with an average annual value of $35.9 million. In 1949, its annual production was 5.5 million bags valued at $32.5 million, and in 1950, 3.3 million bags worth $22.9 million.[53] The production area of the crop is predominantly in

---

[47]B. Hudgins, Michigan Geography, p. 74.

[48]Michigan Agricultural Statistics: 1951, p. 8.

[49]Agricultural Statistics: 1951, p. 35.

[50]Vegetables, as the term is used here, includes both truck and esculent or leguminous vegetables.

[51]The use of beans here does not include soybeans or mung beans.

[52]Bags of one hundred pounds.

[53]Agricultural Statistics: 1951, p. 305.

the Saginaw Lowland, especially in Saginaw, Shiawasee, Clinton, Gratiot, Tuscola, and Huron counties.[54]

Potatoes do well on a sand loam, and thus can be readily grown throughout Michigan. From 1939-48, Michigan's annual production averaged 18.1 million bushels, which were worth, on the average, $21.8 million. By 1951, however, total production had declined to 10.8 million bushels. Nevertheless, with the tremendous increase in price its valuation was $21.1 million. The decline in production, however, dropped it from the seventh position it held in rank among states between 1939-48 to twelfth.[55] The heaviest producing regions are the Thumb-Upland area, the region south and east of Grand Traverse Bay, and the Upper Peninsula.

Sugar beets are grown extensively in numerous areas in Michigan, with the Saginaw Lowland, and the Thumb regions leading the way. The total sugar beet production of Michigan in 1951 was 589.0 thousand tons valued at $7.0 million. This value and production of sugar beets gave Michigan a rank of fifth among states in the United States. The state's average annual sugar beet production figure from 1939-48 was 733.0 thousand tons, with an average annual value for the crop of $7.3 million.[56]

---

[54]For more information on the historical development of the bean industry in Michigan see, Bert Hudgins, "Bean Production in Michigan", Economic Geography, Vol. 9, July 1933, p. 266.

[55]Michigan Agricultural Statistics: 1951, pp. 5 and 8. See also Agricultural Statistics: 1951, p. 254.

[56]Michigan Agricultural Statistics: 1951, p. 8. See also Agricultural Statistics: 1951, p. 84.

In 1951, Michigan ranked third in the total production of celery among the states. From 1940-49, the state's production of this vegetable averaged 2.7 million crates per year with an average annual value of $4.5 million; in 1951, the corresponding figures were 2.0 million crates and $4.0 million.[57] Kalamazoo is the celery center of Michigan.[58]

Michigan's soybean crop has had an annual value from 1939 to 1951 of $2.5 million or more. In 1951, the state ranked fourteenth in the production of soybeans among states in the United States. Michigan's production of soybeans in 1951 amounted to 2.5 million bushels worth $6.6 million. This $6.6 million was an all time high value for the crop. The leading soybean production areas in the state have been Monroe, Lenawee, and Gratiot counties.[59]

Other leading Michigan vegetable crops have been what can be categorized as truck crops. The leading crops in this category have been onions, tomatoes, cucumbers, celery, asparagus, snap beans, and cabbage. The value of each of the above mentioned crops was greater than $1.5 million in 1951. In addition, all of the above listed truck crops marketed for approximately $1.0 million or more per year for the ten year period, 1940-49.[60]

---

[57] Michigan Agricultural Statistics: 1951, p. 6.

[58] For an historical development of the celery industry in Michigan, see Elizabeth Eisiln, "Celery Growing in the United States", Journal of Geography, Vol. 37, January 1938, p. 32.

[59] Michigan Agricultural Statistics: 1951, p. 21.

[60] Ibid., p. 5.

Fruit. Michigan produces practically every northern grown fruit such as apples, peaches, pears, plums, grapes, cherries, melons, and berries. The 1951 harvest of these fruits in Michigan was valued at more than $36.0 million.[61]

Michigan's fruit area extends all along Lake Michigan from Berrien County in the southwest corner of the state up to Charlevoix in Charlevoix County.

In 1951, Michigan's fruit production approximated 365 thousand tons. The leading Michigan fruit crops in value of production were cherries, apples, strawberries, peaches, and pears (Table I). Each of these fruits had a value of production in 1951 of $1.0 million or more.

In 1951, the state ranked first in the production of cherries and strawberries, second in plums, fourth in apples, fourth in pears, seventh in grapes, ninth in cantaloups, and fourteenth in peaches.

Dairying in Michigan. Michigan is one of the dominant segments of the American Dairy Region, and according to Loyal Durand Jr., occupies "a central position between the intensive eastern and western portion of the area, and exhibits characteristics of both the regions to its east and to its west."[62]

One might say that dairying is almost everywhere an integral part of the Michigan agricultural panorama. Dairy manufacturing plants are

---

[61] Michigan Agricultural Statistics: 1951, pp. 5 and 7.

[62] Loyal Durand, Jr., "The Lower Peninsula of Michigan and the Western Michigan Dairy Region: A Segment of the American Dairy Region", Economic Geography, Vol. 27, April 1951, p. 182.

TABLE I

MICHIGAN FRUIT DATA FOR 1951*

Fruit	Unit	Production in 1951	Value of production in dollars in 1951
Cherries, sour	Ton	84,700	10,792,000
Apples	Bu.	9,085,000	10,430,000
Strawberries	Crt.	1,400,000	7,840,000
Peaches	Bu.	728,000	2,184,000
Pears	Bu.	1,035,000	2,018,000
Cherries, sweet	Ton	6,300	1,197,000
Grapes	Ton	9,000	882,000
Cantaloups	Crt.	314,000	612,000
Plums	Ton	4,800	533,000

*Source: Michigan Agricultural Statistics: 1951, pp. 5-6.

dispersed extensively throughout the state, and everywhere may be found a dairy herd of moderate size. The three main areas, however, are: (1) the eastern counties north and northeast of Detroit, extending along Lake Huron to a point just south of the northern tip of the Thumb; (2) the Allegan-Ottawa-Kent County region of the western Lower Peninsula; and (3) the Branch-Hillsdale-Lenawee County area of southwestern Michigan.

Michigan's total dairy product industry produced merchandise worth $177.3 million in 1950 and $202.3 million in 1951.[63] On January 1, 1952, the state possessed nearly one million dairy cows.[64]

With reference to the value of individual dairy products, the best available statistics were published in 1951, for the year 1949. In that year the state was seventh in total milk production, eighth in creamery butter production, ninth in total cheese production, eighth in evaporated whole milk, fourth in nonfat dry milk solids, and sixth in ice cream.[65]

Livestock and Poultry (Other than Dairy). Livestock is raised in all parts of the state, although principally in the southern half of the Lower Peninsula. In overall cash receipts from livestock and livestock products, Michigan, in 1951, ranked thirteenth among all states in the Union, with a value of receipts of $497.9 million.

As regards the component parts of the livestock total, in number of

---

[63] Michigan Agricultural Statistics: 1951, p. 7.

[64] Ibid., p. 27.

[65] Agricultural Statistics: 1951, pp. 396 and 412-13.

horses and colts, Michigan, in 1952, ranked twenty-seventh, thirtieth in mules and colts, twenty-second in all sheep and lambs, seventeenth in hogs and pigs, sixteenth in chickens on farms, fifteenth in eggs produced, and thirteenth in turkeys on farms and turkeys raised. In number and value of animals, and fowl, Michigan had 956.0 thousand hogs and pigs valued at $28.5 million, 433.0 thousand sheep and lambs worth $12.2 million, 79.0 thousand horses and colts valued at $4.1 million, 2.0 thousand mules estimated to be worth $94.0 thousand, 11.3 million chickens appraised at a value of $19.8 million, and 120.0 thousand turkeys worth $780.0 thousand, in 1952. In addition, in 1952, the chickens of the state produced 1,603,000,000 eggs worth $64.0 million.[66]

E. Manufacturing and Commerce. Due to the pervasiveness and wealth of its raw materials and natural resources Michigan was "destined" to become a great industrial center. This was pointed out by Bert Hudgins when he said:

> Due to the wealth of raw materials - wood, copper, iron, limestone and salt - within the boundaries of the state, and because of well developed transportation facilities and the position of Michigan between the populous East and the great interior 'bread basket' of the nation, the state was destined to become one of the great industrial areas of the world.[67]

Michigan did not become an important industrial state until around 1900, nevertheless, it did have a considerable amount of industry prior to

---

[66] Michigan Agricultural Statistics: 1951, pp. 5, 28, and 32.

[67] B. Hudgins, Michigan Geography, p. 84.

that period. As early as 1849 there were goods manufactured in the state worth around eleven million dollars.[68] From this relatively modest beginning, production advanced steadily with lumbering coming to the forefront in the decades of the seventies and eighties, only to decline and be followed by the metal using industries by the turn of the century. And since the turn of the twentieth century Michigan has marched at a double time cadence in the industrial parade.

According to one student of Michigan's economic development, the period in the state's history between 1894-1904 constituted a transition era "wherein general production tended to be centered in the larger cities although the age of specialization had not as yet taken place."[69] In addition, he says that:

> Although many phases of the story will never be known it is obvious that the rapid decline of self sufficiency, the more complex character of industry, and the acceleration of urbanization, all of which are associated with the economic revolution, had finally become significant in Michigan life by 1904.[70]

Thus, by 1900, Michigan was on its way to making its mark in the industrial milieu. In fact, auto manufacturing began soon after the beginning of the twentieth century and with it came changes both social and economic, incident to a regional trend from agriculture to industry.

---

[68] Michigan, Oxford University Press, p. 67.

[69] Sidney Glazer, "The Beginning of the Economic Revolution in Michigan", Michigan History, Vol. 34, September 1950, p. 198.

[70] Ibid., p. 202.

By 1909, Michigan was already showing its diversity of industry, having fifty-eight industries, each with products valued at $1.0 million or more and a total annual pay roll of $119.0 million. Through the era of World War I, Michigan's industrial might continued to expand. The automobile led the way. In addition to the auto industry, however, many others were gaining significance, for example, foundries, machine shops, furniture, engines, paper and wood pulp, brass, bronze and copper products, lumber and wood products, slaughtering and meat packing, prepared foods, and the manufacture of drugs and chemicals, each produced goods in 1925 worth over $50.0 million.[71]

By 1947, Michigan was well on its way to becoming one of the leading industrial states in the nation. In that year Michigan's factories were paying out wages and salaries of $3.1 billion and had a "value added by manufacture"[72] of $5.2 billion.[73]

By 1952, Michigan was truly an industrial state, being surpassed only by New York, Pennsylvania, Illinois, and Ohio, in "value added by manufacture" and wage earners employed. Michigan employed approximately 1.1 million men in 1952 paying them wages and salaries of $4.9 billion. The total "value added by manufacture" for the state in 1952 was $8.3 billion.[74]

---

[71] Michigan, Oxford University Press, pp. 67-68.

[72] Value added by manufacture refers to the value of a product less cost of materials, supplies, fuel, electric energy, and contract work.

[73] Census of Manufactures: 1947, Vol. 3, U. S. Department of Commerce, Bureau of the Census, U.S.G.P.O., Washington, D. C., 1950, p. 302. Hereafter cited as Census of Manufactures: 1947, Vol. 3.

[74] Annual Survey of Manufactures: 1952, U. S. Department of Commerce, Bureau of the Census, U.S.G.P.O., Washington, D. C., 1953, Table 6, p. 58. Hereafter cited as Annual Survey of Manufactures: 1952.

It should also be pointed out that though motor vehicle manufacturing still dominates all other industries in the state, one should not lose sight of the fact that Michigan's industry remains diverse. Evidence of this diversity is exhibited by the fact that of the 451 industrial groups defined in the census of manufactures in 1947, 361 or 80 percent were found in Michigan.

With this cursory background on Michigan's overall industrial progress, let us look at some of the characteristics of the individual industries within the state.

Motor Vehicles and Equipment[75] Diversified as are Michigan's industries the automobile industry is the greatest of all and is the one most important reason for Michigan being one of the world's great industrial areas. The automobile was not invented in Michigan, but it owes its development and growth to this state. In 1904, the production of automobiles in Michigan was valued at less than $8.0 million. By 1926, however, the value of automobiles produced in the state had ascended to the phenomenal figure of $1.8 billion while bodies and parts accounted for another $921.9 million. Production declined somewhat during the depression years, but at the present time it is even higher than it was during the "golden era" of the twenties. It was estimated in 1950, that 57 percent of the 715,000 production workers of the United States, whose record output of passenger cars, trucks and busses, totalled over 8.0 million units valued at $8.8 billion

---

[75]For statistics on other industries within the transportation category, see Table II, pp. 47-50 of this study.

were in Michigan.[76] In 1947, the last year for which statistics are available on individual industries, there were 377,641 persons employed in Michigan's motor vehicle industry. These persons were paid wages and salaries totalling $1.2 billion and the industry had a "value added by manufacture" of $1.9 billion.[77] The main artery of the industry is located at Detroit, with Flint, Lansing, Pontiac, Dearborn, and Hamtramck also key cities.

Furniture. The furniture industry is one of the state's oldest institutions getting its start with the early settlements.[78] From its beginning the industry has prospered. In 1952, there were over 350 Michigan establishments producing furniture and fixtures. These establishments employed, in the same year, 21,173 workers who drew wages totalling $88.0 million. The "value added by manufacture" by the industry was $150.0 million. Grand Rapids is the furniture center of Michigan.[79]

Paper and Allied Products.[80] Paper manufacturing is carried on

---

[76]"Michigan", Encyclopedia Brittanica, p. 422. See also Michigan, Oxford University Press, p. 68.

[77]Census of Manufactures: 1947, Vol. 3, p. 305.

[78]Holdent, a cabinet maker in Grand Rapids, was making furniture as early as 1840. See B. Hudgins, Michigan Geography, p. 85.

[79]Annual Survey of Manufactures: 1952, Table 6, p. 58.

[80]This industry comprises pulp, paper, and paperboard mills; paper coating and glazing establishments; manufacture of envelopes; manufacturing of paperboard, containers, and boxes; and converted paper products manufactures. See Census of Manufactures: 1947, Vol. 3, p. 303. For specific statistics on the above listed industries, see Table II, pp. 47-50 of this study.

throughout all parts of the state. It is especially noticeable in areas associated with former lumbering regions. In 1952, this portion of Michigan's industrial structure paid 28,042 employees salaries and wages amounting to $117.3 million; the industry's "value added by manufacture" was $221.5 million.[81]

Printing and Publishing. An industry somewhat closely related to the paper products industry is the printing and publishing industry. This industry includes such diverse projects as newspapers, periodicals and book publishings, commercial printing, lithographing, bookbinding, and the printing trade service industries. The printing and publishing industry, in 1952, with a "value added by manufacture" of $200.7 million, paid wage and salary compensations of $125.3 million to 28,066 employees.[82]

Rubber Products. The rubber products industry, though far overshadowed by that of many other states, is still of considerable importance to the Michigan economy. In 1952, the "value added by manufacture" of this industry was $92.7 million, and it employed 12,253 persons who earned remunerations totalling $59.6 million.[83]

Chemicals and Related Products.[84] Michigan has long been a leader in

---

[81] Annual Survey of Manufactures: 1952, Table 6, p. 58.

[82] Ibid.

[83] Ibid.

[84] The term "chemical and related products" consists of industrial organic chemicals, drugs and medicines, soap and related products, paints and allied products, vegetable and animal oils, and such miscellaneous chemical products as printing ink, toilet preparations, and compressed and liquefied gasses. See Census of Manufactures: 1947, Vol. 3, p. 25. For specific statistics on these industries, see Table II, pp. 47-50 of this study.

the chemical industry. In 1952, it ranked sixth among states of the union in the manufacture of chemicals and related products. In attaining this rank, Michigan's chemicals and related products industry employed 36,652 persons, paid them $169.2 million, and had a "value added by manufacture" of $411.1 million.[85]

Machinery (Other than Electrical).[86] In 1952, Michigan ranked third among the states of the union in the manufacture of machinery other than electrical.[87] In number of individuals employed, 169,027, salaries and wages paid, $871.0 million, and "value added by manufacture," $1.5 billion, this industry was second only to automobile manufacturing in Michigan.

Of the industry's many component parts the three most important groupings in number of persons employed were the manufacturers of metal-working machinery, the manufacturers of refrigeration equipment, and the manufacturers of internal combustion engines. These three groups employed nearly half of all the people engaged in the machinery, other than

---

[85] Annual Survey of Manufactures: 1952, Table 6, p. 58.

[86] This category is made up of establishments manufacturing the following: internal combustion engines; tractors and farm machinery; metal-working machinery; special industrial machinery such as food products machinery; woodworking machinery; printing trades machinery; also general industry machinery like pumps and compressors, conveyors, blowers and fans; industrial trucks and tractors; power transmission equipment; industrial furnaces and ovens, plus domestic laundry equipment; refrigeration machinery; and many miscellaneous machinery parts. See Annual Survey of Manufactures: 1952, pp. 30-32. For specific statistics on industries listed above, see Table II, pp. 47-50 of this study.

[87] First and second rank were held by Ohio and Illinois respectively. See Annual Survey of Manufactures: 1952, pp. 48-79.

electrical, category.[88]

Primary Metal Industries.[89] In 1952, the production value of the primary metal industries in Michigan was exceeded by only four other states, Pennsylvania, Ohio, Illinois, and Indiana.[90]

The most important components of the primary metals industries were the steel works and rolling mills and the iron and steel foundries. These two groupings employed over 60,000 men in 1947 which was more than two-thirds of the total number employed in the entire primary metals classification for that year.[91] In 1952, the entire primary metal industries had a "value added by manufacture" of $609.6 million produced by 83,204 employees who were paid $391.5 million.[92] These figures made primary metals the fourth largest industry in the state, ranking behind the transportation equipment, machinery (except electrical), and fabricated metal products industries in that order.

---

[88] These statements are based on 1947 data as this was the latest year for which data are available on individual industries. See Census of Manufactures: 1947, Vol. 3, p. 305.

[89] This grouping includes steel works and rolling mills, iron and steel foundries, secondary nonferrous metals, nonferrous metal rolling and drawing, nonferrous foundries, and miscellaneous primary metal industries. See Annual Survey of Manufactures: 1952, p. 30. For specific information on each of the above listed industries, see Table II, pp. 47-50 of this study.

[90] Annual Survey of Manufactures: 1952, pp. 48-79.

[91] Census of Manufactures: 1947, Vol. 3, p. 304.

[92] Annual Survey of Manufactures: 1952, p. 58.

Fabricated Metal Products.[93] In 1952, in the production of fabricated metal products, Michigan, in number of employees, wages and salaries paid, and "value added by manufacture", ranked only behind Ohio and Illinois. The fabricated metal products industry ranks third among Michigan's industrial industries in regard to number of employees, wages and salaries paid, and "value added by manufacture."

The importance of the industry to Michigan's economy is noted when one observes that the industry gave employment to 98,822 persons in 1952, and paid them wages and salaries totalling $679.1 million. In addition, in 1952, the industry had a "value added by manufacture" of $747.9 million.[94]

Lumber and Products, except Furniture.[95] Lumber was once king in Michigan. In the post civil war expansion period Michigan was the country's number one pine producer. As one writer has put it:

> The prairie states were calling for timber and Michigan's was massed in big stands with easy river access to the Great Lakes. Up sprang 800 camps, employing 25,000 loggers, plank roads were laid through the wilderness and by 1890 Michigan's pine lumbering reached its peak with 4,250,000,000 feet.[96]

---

[93]This classification is composed of the following industries: cutlery, hand tools, and hardware; heating and plumbing equipment; structural metal products, metal stamping and coating; lighting fixtures; fabricated wire products; and miscellaneous fabricated metal products. The importance of each of the above mentioned industries can be seen from Table II, pp. 47-50 of this study.

[94]Annual Survey of Manufactures: 1952, p. 58.

[95]Into this category falls basic lumber and timber products, millwork and related products, wooden containers and miscellaneous wood products. See Table II, pp. 47-50 of this study for statistics on these individual industries.

[96]Melville Charter, "Michigan, Mistress of the Lakes," The National Geographic Magazine, Vol. 53, March 1928, p. 294.

After the turn of the century, however, Michigan's once giant forest had become nothing but a mere shadow of its former self. By 1924, Michigan's cut, taken chiefly in the Upper Peninsula, was less than 3 percent of the national production.[97]

In 1952, Michigan employed 16,783 people or about 3 percent of all the persons employed in the lumber and lumber products industry in the United States. These employees, during the same year, were given remuneration to the extent of $55.2 million. Moreover, in 1952, the industry had a "value added by manufacture" of $86.6 million.[98]

Electrical Machinery.[99] Though nowhere near as large as the machinery industry, other than electrical, the electrical machinery category is still a relative important industry in Michigan's total production picture. In 1952, this industry supplied the means of livlihood to 17,173 persons, who were paid salaries and wages totalling nearly $69.8 million. In addition, the industry's "value added by manufacture" amounted to $125.7 million.[100]

Food and Kindred Products (N.E.C.). The main product groupings which are included in the food and kindred products classification are meat

---

[97] Ibid., p. 295.

[98] Annual Survey of Manufactures: 1952, p. 58.

[99] Electrical machinery, as used here, includes electrical industrial apparatus, electrical appliances, communication equipment and miscellaneous electrical products. Table II, pp. 47-50 of this study gives the pertinent statistics of these industries.

[100] Annual Survey of Manufactures: 1952, p. 58.

products, bakery products, beverages, and miscellaneous food preparations.

The importance of these services is readily realized when one observes that in 1947, they employed in toto, 28, 462 workers with a total wage of $87.8 million. The combined "value added by manufacture" for the afore mentioned industries was $167.4 million in 1947.[101]

Miscellaneous Manufactures. Into the miscellaneous manufactures characterization fall such diverse industries as the making of apparel and related products, tobacco manufactures, textile mill products, leather and leather products, toys and sporting goods products, and plastic products. These heterogeneous industries in 1947 paid out wages and salaries of $66.8 million to 27,786 persons. As a result of their efforts these industries also added $125.7 million to the state's "value added by manufacture" column.[102]

In conclusion, one can say that Michigan's principal activity is manufacturing, and that Michigan's manufacturing, though diverse, is led by two main categories, namely, motor vehicles and parts, and machinery (other than electrical). In 1952, these two categories employed more than half of all the persons employed in manufacturing activities in the state.

---

[101] Census of Manufactures: 1947, Vol. 3, p. 302. The figures for the component industries, for the same period were: bakery products, 12,762 employees, $36.7 million paid in salaries and wages and a "value added by manufacture" of $63.0 million; beverages, 6,868 employees, $23.3 million wages and salaries paid, and "value added by manufacture" of $52.7 million; meat products, 6,152 employees, remuneration paid $20.2 million, and "value added by manufacture" totalling $34.9 million; and for miscellaneous food preparation, 2,680 employees, $7.6 million total salaries and wages paid, and a $16.9 million "value added by manufacture."

[102] Ibid., pp. 303-305.

TABLE II

MICHIGAN'S EMPLOYMENT, WAGES, AND VALUE ADDED STATISTICS FOR 1947*

Industry	Number of employees	Wages in millions of dollars	Value added in millions of dollars
Motor vehicles and equipment	377,641	1,208.8	1,907.5
Motor vehicles and parts	371,795	1,190.9	1,880.8
Gray-iron foundries	40,146	127.1	155.5
Cutting tools, jigs, fixtures, etc.	24,140	98.2	149.1
Metal stampings	19,808	64.7	101.5
Refrigeration machinery	18,212	54.0	102.4
Hardware (N.E.C.)	16,759	50.7	77.0
Steel works and rolling mills	15,603	58.5	83.2
Rubber products	15,417	56.6	85.2
Internal combustion engines	14,356	50.5	70.1
Fabricated wire products	13,179	38.9	56.1
Household furniture	12,874	35.1	49.3
Bakery products	12,762	36.7	63.0
Pulp, paper, and paperboard	11,856	40.7	88.1
Heating and plumbing equipment	10,885	33.8	74.7
Industrial organic chemicals	9,389	32.5	87.3
Machine shops	9,092	26.1	44.2
Newspapers	9,055	32.8	64.4
Machine tools	8,359	30.6	43.2
Drugs and medicines	8,339	24.9	74.0
Valves and fittings, except plumbers	7,798	23.5	39.3
Tractors and farm machinery	7,651	22.3	39.9
Nonferrous metal rolling and drawing	7,101	23.0	37.1
Beverages	6,868	23.3	52.6
Bottled soft drinks	2,749	7.7	14.9
Malt liquors	3,667	14.2	34.3
Lumber and timber basic products	6,589	14.9	25.6
Industrial inorganic chemicals	6,546	22.8	37.8
Grain mill products	6,189	16.8	55.7
Meat products	6,152	20.2	34.9

*Source: Census of Manufactures: 1947, Vol. 3, Table 4, pp. 303-305.

TABLE II (continued)

MICHIGAN'S EMPLOYMENT, WAGES, AND VALUE ADDED STATISTICS FOR 1947*

Industry	Number of employees	Wages in millions of dollars	Value added in millions of dollars
Power-transmission equipment	6,091	19.5	31.2
Commercial printing	6,071	19.0	31.7
Toys and sporting goods	6,026	15.5	26.7
Miscellaneous nonmetallic mineral products	5,902	17.8	29.2
Converted paper products,(N.E.C.)	5,811	16.9	34.3
Plating and polishing	5,285	14.7	24.6
Radios and related products	5,115	13.3	18.0
Malleable-iron foundries	4,812	15.0	20.3
Miscellaneous wood products	4,672	11.6	18.2
Leather and leather products	4,357	11.6	23.8
Screw machine products	4,138	13.9	23.6
Paperboard containers and boxes	4,084	11.8	28.6
Dairy products	4,066	10.2	27.7
Motors and generators	4,051	9.1	17.1
Canning and preserving, except fish	4,028	9.2	16.3
Special-industry machines	3,993	16.4	32.1
Domestic laundry equipment	3,830	12.8	21.5
Paints and varnishes	3,672	12.5	35.2
Structural and ornamental products	3,653	12.8	26.3
Bolts, nuts, washers, and rivets	3,633	12.8	31.6
Miscellaneous chemical products	3,559	10.8	26.9
Electrical control apparatus	3,464	11.4	18.6
Petroleum and coal products	3,479	12.3	50.2
Concrete and plaster products	3,429	9.4	20.9
Wire drawing	3,401	10.0	15.6
Conveyors	3,202	13.1	23.8
General industrial machinery	3,093	11.2	16.9
Public and professional furniture	3,012	9.0	12.9
Steel foundries	2,912	9.2	12.3
Metal doors, sash and trim	2,866	10.1	18.2

*Source: Census of Manufactures: 1947, Vol. 3, Table 4, pp. 303-305.

TABLE II (continued)

MICHIGAN'S EMPLOYMENT, WAGES, AND VALUE ADDED STATISTICS FOR 1947*

Industry	Number of employees	Wages in millions of dollars	Value added in millions of dollars
Screens, shades, and blinds	2,701	7.0	11.6
Ships and boats	2,677	7.6	9.1
Miscellaneous textile goods	2,671	7.2	17.6
Miscellaneous fabricated textile	2,649	6.6	11.7
Pumps and compressors	2,635	9.0	13.6
Millwork and related products	2,610	7.2	11.7
Metalworking machinery, (N.E.C.)	2,564	8.4	16.6
Woodworking machinery	2,494	8.0	14.0
Automobile trailers	2,484	7.3	13.6
Welded and heavy riveted pipe	2,365	8.6	16.4
Knitting mills	2,349	5.4	9.1
Women's and children's undergarments	2,288	4.7	8.7
Blowers and fans	2,245	7.2	12.7
Wooden containers	2,212	5.5	13.5
Hand tools, (N.E.C.)	2,186	6.5	9.5
Mechanical measuring instruments	2,132	5.9	7.8
Boiler shop products	2,121	7.3	12.4
Primary metal industries,(N.E.C.)	2,022	7.1	13.3
Bookbinding and related industries	1,970	5.0	9.6
Aircraft and parts	1,954	6.5	10.1
Industrial trucks and tractors	1,942	6.0	15.6
Sheet-metal work	1,905	6.3	9.6
Cement, hydraulic	1,884	5.5	13.4
Office furniture	1,879	6.3	11.4
Railroad equipment	1,833	5.8	8.3
Printing-trade services industries	1,757	8.3	12.5
Public and professional furniture	1,657	5.2	8.8
Men's and boy's furnishings	1,570	2.8	4.7
Plastic products,(N.E.C.)	1,398	3.6	6.5
Food preparations,(N.E.C.)	1,331	3.6	6.2

*Source: Census of Manufactures: 1947, Vol. 3, Table 4, pp. 303-305.

TABLE II (continued)

MICHIGAN'S EMPLOYMENT, WAGES, AND VALUE ADDED STATISTICS FOR 1947*

Industry	Number of employees	Wages in millions of dollars	Value added in millions of dollars
Pickles and sauces	1,316	2.5	4.5
Confectionary and related products	1,294	2.3	5.1
Lithographing	1,285	5.0	8.6
Beet sugar	1,275	2.8	5.1
Electrical welding apparatus	1,268	5.4	9.8
Lighting fixtures	1,252	4.1	12.6
Women's and misses outerwear	1,159	2.3	4.3

*Source: Census of Manufactures: 1947, Vol. 3, Table 4, pp. 303-305.

F. Population and Labor Force. Closely allied with the industrial progress of any state is an increase in the number of people who occupy it. The population of Michigan has shown a steady, and at times, spectacular growth increasing from 4,472 in 1810 to 212,267 in 1840, to 1,184,059 by 1870, up to 2,420,982 in 1924, to 3,668,412 in 1930, and by 1950, up to 6,371,766. This last figure represents an increase of 1,115,660 persons or 21.2 percent over the population in 1940.[103] The density of Michigan's population per square mile was 111.7 in 1950 as compared with 92.0 in 1940, and with 50.7 for the United States in 1950.

A word of caution should go, however, with any statistics on Michigan's population growth and density. In the first place, there is a marked uneveness with respect to density in the various parts of the state. In fact, it has been stated that if one drew a line from Saginaw to Muskegon, over 80 percent of the population of the state would be below this line. In addition to this density factor, it is estimated that the population of the southern portion of the state is increasing while that of the north is on the wane,[104] thereby, further accentuating the differences in population densities in the northern and southern part of the state.

The 1950 urban population of Michigan consisted of 4,503,084 persons, or 70.7 percent of the population of the state. The rural population of

---

[103] Census of Population: 1950, Vol. 2, "Characteristics of the Population", Part 22, "Michigan", United States Department of Commerce, Bureau of the Census, U.S.G.P.O., Washington, D. C., 1952, Table I, p. 9. Hereafter cited as Census of Population, Michigan: 1950.

[104] B. Hudgins, Michigan Geography, p. 97. See also A. B. Wolfe, "Some Population Gradients in the United States", Geographical Review, Vol. 18, April 1928, p. 297.

Michigan numbered 1,868,682 persons, or 20.3 percent of the total population of the state.[105] There are nine cities in the state with more than 50,000 inhabitants. Of these cities, Detroit was by far the largest with a population of 1,849,568 in 1950. The other cities with population over 50,000 were, in order of numerical importance: Grand Rapids, 176,515; Flint, 163,143; Dearborn, 94,994; Saginaw, 92,918; Lansing, 92,129; Pontiac, 73,681; Kalamazoo, 57,704; Bay City, 52,523; and Jackson, 51,088.[106] In addition, about 83.4 percent of the population was native white, 9.5 percent foreign born white, and 7.1 percent non-white in 1950.[107]

Out of a population of approximately 6.4 million people, Michigan, in 1950, had a labor force of 2,540,508 persons. The total employed numbered 2,393,574 or about 94 percent of the total force. The total number unemployed in the same year was estimated at 136,486.[108]

---

[105] Census of Population Michigan: 1950, Table I, p. 9.

[106] Ibid., Table 7, pp. 22-24.

[107] Ibid., Table 14, p. 47. For a more thorough analysis of the population problem in Michigan, see J. Allen Beegle, "Population Distribution in Michigan", Michigan State College Agricultural Experiment Station, Special Bulletin No. 342, East Lansing, Michigan, November 1942. See, also, J. Allen Beegle and J. F. Thaden, "Population Change in Michigan with Special Reference to Rural-Urban Migration, 1940-50", Michigan State College Agricultural Experiment Station, Special Bulletin No. 387, East Lansing, Michigan, October 1953.

[108] Ibid., Table 25, p. 56. See also Michigan Men and Skills for Industry, Michigan Department of Economic Development, Lansing, Mich., 1949.

G. Transportation. As with any state or geographic area, the economic potentiality of that area is closely related to its transportation system. Michigan is no exception. The earliest avenues of movement from one place to another were Indian trails and canoe trails. These trails served their useful purpose, and melted into new avenues of transportation, such as wagon roads and propelled boats, to be followed by railroads, steam boats, the cement highway, and, finally, overhead transportation. Thus, Michigan's transportation development was little different from that of any other area in the "New World."

From the time of the first settlements by the white man in Michigan down to 1825, there was, except for the fur trade industry, little commercial development within the state. This was due largely to the fact that few people knew about the area. For the most part, what they had heard had been bad, and even if they had had a favorable response to the area, it was almost impossible to get there, especially if one had been blessed with children. In 1828, however, a project was finished which had a great deal of significance to Michigan's development and settlement. That was the completion of the Erie Canal. The accomplishment of this feat meant that people could now move into the area fairly easily, and that goods could be transported eastward much more economically. Prior to this, the only movement of goods amounting to anything was the import of supplies and provisions from the east, and the shipping east of furs. Now, however, the course of commerce could be changed.

From 1825 on, due to the Erie Canal and the proximity of four of

the Great Lakes to Michigan,[109] the state's commercial role advanced. There was still a deterrent factor, however, which had to be remedied before Michigan could take its place among the important commercial states in the country. The retarding factor was the inability to ship goods from Lake Superior to Lake Huron due to a twenty-two foot difference of level between the two lakes, thereby meaning that goods could not be sent from their areas of origin to the market areas and vice versa.

A need for a connecting link between the two lakes was realized at an early date.[110] In 1852, actual construction on the canal was started with the government using the proceeds from the sale of three-quarters of a million acres of federally owned Michigan land, to finance the undertaking. The project was completed by 1855, and it provided for the State Canal, 5,674 feet long and two locks, one leading into the other.[111] Immediately, the commercial tempo of the state picked up, thereby showing that the first locks, though a great asset, were insufficient to handle the cargo moving between the lakes. This phenomenon of building a new lock and then finding out it is not sufficient to handle the increased traffic, strangely enough, has continued right down to the present. Thus, in 1881, the Weitzel Lock

---

[109] Lakes Michigan, Superior, Erie, and Huron border Michigan giving it a longer coastal line (1,624 miles) than any other state in the Union. See p. 10 of this dissertation.

[110] As early as 1837, the Michigan State Legislature, as one of its first orders of business, made plans for building a canal connecting the two lakes and provided twenty-five thousand dollars for its construction. See F. E. Lewis, My State and Its Story, p. 93.

[111] Each lock was 350 feet long and 70 feet wide.

was built, and fifteen years later the Poe Lock was constructed. Still, however, the quantity of commercial cargo continued to grow. In 1919, another lock was built and in 1943, still another.[112]

To show the importance of the "Soo" locks one need only look to the tonnage figures which go through them. In 1950, the tonnage locked through the American side was 104.2 million short tons which meant that this total was greater than that going through the Suez and Panama combined.[113]

Though water transportation has played a most important role in Michigan's settlement and development, it, alone, could not have done the job. Thus, we find Michigan's road and railroad facilities coming into play at an early date to serve as a valuable adjunct to water transportation in Michigan's rise up the economic ladder. Let's stop for the moment and see what role the railroad played in Michigan's development.

Michigan's railroad building commenced at an early date as a result of the fact that people were moving into the state for permanent settlement at the exact time that use of steam to land transportation was introduced.[114] Michigan's first railroad, one of the first railroads in the nation, was chartered between Toledo and Adrian in 1830, and from that date on, railroad building advanced at a rapid rate.

---

[112] The building of the MacArthur Lock in 1943, along with deepened channelling makes possible the locking of such boats as the Wilfred Sykes (1950), 678 feet long and a capacity of 22,000 tons of ore.

[113] "Michigan", Encyclopedia Brittanica, p. 423.

[114] B. Hudgins, Michigan Geography, p. 8.

Up to 1850, however, although the growth had been rapid in Michigan itself, there was still no rail connection between either Detroit and Chicago, or Detroit and New York. These two needs were remedied in 1852 and 1855 respectively.

Shortly after the Civil War ended a further need was remedied when rail connection was made between the Lower and Upper Peninsula. By 1910, rail construction in the state had pretty much reached its apex. It was estimated at this time that 90 percent of the state was within five miles of a railroad station and the total mileage of the state was more than nine thousand miles.

Since 1910, however, due to the increased use of motor and truck transportation, and the taking up of obsolete miles of track once necessary for the lumbering industry, the total railroad mileage of the state has decreased.[115] This does not mean, though, that the railroad is of diminishing importance in Michigan's economic picture. In fact, railroad tonnage has been increasing every year even though the total track mileage has decreased.

Now let us turn to the third great avenue of transportation in Michigan's settlement and development, the highway system.

Michigan's most widespread system of transportation is its highways. These roads, for the most part, follow the imprints of the early Indian and colonial trails. The trails became, due to the National Government, roads

---

[115] By 1940, total railroad mileage in the state had dropped to 7,338 miles and by 1950, it had decreased to just under 7,000 miles.

largely for military purposes. These highways played, needless to say, a large part in the settlement and development of the state. In addition to the main thoroughfares which followed the early trails, thousands and thousands of miles of branch roads were built to connect all parts of the state. Thus by 1950, the state had around 100,000 miles of highway to serve its more than 2.5 million registered motor vehicles.

A further scene in Michigan's transportation pageant, is the role played by air transport. Though not nearly so important as the three above mentioned forms in the state's development and settlement, nevertheless, it has and will be an important factor.

Air transport developed early in the state. Undoubtedly, this development was due to the state's already established pre-eminence in the manufacture of engines as well as its location on the direct air-route between Chicago and the eastern seaboard.

The first air-route from Chicago to Detroit was established in 1928, and since that date the state's air transport industry has been continually enlarged. In 1952, the state had more than 220 airports and landing fields, thereby connecting Michigan with air service to all important points in this country and abroad.

With this brief background on the position of the state's transportation facilities, past and present, it is hoped that the reader has become aware, if he were not already, of the vast labyrinth of highways, railroads, water and air lanes which connect Michigan's industry, agriculture, mining, etc., to the rest of the United States and to the other parts of the world.

In the next three chapters to follow, chapters three, four, and five, we shall turn our attention to determining and describing the nature and extent of Michigan's trade with foreign countries.

CHAPTER III

FOREIGN TRADE OF MICHIGAN

One champion of Michigan's foreign trade interests has said that "Michigan is probably the most internationally minded state in the Union."[1] Although the full truth of this statement can never be fully known, it is important, nevertheless, to find out the extent of Michigan's participation in foreign trade.

One means of finding this participation, short of finding a method to measure all foreign trade originating in the state and all foreign goods which have their final destination in Michigan, is to examine the data of a given state's customs district. This, as explained in the introduction to the study, is the method which the present investigator chose to use. Though there are many apparent weaknesses in gauging a state's foreign trade in this fashion, and the writer would be the first to admit them, it also seems apparent that there is a great deal of information on a state's activities that can be gleaned from customs district data. Therefore, although naturally not being the sole criteria, the customs district trade reports seem to be most germane to Michigan's foreign intercourse.

A. Period for Study. The period selected for study is the years 1951, 1952, and 1953. It was thought that by a comprehensive study of the state's trade during these three consecutive years a great deal of information

---

[1] Richard B. Frost, "Michigan - The World Trade State", Inside Michigan, Vol. 1, October 1951, p. 34.

could be gleaned about the state's foreign trade activities. With this general background we turn now to a study of Michigan's commodity trade.

B. Michigan Exports, General. Michigan's export trade in 1953 exceeded the billion dollar mark; it was $1.1 billion to be exact. This was the first time in the history of the state that exports had reached so large a figure.

As with the import trade, Michigan's exports showed a steady climb in value from 1951 to 1953. The total figures for the individual years were: 1951, $971.3 million; 1952, $978.2 million; and $1.1 billion in 1953.

Machinery and vehicles constituted the most important exports for the 1951-53 period. In 1951, the export value of this category of products was $449.1 million or 46 percent of the total; its 1952 value was $495.0 million and 51 percent, while in 1953, it was $563.3 million and 53 percent.[2] Following machinery and vehicles in export importance were nonmetallic minerals, and metals and manufactures. These two product groupings together supplied an average of 20 percent of the export items for the period in question,

---

[2]There is a slight underemphasis on the values and percentages for 1953 statistics due to retrenchments in the Department of Commerce's foreign trade and shipping statistics program. As of July, 1953, the Bureau of Census, as a result of substantial reductions in the personnel of the Bureau, changed from a policy of calculating all shipments regardless of value to one of estimating, from a 10 percent sample, the value of export shipments valued up to $500. Moreover, for the various customs districts, the estimated value of the goods valued under $500 are not allocated to the specific countries of destination, nor are they allocated to their respective commodity classifications. As the total amount, however, of this special grouping amounted to less than 2 percent of the total it was not deemed necessary, in an analysis of the annual statistics for the calendar year, to adjust them. This retrenchment in program is described in detail in Foreign Trade Statistics Notes, U. S. Dept. of Commerce, Bureau of the Census, Foreign Trade Division, September 1953, pp. 104-107.

TABLE III

MICHIGAN EXPORTS BY COMMODITY CLASSIFICATION*
1951-52-53

Commodity Classification	1951 Rank	1951 % of total	1951 Value (in thousands of dollars)	1952 Rank	1952 % of total	1952 Value (in thousands of dollars)	1953 Rank	1953 % of total	1953 Value (in thousands of dollars)
Edible animals and animal products	8	2.8	27,464	11	.5	4,966	11	.7	7,218
Inedible animals and animal products	11	1.3	12,643	10	.8	7,464	10	.7	7,475
Vegetable food products and beverages	5	5.6	54,129	4	6.7	65,271	6	6.0	64,193
Inedible vegetable products	10	2.3	22,772	8	2.6	25,549	9	2.0	21,344
Textile fibers and manufactures	4	9.3	90,582	6	6.0	58,560	7	4.4	47,329
Wood and paper	9	2.4	23,016	9	2.2	21,890	8	2.2	22,961
Nonmetallic minerals	2	11.0	107,042	3	10.1	99,286	3	8.8	94,021
Metals and manufactures	3	10.7	104,057	2	11.1	108,188	2	9.2	98,082
Machinery and vehicles	1	46.2	449,089	1	50.6	494,959	1	52.7	563,295
Chemicals and related products	6	5.3	51,674	5	6.2	60,903	5	6.2	66,007
Miscellaneous products	7	3.0	28,859	7	3.2	31,176	4	7.1	76,244
Total		100.	971,327		100.	978,212		100.	1,068,169

*Source: Unpublished Machine Tabulation Sheets EM 563: United States Exports of Domestic and Foreign Merchandise District of Exportation by Country of Destination By Commodity, Schedule B. Classification, U. S. Dept. of Commerce, Bureau of the Census, Foreign Trade Division, Washington, D. C., Monthly, 1951-53. Hereafter cited as Unpublished Machine Tabulation Sheets: EM 563.

each averaging approximately 10 percent.[3]

Upon inspection of Table III, several other points come to light. The commodity classification, edible animals and animal products, suffered the greatest percentage decline, dropping from a value of more than $27.0 million in 1951, to approximately $5.0 and $7.0 million in 1952 and 1953, respectively; dollar-wise, this was not too important a category of products, however. Other groups showing a substantial decline were inedible animals and animal products, and textile fibers and manufactures. The latter category had the greatest absolute decline. The category of products showing the greatest percentage-wise gain during the period was the miscellaneous category.[4] The greatest absolute increase was in the export of machinery and vehicles.

In summary, it can be said that there has been a slight increase in value of exports from 1951-53, with the exports of machinery and vehicles leading not only the increase, but also dominating the export trade during the entire period by a very large margin. The other half of the Michigan trade shield is the import side which is taken up in the following section.

C. Michigan Imports, General. The overall figure for Michigan's imports in 1953, as can be seen from Table IV, was $643.5 million. This compares with 1952's $612.4 million and $562.1 million for 1951. Thus, there was a steady rise in the value of Michigan's imports from 1951 to 1953. As for

---

[3]See Table III of this dissertation.

[4]This is true even after it is adjusted for the export items valued under $500 which were included in the category after July, 1953.

the individual categories, in 1953, wood and paper led with a value of $242.5 million, followed by metals and manufactures valued at $171.2 million, and machinery and vehicles, $82.9 million. Their respective percentages for the same period were 38, 27, and 13. In 1952, the three were ranked in a similar order, with respective values of $247.9 million, $120.5 million, and $115.8 million, while their percentages were 40, 20, and 19. Likewise in 1951, the same three classifications led in the same order with wood and paper imports valued at slightly more than $246.0 million comprising 40 percent of the total, metals and manufactures valued at $100.9 million and making up 18 percent, and machinery and vehicles amounting to approximately 18 percent with a value of $99.9 million.[5] The remaining eight categories, with slight variation, maintained their same order throughout the three year period. The only variation of particular significance was between edible animals and animal products, and chemicals and related products. The variation moved animals and animal products from sixth to eighth place, and vice versa for the chemicals and related category during the period from 1951 to 1952. The two categories maintained their respective 1952 positions in 1953. The reason for the above noted change, as can be seen from Table IV, was not due to a drop in the value of edible animals and animal product imports, but rather to a large increase in the value of chemical imports into Michigan in 1952 and especially in 1953.

---

[5]It should be noted that although the three groups maintained their respective positions during the three year period, there was a considerable change in the percentage share of the total imports of the second and third ranking categories.

TABLE IV

MICHIGAN IMPORTS BY COMMODITY CLASSIFICATION*
1951-52-53

Commodity Classification	1951 Rank	1951 % of total	1951 Value (in thousands of dollars)	1952 Rank	1952 % of total	1952 Value (in thousands of dollars)	1953 Rank	1953 % of total	1953 Value (in thousands of dollars)
Edible animals and animal products	6	2.8	15,802	8	2.5	15,168	8	2.4	15,268
Inedible animals and animal products	10	1.0	5,893	11	.3	1,956	11	.6	3,892
Vegetable food products and beverages	5	4.7	26,170	5	4.7	28,914	5	4.9	31,646
Inedible vegetable products	11	.9	5,314	9	1.5	9,074	10	1.0	6,373
Textile fibers and manufactures	9	1.3	7,429	10	1.3	7,899	9	1.1	6,762
Wood and paper	1	43.8	246,171	1	40.5	247,895	1	37.7	242,509
Nonmetallic minerals	4	5.4	30,276	4	5.4	32,822	4	5.1	33,077
Metals and manufactures	2	17.9	100,888	2	19.7	120,535	2	26.6	171,221
Machinery and vehicles	3	17.8	99,888	3	18.9	115,805	3	12.9	82,854
Chemicals and related products	8	2.1	11,637	6	2.8	16,860	6	4.7	30,273
Miscellaneous products	7	2.3	12,668	7	2.5	15,467	7	3.1	19,569
Total		100.	562,135		100.	612,396		100.	643,534

*Source: Unpublished Machine Tabulation Sheets IM 154: United States Imports for Immediate Consumption, United States Customs District of Entry by Commodity by Country of Origin, Schedule A Classification, U. S. Dept. of Commerce, Bureau of the Census, Foreign Trade Division, Washington, D. C., Monthly, 1951-53. Hereafter cited as Unpublished Machine Tabulation Sheets: IM 154.

The most changeable commodity categories, value-wise, have been inedible animals and animal products, inedible vegetable products, and machinery and vehicles. Of the three, the machinery and vehicle imports are the most significant because of their large dollar value.[6]

In summary, there are two main points to be noted from Michigan's import trade. First, that the largest part of the state's present day imports consist of three categories: wood and paper; metals and manufactures; and machinery and vehicles. The second point to be noted is that though Michigan has had a steady rise since 1951 in the total value of its import trade, the rise has been occasioned largely by an increase in its imports of two broad types of products, metals and manufactures, and chemicals. A more detailed analysis of import statistics, as well as export statistics, will take place in the following section where all eleven categories are examined independently.

---

[6] See Table IV, p. 64 of this study.

CHAPTER IV

A COMMODITY ANALYSIS OF MICHIGAN'S FOREIGN TRADE

In this portion of the study, Michigan's foreign trade in the eleven export and import commodity classifications, as set up by the Foreign Trade Division of the Bureau of the Census, and which were treated in a general fashion in chapter three, will be isolated and examined. In addition to an examination of the overall product categories, an attempt will also be made to determine the most important items within the product categories, and, likewise, to find how the values of the items making up the various categories have fluctuated during the three year period under study. The eleven commodity classifications which will be taken up in order as listed by the Foreign Trade Division of the Bureau of the Census are: edible animals and animal products; inedible animals and animal products; vegetable food products and beverages; inedible vegetable products; textile fibers and manufactures; wood and paper; nonmetallic minerals; metals and manufactures; machinery and vehicles; chemicals and related products; and miscellaneous products (Tables III and IV). Let us look first at Michigan's exports.

I. EXPORTS

Michigan's Exports of Edible Animals and Animal Products. Although the edible animals and animal products classification is not one of Michigan's largest categories of export, ranking from eighth to eleventh during the 1951-53 period for study, nevertheless, the export trade of this category had some interesting characteristics. It was pointed out earlier that the edible

animals and animal products category of exports had the largest percentage decline in value of any of the categories during the three year period. The dollar value of this grouping fell from nearly $27.5 million in 1951, to approximately $5.0 and $7.0 million in 1952 and 1953. As can be seen from the accompanying Table V, this decline was due to a large decrease in the export value of all three of the main items which are included in this category. In 1951, meat and meat products, edible animal products (almost exclusively lard) and dairy products exports were all close to $8.0 million each.[1] In 1952, however, exports of meat and meat products had fallen to approximately $2.0 million, exports of edible animal products had declined to $264.0 thousand, and the exports of dairy products had declined to $263.0 thousand. By 1953, the state's export value of meat and meat products had increased somewhat to a little over $4.0 million, but the export value of dairy products and edible animal products remained low.

The reason for the decline in the state's dollar value of meat and meat products exported was the tremendous reduction in Canada's importation of these items, especially in 1952. The exported value of these products to Canada fell off from $6.8 million in 1951, to $1.6 million in 1952; by 1953, however, the value had increased to approximately $4.0 million. In the case of lard and dairy products the decline in export value was due, almost exclusively, to a decrease in the exportation of these items to Great Britain.[2]

---

[1]See Table V, p. 68 of this study.

[2]See Great Britain country study, pp. 145-149 of this dissertation.

TABLE V*

DOLLAR VALUE OF MICHIGAN EXPORTS OF
EDIBLE ANIMALS AND ANIMAL PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Meat and meat products	7,113	1,907	4,090
Animal products, edible	8,741	264	132
Lard	8,700	264	21
Other (also stock for the most part)	41	--	111
Dairy products	8,144	263	254
Others	3,466	2,532	2,742
Total	27,464	4,966	7,218

*Source: Unpublished Machine Tabulation Sheets: EM 563.

On close inspection one notices that though this category of exports is not one of the large ones in our foreign trade, there are several items in it which are exported in considerable amounts, namely, meat and meat products, lard, and dairy products.

Michigan's Exports of Inedible Animals and Animal Products. The dollar value of exports in the inedible animals and animal products category ranked near the bottom for the entire 1951-53 period. Strangely enough, at the same time that the inedible animals and animal products classification has had about a 40 percent decline in value from 1951 to 1952-53, it has gained in the rankings from eleventh to tenth, the reason being that while there has been a considerable decline in the shipments of inedible animals and animal products, the exports in the edible animals and animal products category, as described above, have declined even more.

The overall value of exports in the inedible animals and animal products classification was around $12.6 million in 1953; however, as mentioned above there was a sharp decline in 1952 to around $7.5 million. The 1953 export value was almost the same as in 1952. In percentage terms exports in this category have been relatively insignificant with a value approximating 1 percent of the total.

As usual, the most interesting aspects of the exports of inedible animals and animal products show up when we look at individual items. This category is composed largely of two items: raw hides and skins; and furs and manufactures. These two items have made up, for the most part, over one-half of the total exports of the category. From Table VI it can be observed that of the two, raw hides and skins has been considerably more

TABLE VI*

DOLLAR VALUE OF MICHIGAN EXPORTS OF
INEDIBLE ANIMALS AND ANIMAL PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Hides and skins, raw except furs	5,267	3,684	4,757
Furs and manufactures	987	1,188	918
Others	6,389	2,592	1,800
Total	12,643	7,464	7,475

*Source: Unpublished Machine Tabulation Sheets: EM 563.

important, exceeding furs and manufactures in dollar value by about four-fold during the 1951 to 1953 period.

The important thing to remember is that though the export value of the category is small, the values of raw hides and skins, and furs and manufactures are fairly high averaging around $4.0 million and $1.0 million annually. In other words, even though this category is not too important, percentage-wise, in our total export trade, for the people engaged in the raising and trapping of fur-bearing animals it is of considerable importance.

Michigan's Exports of Vegetable Food Products and Beverages. The category of exports, vegetable food products and beverages, has been of considerable significance in Michigan's foreign trade for the three years under question. The total value of exports in this category amounted to over $50.0 million per year in all three years. In percentage terms it made up approximately 6 percent of the export trade. Its value ranking among the eleven export classifications has fluctuated; in 1951, its ranking was fifth, in 1952, fourth, and sixth in 1953.

The main products in this general category have, for the most part, consisted of fresh vegetables, subtropical fruits, and fresh fruits. The values of these commodities, as observable from Table VII, have in the case of subtropical fruits averaged around $14.0 million a year, for fresh vegetables around $12.0 million, and for fresh fruits about $8.5 million. A fourth item which Michigan exported in considerable quantity which fell into this category was corn. The export value of corn approximated $2.0 million in 1951 and 1952, but fell to less than $1.0 million in 1953.

One of the salient points to be observed about this general category

TABLE VII*

DOLLAR VALUE OF MICHIGAN EXPORTS OF VEGETABLE FOOD PRODUCTS AND BEVERAGES (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Subtropical fruits	14,073	14,278	14,645
Vegetables, fresh	10,510	15,024	12,561
Other fresh fruits	6,579	9,295	9,514
Corn, except seed	2,030	2,463	847
Others	20,937	24,211	26,626
Total	54,129	65,271	64,193

*Source: Unpublished Machine Tabulation Sheets: EM 563.

of exports is that the main item of export, subtropical fruit, is not grown in the state. In other words, in this case, Michigan is serving as an export outlet for fruits from other states. In the case of fresh vegetables, and other fruit, however, though undoubtedly a goodly portion of them come from other areas, a large part of them also emanate from Michigan.[3]

Michigan's Exports of Inedible Vegetable Products. The products categorized as inedible vegetable products, though not too auspicious in Michigan's overall export picture, nevertheless, had several interesting characteristics.

The total export value of the items in this category amounted to between $20.0 and $25.0 million per year for the three year period under study. In rank, the total value of the products fluctuated from tenth in 1951, to eighth in 1952, to ninth in 1953. The percentage of the value of the items never amounted to as much as 3 percent of the total during the three year period.

The leading export item in the inedible vegetable products category was vegetable oils, with a total value of over $6.0 million per year in all of the years considered. The main types of vegetable oils which were exported from the state were cottonseed and soybean. Undoubtedly, a considerable portion of the export value of cottonseed oil and soybean oil came from outstate, nevertheless, large amounts of these two oils are processed within the state.[4]

---

[3]See pp. 30-34 of this study for an analysis of Michigan's fruit and vegetable production.

[4]Census of Manufactures: 1947, Vol 3, p. 304.

TABLE VIII*

DOLLAR VALUE OF MICHIGAN EXPORTS OF INEDIBLE VEGETABLE PRODUCTS, EXCEPT FIBERS AND WOOD (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Vegetable oils	6,436	8,199	7,636
Tires and tire casings	806	2,652	1,879
Naval stores, gums and resins	1,837	1,325	1,339
Grass, field and garden seeds	1,969	1,529	762
Hops	825	635	987
Others	10,899	11,209	8,741
Total	22,772	25,549	21,344

*Source: Unpublished Machine Tabulation Sheets: EM 563.

Other items in this category, as can be seen from Table VIII, which were consistently exported in sizeable quantities were: tires and tire casings; grass, field and garden seeds; naval stores; gums and resins; and hops. Thus, once again it is evident that though the category itself is not too large there are several items in it which are of considerable magnitude and which bear observation.

Michigan's Exports of Textile Fibers and Manufactures. The total export value of the products in the textile fibers and manufactures category showed considerable fluctuation during the 1951-53 period. Whereas it had had a value in 1951 of $90.6 million, and a ranking of fourth, by 1953, it had dropped to the seventh ranking commodity classification with a total value of $47.3 million. Percentage-wise, it dropped from a high of 9.3 percent in 1951 to a mere 4.4 percent in 1953.

What caused this precipitous decline? The answer is summed up in one statement, the decline in the export of raw cotton to Canada. For instance, in 1951, the total value of raw cotton exported through Michigan was $80.1 million, whereas in 1952 and 1953, respectively, it was $48.4 million and $38.3 million. Thus, it is easy to see why the total value of the export category, textile fibers and manufactures, declined during the 1951-53 period.

Other than raw cotton, there is very little else in the textile fibers and manufactures category which is exported by Michigan. The only other item worthy of mention was cotton pulp which averaged around $.6 million per year for the three year period.

Michigan's Exports of Wood and Paper. The products in this category

though the most important in Michigan's import trade, played a minor role in the state's export structure. The total value of the items in this classification for the three years were $23.0 million, $21.9 million, and $23.0 million respectively. In rank, the value of the items during the same period balanced between eighth and ninth position. As for the share of the total export trade for which these items were responsible, it was a minuscule 2 percent.

Some of the products of this category which were exported, however, amounted to sizeable proportions. The two main products, as far as Michigan's interests were concerned, were sawmill products, and furniture. The export of sawmill products averaged more than $10.0 million per year. Without a doubt, a good deal of this product came from Michigan forests and mills. Of further significance is the fact that the export value of this product was at a stabilized level, showing that there was a steady market for approximately $10.0 million worth of output of Michigan's sawmill industry.

The other item within this category which Michigan exported to some extent was furniture. Though most of Michigan's furniture is sold domestically, it is important to note that approximately $750.0 thousand worth a year is sold abroad. In fact, as can be seen from Table IX, in both 1952 and 1953, foreign sales were over the $800.0 thousand mark.

Michigan's Exports of Nonmetallic Minerals. One of Michigan's leading export categories was nonmetallic minerals. The total value of the items in this category ranked second or third in all years considered. In 1951, with 11 percent of the total value of the state's export trade the value of

TABLE IX*

DOLLAR VALUE OF MICHIGAN EXPORTS OF WOOD AND PAPER
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Sawmill products	10,070	10,362	9,656
Furniture	589	815	927
Others	12,357	10,713	12,378
Total	23,016	21,890	22,961

*Source: Unpublished Machine Tabulation Sheets: EM 563.

the category ranked second. In 1952, the dollar value of the products in the category dropped from $107.0 million to $99.3 million, thereby dropping the category down to the third ranking position with a percentage of 10.1. In 1953, the dollar value of products of the category still ranked third, even though the value of the category had declined to $94.0 million and the category's percentage of the total was only 8.8.

Within the nonmetallic minerals category there were several items which loomed very large in the Michigan export picture while there were still others which were exported to a considerable extent. The two leading items, which together comprised nearly 50 percent of the total of the category for the three year period, were bituminous coal and crude petroleum. During the period, however, there was a considerable decline in both of the items, accounting for the decline in the total value of the category. Whereas the items were $29.1 million and $30.5 million in 1951, respectively, they were $25.0 and $22.5 million in 1952, and had declined to $22.1 million and $18.3 million by 1953.

By 1953, the third most lucrative export product in the nonmetallic minerals category was glass and glass products. This item rose from an export value of $4.3 million in 1951 to $11.4 million in 1953, one of the most sizeable gains in the whole export area. Another substantial export item was refined oils. This item, also, in addition to its size, showed a sizeable gain in value over the three year period, going from a 1951 value of $4.9 million to $7.1 million in 1953. Some of the other items, though not showing gains of any magnitude, but nevertheless of significant value, were abrasives and abrasive products, asbestos and asbestos manufactures,

TABLE X*

DOLLAR VALUE OF MICHIGAN EXPORTS OF NONMETALLIC MINERALS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Bituminous coal	29,067	24,985	22,068
Crude petroleum	30,517	22,493	18,261
Coke, except petroleum coke	4,233	4,209	3,550
Refined oils	4,852	6,967	7,105
Glass and products	4,316	6,413	11,393
Petroleum coke	6,228	5,196	4,880
Abrasives and abrasive products	1,671	1,654	1,636
Asbestos and asbestos manufactures	640	877	785
Sulfur	770	2,013	561
Salt	995	1,071	690
Others	23,753	23,408	23,092
Total	107,042	99,286	94,021

*Source: Unpublished Machine Tabulation Sheets: EM 563.

sulfur, and salt.[5] In addition, there were several items other than bituminous coal and crude petroleum, of large export value, which had substantial declines in value during the era in question. These items were mainly: coke, except petroleum coke, from $4.2 to $3.6 million; and petroleum coke from $6.2 million to $4.9 million.

The important thing to note about the nonmetallic minerals category is that though it is one of Michigan's leading classifications, a large portion of the total export value does not come from products emanating in Michigan. A mere glance at the value of bituminous coal and crude petroleum exported shows this. Nevertheless, there are many items of considerable value in the category which do indicate either Michigan origin or Michigan processing, such as glass products, abrasives and abrasive products, asbestos and asbestos manufactures, sulfur, and salt.[6]

Michigan's Exports of Metals and Manufactures. One of Michigan's largest export product categories in regard to total value is metals and manufactures. This product category ranked second in both 1952 and 1953, having gained a notch over its 1951 position.

In addition to its consistent high ranking, this category of products yearly dollar value and percent of the total value has not fluctuated too greatly. The dollar value of the products in this category represented a high of 11.1 percent in 1952 and a low of 9.2 percent in 1953 of the total

---

[5]The exact magnitude of these items can be seen from Table X, p. 79 of this study.

[6]See Table X, p. 79 of this dissertation.

value of Michigan exports. The maximum and minimum total values for the products in the metals and manufactures category were $108.2 million and $98.1 million, again reached in 1952 and 1953 respectively. The anomaly of the above statements is that while the total value of the products in the category was decreasing and while the category's percent of the total was also decreasing, the relative ranking of the category increased. There are two reasons for this phenomenon. First, the machinery and vehicles category, which is discussed in the following section, has been taking a larger share of the export trade, thus leaving smaller percentage shares for the other ten categories. Second, the nonmetallic minerals category, which formerly held second rank, has had a larger decline than the minerals and manufacturing category.[7]

Looking at Table XI, which gives a breakdown of the leading products which made up the state's exports of metals and manufactures, one can see why these products constitute such a large proportion of the state's trade.

Though the importance of particular items has fluctuated, one can, nevertheless, pick out with little difficulty the main products of Michigan's export trade in metals and manufactures. The leading items have been: hardware; iron ore; central heating equipment; tubular products and fittings; castings and forgings; tools; and iron and steel rods. Looking again at Table XI, it will be noticed that with one exception Michigan exported each of the above listed items to the extent of $3.0 million or more per year for the three years in question.[8] An analysis of these

---

[7]See Table III, p. 61 of this study.

[8]The one exception was hardware, which had an export value of $2.5 million in 1951.

TABLE XI*

DOLLAR VALUE OF MICHIGAN EXPORTS OF METALS AND MANUFACTURES, EXCEPT MACHINERY AND VEHICLES
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Iron ore	8,452	8,025	6,704
Hardware	2,517	7,174	7,746
Central heating equipment, except electric	4,473	4,805	6,618
Tubular products and fittings	5,908	4,552	4,409
Castings and forgings	3,717	5,963	3,948
Tools	3,656	4,515	3,807
Iron and steel bars and rods	4,151	5,531	3,319
Nickel	955	1,639	2,891
Aluminum	3,960	2,648	2,442
Structural iron and steel	3,530	1,890	1,949
Steel ingots, etc.	2,389	4,755	1,837
Copper ore	389	1,094	1,577
Iron and steel scrap	1,209	2,237	1,044
Zinc	1,233	1,004	896
Tin cans	726	1,033	820
Chains and sprockets	807	852	668
Others	55,985	50,471	47,407
Total	104,057	108,188	98,082

*Source: Unpublished Machine Tabulation Sheets: EM 563.

items shows also that most of them are Michigan produced and processed, and thus reflect not only the degrees of Michigan's trade in them, but also the extent of Michigan's production of the items.

In addition to the above enumerated items, several others have been exported in considerable amounts. Such items as nickel, aluminum, structural iron and steel, steel ingots and blooms, and iron and steel scrap, have had consistent export values of between $1.0 million and $2.0 million per annum. Likewise, though of still less importance dollar-wise, such items as copper ore, zinc, tin cans, and chains and sprockets, have had export values hovering around the $1.0 million mark during the period in question.

Michigan's Exports of Machinery and Vehicles. The machinery and vehicles category was far and away the leading category of products, export-wise, that Michigan had during the three year period under study. It has already been pointed out that the proportion of this category to the total value of exports for Michigan approximated 50 percent during each of the three years under surveillance. In the discussion that follows it will be our purpose to point out in detail the main items in this category. This emphasis is important because of the high dollar value of these products.

It would take little imagination on the part of anyone to guess which Michigan export item exceeded all others in value. The largest single item, as expected, was automotive equipment. This grouping in itself had twice the dollar value of any one other entire category of products. In 1953, when the export value of automotive equipment totalled $243.1 million, it, itself, made up 23 percent of the total export trade. Thus, if any one item in Michigan's export picture had to be singled out as being most significant,

undoubtedly, one would have to choose automotive equipment.

Though automotive equipment stood head and shoulders above all other export items, there are still many other products in the machinery and vehicles classification which are of great export significance to Michigan. In fact, most of the main items of Michigan's foreign trade, as well as Michigan's industry, are included in the machinery and vehicles category, which, even excluding automobile equipment, had an export value of approximately $250.0 million during each of the three years under study.

From 1951 to 1953, the export of construction, mining, and excavating machinery was one of the more important items in the Michigan trade picture. In 1951, the export value of this product amounted to $28.6 million, in 1952, $39.7 million, and $37.8 million in 1953. Another main product was power driven metal-working machinery. This item, though only $15.8 million in 1951, climbed to $25.9 million in 1952, and by 1953, was up to $35.8 million. The export value of electric refrigerators and parts, as well as air conditioning and refrigeration equipment, was also high. These two product groupings together had export values for the three years respectively of $18.0 million, $29.7 million, and $34.2 million. The export value of internal combustion engines approximated $20.0 million in each of the years, 1951-52-53.

With respect to the sale of agricultural equipment in foreign markets, wheel type tractors, and their parts and accessories were most important. Their respective export values for the three year period were $34.0, $27.9, and $26.7 millions. Other agricultural machinery exports of considerable dollar magnitude were cultivating implements, harvesting machinery, tracklaying

tractors and parts and accessories, and parts and attachments especially fabricated for agricultural machinery and outfits.[9]

Still other items important to Michigan's trade and industry, which were exported in substantial quantities, were:[10] electrical appliances and other electrical apparatus; bookkeeping and calculating machinery; ball and roller bearings and balls and rollers; transmission and distributor apparatus; portable electric tools; steam engines, boilers and accessories; woodworking machines and parts; cash registers; printing and bookbinding machinery; railway cars and accessories; and mechanic and hydraulic (except vehicular) power and transmission systems.[11]

In analyzing the machinery and vehicles category one finds several interesting phenomena. First and foremost, and as one would expect, this category is far and away the most important, dollar-wise, of all of the product categories. Second, of the items which comprise this high export value, the commodity that stands above all others is automotive equipment. Third, by looking at the items, other than automotive equipment, which were exported in mountainous proportions, one is well aware that Michigan is not a one industry state. A fourth point of significance is that the machinery and vehicles category had, undoubtedly, a larger part of the export items comprising it originating from Michigan's industry than any other product classification.

---

[9]See Table XII for export values of each item.

[10]All of the items listed in this paragraph had an average export value of at least $1.0 million per year for the 1951 to 1953 period.

[11]The yearly value as well as growth, decline, or stability of the items can be seen from Table XII.

TABLE XII*

DOLLAR VALUE OF MICHIGAN EXPORTS OF
MACHINERY AND VEHICLES
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Automotive equipment	187,124	203,118	243,104
Motor trucks and truck chassis including trucks and trailors	6,880	7,261	6,522
Passenger cars and chassis	25,392	30,126	51,325
Parts for autos, trucks and busses	150,822	161,060	179,340
Service appliances and specially fabricated parts	3,006	1,426	1,554
Motor busses and bus chassis	484	589	623
Others	---	2,656	3,740
Construction, excavating and mining equipment	28,653	39,697	37,886
Power driven metal-working machinery	15,835	25,878	35,833
Electric refrigerators and parts and airconditioners and refrigeration equipment	18,046	29,667	34,154
Wheel type tractors, parts and accessories	34,027	27,889	26,663
Electrical appliances and other electrical equipment	13,260	17,291	23,813
Internal combustion engines	21,991	21,184	19,866
Tracklaying tractors, parts, and accessories	12,589	13,878	15,730
Parts and attachments, (NEC), specially fabricated for agricultural machinery and outfits	9,644	11,081	9,261
Accounting, bookkeeping and calculating machinery	2,824	7,605	7,796
Motors, starters and controllers	8,451	7,125	7,055
Railway cars and accessories	2,500	3,548	5,630
Telegraph and telephone apparatus	4,234	4,635	5,295
Ball and roller bearings, and balls and rollers	5,375	6,017	4,449
Harvesting machinery (not parts)	5,172	4,622	4,171
Power transmission systems, mechanic and hydraulic (except vehicle)	na	4,482	3,903

*Source: Unpublished Machine Tabulation Sheets: EM 563.

TABLE XII* (continued)

DOLLAR VALUE OF MICHIGAN EXPORTS OF
MACHINERY AND VEHICLES
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Woodworking machines and parts	1,917	2,405	2,941
Printing and bookbinding	2,577	1,280	2,723
Iron or steel body valves and parts for steam, water, oil, and gas	1,985	3,523	2,712
Transmission and distributor apparatus	2,108	1,957	2,414
Portable electric tools	924	1,416	2,372
Cultivating implements (not parts)	2,705	2,529	2,322
Steam engines, boilers and accessories	2,507	1,534	2,310
Industrial manufacturing and service industries machines and parts	6,660	2,373	2,064
Civilian aircraft	198	231	1,955
Cash registers	1,604	754	1,830
Bottling machinery and parts	780	544	1,619
Others	55,399	48,696	53,423
Total	449,089	494,959	563,295

*Source: Unpublished Machine Tabulation Sheets: EM563.

Michigan's Exports of Chemicals and Related Products. Michigan's exports of chemicals and related products were of considerable size during the 1951-53 period. The lowest exported value of the items in this category was in 1951, when it totalled $51.7 million, and the highest was $66.0 million in 1953. The above exported values were 5.3 percent and 6.2 percent of the total dollar value for Michigan exports during the same period. A further point of interest in regard to the total export values for the category is that they showed a steady increase over the three year period of study. In 1952, the exported value of the products of the category was $60.9 million, a rise of $9.2 million from 1951, and by 1953, the total exported value of chemicals and related products had advanced $5.1 million over its 1952 figure up to $66.0 million.

Inspection of Table XIII shows that the rather broad grouping, organic chemicals not of coal tar origin, in all three years under study, was the most important item of the chemical and related products category. Beginning with an export value of $7.5 million in 1951, the value of this grouping rose to $9.8 million in 1952, and by 1953, the export value of organic chemicals not of coal tar origin had moved beyond the $10.0 million mark. Other export items of considerable dollar magnitude over the three year period were: chemical pigments; coal tar products; and synthetic gums and resins. These three items had yearly export values of over $5.0 million.

Searching still further in the chemicals and related products category one sees that there were several additional items which had considerable export significance. In this group could be listed such items as medicinal and pharmaceutical preparations, chemical specialty compounds, alcohols, and

TABLE XIII*

DOLLAR VALUE OF MICHIGAN EXPORTS OF
CHEMICALS AND RELATED PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Organic chemicals, not of coal tar origin	7,460	9,799	10,055
Chemical pigments	6,856	6,313	6,718
Coal tar products	5,395	5,999	6,181
Synthetic gums and resins	5,347	5,558	7,949
Alcohols	1,665	5,409	3,522
Medicinal and pharmaceutical preparations	5,199	5,045	4,808
Chemical specialty compounds	2,724	3,273	4,958
Potassic fertilizer materials	2,393	2,216	2,369
Nitrogenous fertilizer material	1,259	1,275	1,592
Others	13,376	16,016	17,755
Total	51,674	60,903	66,007

*Source: Unpublished Machine Tabulation Sheets: EM 563.

potassic and nitrogenous fertilizer materials. Each of these four mentioned items had yearly export values exceeding $1.2 million.

In summary, there are two main points to be noted in regard to the export trade in chemicals and related products; it is of sizeable amount, and it has grown.

Michigan's Exports of Miscellaneous Products. The miscellaneous category is probably the most difficult of the eleven product categories to analyze. The reason for the difficulty is that it is a catchall category and thus includes a large number of diverse items, most of which do not have a large export value. In addition, starting in July, 1953, all export shipments having a value of less than five hundred dollars were reported in this category, rather than in the category in which they would otherwise fall. This, then, naturally accounts for a large part of the increase in value in the category from 1951 to 1953.

In spite of what has been said above, there are, however, a few items in the category of sizeable magnitude. The leading export product in all three years was current periodicals. This item had an export value in each year of more than $6.0 million. Books and pamphlets, phonographs and parts, plastic products, not especially fabricated for machinery or equipment, clocks, watches and parts, and current newspapers were other items in the miscellaneous category which were exported in some quantity during the period.[12]

Looking at the overall nature of the category one sees that it showed

---

[12]The exact amounts of each of the items can be found in Table XIV.

TABLE XIV*

DOLLAR VALUE OF MICHIGAN EXPORTS OF
MISCELLANEOUS PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Periodicals	6,881	7,182	7,366
Books and pamphlets	2,528	3,096	2,927
Phonograph and parts	1,833	1,301	2,416
Manufactures, plastic products not especially fabricated for machinery or equipment	465	686	596
Clocks, watches and parts	505	570	837
Newspapers, current	304	298	312
Others	16,343	18,043	61,790
Total	28,859	31,176	76,244

*Source: Unpublished Machine Tabulation Sheets: EM 563.

tremendous growth during the 1951-53 period. As mentioned above, however, a considerable amount of the growth occurred after July 1953, when all export shipments valued at less than $500 were included. Excluding this false growth of approximately $20.0 million between 1952 and 1953, there was, however, still substantial increase during the period under study. In 1951, the total export value of the category was $28.9 million; in 1952, $31.2 million; and in 1953, over $56.0 million.[13] Consequently, even excluding the shipments valued at $500 and less, the miscellaneous category had the greatest percentage increase during the 1951-53 period of any of the eleven commodity classifications.

II. IMPORTS

Michigan's Imports of Edible Animals and Animal Products. The edible animals and animal products category, though not one of Michigan's leading import categories, was, nevertheless, of considerable magnitude during the 1951-52-53 period. The import value of the products in the category exceeded $15.0 million in all three years considered. The stability of the total dollar value of the products which make up this category is also noteworthy.[14] As a percentage of the total value of the state's imports, the

---

[13] As can be seen from Table XIV, this $56.0 million does not include the $20.0 million worth of export shipments valued at less than $500.

[14] See Table XV. In conjunction with this, however, one will note that though the import value of the general category was most stable, the individual items which comprised it were most unstable. Thus, one is able to see the value of breaking the general categories down into their component parts and analyzing rather than making a mere analysis of the general category. Cf. W. N. Breswick, "Texas' Stake in Foreign Trade", Unpublished Ph.D. dissertation, University of Texas, 1953.

value of Michigan's edible animals and animal products imports was 2.8 percent in 1951, 2.5 percent in 1952, and 2.4 percent in 1953. In rank, the value of the products fluctuated from sixth in 1951 to eighth in 1952 and 1953. In 1952, the edible animals and animal products category changed positions with the chemicals and related products category and the two categories remained in that order through 1953.

A perusal of Table XV shows that there are several items included in the edible animals and animal products category that Michigan imported in sizeable amounts during the 1951 to 1953 period. The two main products, value-wise, that Michigan imported in the edible animals and animal products category were meat products and fish and fish products. Of the two, fish and fish products was the larger, having an import value of at least $7.5 million for each of the three years considered. The main import items within the fish and fish products grouping were: fresh or frozen fish; and pickled or salted fish.

Meat products, the other of the two main import sub-categories contained within the edible animals and animal products category, had import values of $3.4 million, $4.2 million, and $5.9 million, respectively, for the three year period. Thus, the meat products import value showed sizeable growth over the period. Within the meat products sub-category, the main imported item was prepared or preserved pork, with imported values of $1.4 million, $3.4 million, and $4.9 million for the three respective years.

Three other sub-categories within the general edible animals and animal products category, as can be seen from Table XV, had sizeable import values during the period. These were edible animals, dairy products, and

shellfish. One will also notice from the table that import values for edible animals as well as for dairy products fluctuated tremendously during the three year period. In the case of animals it was due almost exclusively to the drop in the number of cattle Michigan imported from Canada in 1952 compared with 1951. Likewise for dairy products, the change, though in this case an increase in value, was due to an increase in the amount of dairy products imported from Canada.[15] The other sub-item, shellfish and products, had a relatively stable import value over the period, increasing gradually from a value of $217.0 thousand in 1951 to $251.0 thousand in 1953.

Thus, the edible animals and animal products category reflected three key points. First, though there were considerable fluctuations in value within the category, the overall value of the category remained relatively stable during the period. Second, though the overall value of the products of the category was not too immense, there were several items, such as cattle, prepared or preserved pork, and fresh or frozen fish, which were imported into Michigan in substantial quantities in all three years. The last point is that in addition to those items which came into Michigan in large quantities in all of the years considered, there were some which were imported in considerable amounts in only one of the years. This was true of fresh chilled or frozen beef, live poultry, and dairy products. One would guess that the latter point occurred when Michigan or some of the adjoining states were in short supply and thus had to rely on foreign sources to satisfy their ever present demand.

---

[15]See Canada country study, pp. 140-142 of this dissertation.

TABLE XV*

DOLLAR VALUE OF MICHIGAN IMPORTS OF
EDIBLE ANIMALS AND ANIMAL PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Animals, edible except for breeding	3,470.2	847.1	723.2
Cattle	3,362.1	233.9	589.5
Hogs	.7	.0	79.1
Poultry (live)	48.9	611.6	43.2
Others	58.5	1.6	11.4
Meat products	3,399.8	4,204.2	5,897.4
Beef (fresh, chilled or frozen)	567.5	1.6	39.3
Pork (fresh, chilled or frozen)	218.8	76.2	299.5
Pork (prepared or preserved)	1,402.8	3,391.2	4,921.1
Others	1,210.8	735.2	637.5
Dairy products	81.1	1,223.9	210.3
Fish and fish products, except shellfish	8,073.9	8,196.7	7,479.8
Fresh or frozen	6,689.8	6,882.2	6,257.4
In oil or in oil and other substances	115.1	81.9	148.1
Not in oil or in oil and other substances in other containers	51.9	63.7	68.2
Pickled and salted	740.0	742.0	626.3
Smoked or kippered	294.8	264.7	150.2
Others	216.3	162.2	229.6
Shellfish and products	217.0	249.5	251.1
Others	560.0	447.0	706.2
Total	15,802.0	15,168.0	15,268.0

*Source: Unpublished Machine Tabulation Sheets: IM 154.

Michigan's Imports of Inedible Animals and Animal Products. Probably the least important commodity classification in Michigan's import edifice was inedible animals and animal products. The total value of the products in this category was less than $6.0 million per year in each of the 1951 to 1953 years. During the period, in addition to being the category of products with the lowest total dollar value, the value of the category also fluctuated a great deal. For example, in 1951, the value of the products in the category was $5.9 million as contrasted with a value in 1952 of approximately $2.0 million and in 1953, of $3.9 million.[16] The primary reason for the large value fluctuation, as can be seen from Table XVI, was due to the tremendous decline in value of Michigan's imports of hides and skins.

The main products in the inedible animals and animal products category were, as can be seen from the table: hides and skins; leather; leather, rawhide and parchment manufactures; and inedible animal and fish oils.

In summary, one would say that the inedible animals and animal products category, with the exception of the items, hides and skins, and leather and manufactures, was of relatively little import significance to Michigan.

Michigan's Imports of Vegetable Food Products and Beverages. One of the most important commodity classifications in Michigan's import structure

---

[16] See Table XVI, p. 97 of this study.

TABLE XVI*

DOLLAR VALUE OF MICHIGAN IMPORTS OF INEDIBLE ANIMALS AND ANIMAL PRODUCTS (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Hides and skins, except furs	2,219.4	693.0	493.0
Leather	486.5	169.9	257.3
Leather, rawhide and parchment manufactures	297.2	468.2	410.1
Furs and manufactures	20.0	2.5	7.2
Animal and fish oils, and grease, inedible	46.7	64.6	90.2
Cod oil and cod liver oil	8.1	7.0	9.2
Others	2,814.6	551.0	2,624.8
Total	5,892.5	1,956.2	3,891.8

*Source: Unpublished Machine Tabulation Sheets: IM 154.

was vegetable food products and beverages. This classification had a dollar value in all three years under consideration of over $25.0 million. In rank, it consistently held fifth place; however, by 1953, it was being closely pressed for that position by chemicals and related products. The products in the vegetable food products and beverages category also showed a great deal of stability in value over the period, though there was a slight upward trend in the value from 1951 to 1953.

The import value of the vegetable food products and beverages category was made up largely from the importation of five main sub-classifications. One of these sub-classifications, however, completely dominated the others. This leading sub-classification was beverages, which consisted, for the most part, of whiskey. In all of the years considered, this one item, whiskey, made up nearly half of the total import value of the entire classification.[17] One other beverage imported into Michigan in sizeable amounts, especially in 1953, was malt liquors. The imported value of malt liquors rose from $363.8 thousand in 1951, to $817.7 thousand in 1952, up to $1.5 million in 1953.

The other four sub-items which comprised the vegetable food products and beverages category were: grains and preparations, which had values exceeding $2.0 million in each of the years; fodders and feeds, whose values declined considerably in 1952 and 1953 from a $1.0 million high in 1951; vegetables and preparations, whose $2.9 million and $3.0 million values in 1951 and 1952 declined to $1.6 million in 1953; and fruits and preparations,

---

[17]See Table XVII, p. 99 of this study.

TABLE XVII*

DOLLAR VALUE OF MICHIGAN IMPORTS OF VEGETABLE FOOD PRODUCTS AND BEVERAGES (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Grains and preparations	2,088.6	2,218.4	2,448.9
Fodders and feeds (NES)	1,018.8	229.8	300.5
Vegetables and preparations	2,904.9	2,951.6	1,564.7
Turnips and rutabagas	989.2	943.2	562.0
Tomatoes (natural state)	73.5	164.9	135.1
Vegetables, fresh (NES)	432.5	446.8	449.1
Cabbage	24.4	59.0	21.5
Celery	4.2	18.4	4.8
Fruits and preparations	2,746.4	2,117.9	2,472.2
Berries, natural or in brine	1,460.5	965.4	1,357.9
Maple sugar and sirup	459.0	676.2	747.3
Beverages	16,786.0	20,578.8	23,324.0
Scotch whiskey	406.6	626.8	823.1
Other whiskey	10,114.6	19,056.0	20,799.5
Malt liquor	363.8	566.5	1,228.6
Other	625.4	817.7	1,530.4
Total	26,170.1	28,914.2	31,645.7

*Source: Unpublished Machine Tabulation Sheets: IM 154.

which had values in 1951, 1952, and 1953, respectively, of $2.7 million, $2.1 million, and $2.5 million.

In summarizing this commodity classification two main points stand out. First, the import value of the classification, which is fairly substantial, is influenced by importation of one item, namely, whiskey. Second, the relative stability of the dollar value of this category is due to the stability of the various sub-classifications which comprise it, and not due to a large gain in one sub-classification offsetting a large decline in another. This is in contrast, the reader will remember, to the stability of the classification, edible animals and animal products.

Michigan's Imports of Inedible Vegetable Products. With the exception of the inedible animals and animal products classification the products which made up the inedible vegetable products category had the lowest dollar value of imports of any of the eleven import classifications. The value of the products in the inedible vegetable category ranked eleventh in 1951, ninth in 1952, and tenth in 1953. Percentage-wise, the total value of the classification amounted to approximately 1 percent of the total value of imports in all three years being studied. The yearly respective values for the products making up the category were, $5.3 million, $9.1 million, and $6.4 million.

The entire category, as Table XVIII makes clear, consisted entirely of the importation of one main type of product. This commodity was rubber and allied gums and manufactures. The import values of this commodity were $3.7 million in 1951, $7.3 million in 1952, and $4.4 million in 1953. Thus it can be said that the change in the importation values of rubber and allied

TABLE XVIII*

DOLLAR VALUE OF MICHIGAN IMPORTS OF
INEDIBLE VEGETABLE PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Rubber and allied gums and manufactures	3,661.8	7,284.0	4,357.1
Scrap and reclaimed rubber	121.5	80.3	47.7
Naval stores, gums and resins	33.2	21.0	19.2
Others	1,619.2	1,768.8	1,996.7
Total	5,314.2	9,073.8	6,373.0

*Source: Unpublished Machine Tabulation Sheets: IM 154.

gums and manufactures also accounted for the rise and decline in the value of the total category.

Thus, with the exception of rubber and allied gums and manufactures, this category was of little import significance to Michigan.

Michigan's Imports of Textile Fibers and Manufactures. Another category of relatively insignificant import value to Michigan was textile fibers and manufactures. The total import value of the products in this category never exceeded $8.0 million in any of the years observed, nor did its percent of the total surpass 1.5 percent. Nevertheless, within this category there were several items which Michigan imported to a considerable extent. The largest sub-item within this category was the classification, other vegetable fibers and materials. Breaking this sub-category down, one finds three main commodities, namely, binding twine, bailer twine, and cord and twine.

Two other items from the textile fibers and manufactures classification, which were of sufficient value to be worthy of note were: manufactured flax, hemp and ramie; and animal hair.[18]

Michigan's Imports of Wood and Paper. The wood and paper classification was to the Michigan import trade what the machinery and vehicle category was to the export group. The products which comprised the wood and paper category maintained a value of over $240.0 million in each of the 1951 to 1953 years. At no time was the wood and paper classification challenged for its position as the leading import category. Percentage-wise,

---

[18]See Table XIX, p. 103, for the specific values of items and subcategories.

TABLE XIX*

DOLLAR VALUE OF MICHIGAN IMPORTS OF
TEXTILE FIBERS AND MANUFACTURES
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Flax, hemp and ramie, and manufactures	221.9	72.8	83.9
Unmanufactured	23.0	8.5	4.2
Manufactured	260.9	64.3	79.7
Other vegetable fibers and materials	5,612.0	6,477.9	5,771.3
Binding twine	4,109.5	4,063.0	4,263.3
Bailer twine	323.2	2,352.9	1,472.7
Cords and twines	1,075.3	1.6	4.4
Hair and manufactures	230.7	117.3	63.4
Animal hair	230.4	117.3	63.4
Others	1,364.4	1,230.8	843.7
Total	7,429.0	7,898.8	6,762.3

*Source: Unpublished Machine Tabulation Sheets: IM 154.

the classification accounted for 43.8 percent of the total value of imports in 1951, 40.5 percent in 1952, and 37.7 percent in 1953.

There were two main sub-categories which made up the general classification, wood and paper. These sub-categories were paper base stocks, and paper manufactures. Of the two, the paper manufactures grouping was the larger, expanding from a value of $121.1 million in 1951, to $132.5 million in 1952, and to $135.4 million in 1953. Within the paper manufactures grouping the product which dominated all others was standard newsprint paper. This item, standard newsprint paper, had import values for the respective 1951 to 1953 years of $114.8 million, $127.4 million, and $130.6 million.

The other sub-category mentioned above, paper base stocks, not only had a smaller total value than the paper manufactures grouping, but it also showed a decline in value over the three year period. The dollar value of the paper base stocks grouping declined from $92.0 million in 1951, to $81.7 million in 1952, to $71.1 million in 1953. Inspection of Table XX shows that the main reason for this decline was due to the drop in the state's importation of chemical wood pulp and pulpwood.

Besides the two important sub-categories mentioned above, there were several additional items which Michigan imported in large amounts. For example, Michigan imported sawmill products valued between $18.0 million and $19.7 million per year during the period under study. Moreover, items classified as wood manufactures had import values varying from $9.9 million in 1951 to over $12.0 million in both 1952 and 1953. And, in addition, unmanufactured wood products were imported to a sizeable extent during the

TABLE XX*

DOLLAR VALUE OF MICHIGAN IMPORTS OF WOOD AND PAPER
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Wood, unmanufactured	3,589.1	3,261.3	3,954.7
Logs	2,225.2	1,759.0	2,161.2
Round or hewn timbers	44.1	36.1	71.0
Others	1,319.8	1,466.2	1,722.4
Sawmill products (lumber)	19,581.8	17,951.9	19,746.7
Sawed boards, etc.	19,564.8	17,779.9	19,506.3
Railroad ties, sawed	.0	.0	15.1
Others	17.0	222.0	225.3
Wood manufactures	9,897.8	12,446.4	12,330.2
Paper base stocks	92,014.4	81,714.4	71,056.3
Pulpwoods	7,206.2	8,920.7	7,294.6
Wood and other pulp	4,940.1	2,287.8	1,512.6
Chemical wood pulp	78,507.6	69,980.8	61,943.0
Others	1,360.5	525.1	306.1
Paper and manufactures	121,086.5	132,513.6	135,404.8
Printing paper	116,589.7	128,781.8	131,916.2
Standard newsprint paper	114,856.3	127,389.0	130,622.7
Wrapping paper	69.8	1.7	68.0
Grease proof and waterproof paper	4.5	.6	.0
Tissue and similar paper	.3	1.0	.0
Others	4,422.2	3,728.5	3,420.6
Others	1.0	7.8	15.9
Total	246,170.6	247,895.4	242,508.6

*Source: Unpublished Machine Tabulation Sheets: IM 154.

three year period.[19]

By way of reflection, one would say that the wood and paper classification was the most important brick in the Michigan import edifice. Moreover, the basic ingredients of this brick were found to be standard newsprint paper, and chemical wood pulp.

Michigan's Imports of Nonmetallic Minerals. Another of the most important commodity classifications in Michigan's import trade was nonmetallic minerals. This classification had dollar values in each of the three years under consideration of over $30.0 million. In rank, the classification consistently held fourth place. Percentage-wise, during the three year period under study, the classification produced a little more than 5 percent of the state's total import value.[20]

Unfortunately, however, the present investigator can say very little in a specific way about the products which made up the nonmetallic minerals category. The reason being that the items within this category which Michigan imported, to any extent at all, fell within the general subclassification, other nonmetallic minerals and manufactures. There is no further breakdown of this classification. Therefore, the only specific items which Michigan imported in the nonmetallic minerals classification which did not fall into the sub-category mentioned above were: coal and related fuels; petroleum products; glass and glass products; and precious

---

[19]See Table XX, p. 105, of this study for the specific values of items and sub-categories included within the wood and paper classification.

[20]See Table IV, p. 64, of this dissertation.

TABLE XXI*

DOLLAR VALUE OF MICHIGAN IMPORTS OF NONMETALLIC MINERALS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Coal and related fuels	805.2	564.1	491.4
Petroleum and products	398.8	713.4	496.7
Stone, lime, cement, gypsum, and gypsum products	43.6	74.5	121.9
Glass and glass products	667.0	404.3	2,315.6
Other nonmetallic minerals and manufactures, except precious stones and imitations	27,504.2	30,207.8	28,921.2
Precious and semiprecious stones, imitation, and industrial diamonds	857.0	857.6	729.8
Total	30,275.8	32,821.7	33,076.6

*Source: Unpublished Machine Tabulation Sheets: IM 154.

and semiprecious stones, including imitation and industrial diamonds.[21] As can be seen from Table XXI, the only one of the latter mentioned items which had an import value exceeding $1.0 million in any of the years considered was glass and glass products with a value of $2.3 million in 1953.

Michigan's Imports of Metals and Manufactures. The second leading classification of Michigan imported products, second only to wood and paper products, was metals and metal manufactures. During the 1951 to 1953 period this classification not only maintained its second ranking position, but improved upon it. Inspection of Table XXII bears this statement out. In 1951, the import value of metal and manufactures products was $100.9 million, with its proportion of the total value of imports being 17.9 percent. By 1952, the value of these products had risen to $120.5 million and its percentage of the whole to 19.7 percent. And, by 1953, the value of the products comprising the metals and manufactures classification had jumped to $171.2 million and its percentage of the total had climbed to 26.6 percent. Thus, one can see not only the tremendous importance of the products in this category, but also that the products have become increasingly more important.[22]

What does one detect about the specific nature of the metals and manufactures classification? Mainly, that the products which make up the classification are divided up into three general sub-categories. These sub-categories are ferrous metals and manufactures; nonferrous metals and manufactures; and precious metals. Of the three, the most important was

---

[21]See Table XXI, p. 107 of this study.

[22]One will note from Table IV, p. 64 of this dissertation, that by far the greatest absolute gain in value of any classification of products was made by metals and manufactures. Moreover, the only classification to have a higher percentage gain was the one which comprised chemicals and related products which started, however, from a much lower original base.

nonferrous metals and manufactures, followed by ferrous metals and manufactures, and precious metals a very poor third.[23]

A breakdown of the three above mentioned sub-classifications, however, reveals the most illuminating information about the state's import of products in the metals and manufactures classification. The most important commodities of the nonferrous metals and manufactures grouping were nickel and nickel manufactures. The value of these items alone accounted for $38.9 million, $45.9 million, and $53.4 million in each of the three years under analysis. Nickel products were followed by aluminum and aluminum manufactures in importance in the nonferrous sub-classification. The third, fourth, and fifth ranked commodities in the nonferrous grouping were copper and copper manufactures, zinc and zinc manufactures, and brass and bronze manufactures.[24]

Turning next to the ferrous grouping one observes several important items. Iron and steel semimanufactures was far and away the leading product of the grouping. In addition to the substantial import value of the product, it also showed a tremendous increase in value during the period. Starting from a value of $11.2 million in 1951, the import value of iron and steel semimanufactures advanced to $20.4 million in 1952, and had reached the value of $41.5 million by 1953. The second ranking product within the ferrous classification was ferroalloys. This item had values of $10.7 million in 1951, $8.1 million in 1952, and $6.6 million in 1953. Other items, as can

---

[23]See Table XXII of this study for 1951-52-53 values of each.

[24]See Table XXII of this study for specific dollar values of aluminum, copper, zinc, and brass and bronze.

TABLE XXII*

DOLLAR VALUE OF MICHIGAN IMPORTS OF METALS AND MANUFACTURES, EXCEPT MACHINERY OR VEHICLES (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Iron ore and concentrates	627.2	1,051.8	591.5
Iron and steel semimanufactures	11,204.6	20,357.1	41,522.7
Steel mill products—manufactures	2,240.1	1,667.3	5,007.2
Structural iron and steel	1,600.4	1,104.4	1,826.0
Rails and parts for rails for railways	18.3	64.1	17.2
Castings and forgings	283.5	431.5	866.9
Iron and steel advanced manufactures	361.4	428.7	572.0
Ferroalloys, ores and metals (NES)	10,747.6	8,135.0	6,607.0
Nonferrous metals, except precious	75,357.4	88,396.1	115,955.7
Aluminum and manufactures	20,770.1	19,105.8	43,313.5
Crude	18,875.6	16,307.6	39,409.4
Scrap	241.2	427.0	1,362.5
Manufactures	1,653.3	2,371.2	2,541.6
Copper and manufactures	6,232.6	11,726.8	10,965.8
Ore and concentrates	5,579.4	8,104.8	10,668.9
Scrap	54.7	---	26.5
Manufactures	653.3	3,622.0	296.9
Brass and bronze manufactures	1,211.2	3,670.9	1,622.2
Lead and manufactures	38.3	285.1	1,076.2
Ore and bullion	---	---	939.3
Manufactures	38.3	285.1	136.8
Nickel and manufactures	38,860.5	45,853.8	53,417.3
Ore and matte	5,560.3	4,969.4	5,748.9
Nickel oxide	3,510.5	5,832.0	5,855.5
Manufactures	29,789.6	35,052.4	41,812.9
Tin	1.2	---	176.9
Ore	1.0	---	---
Scrap and bars, and alloys chief value of tin	1.2	---	176.9

*Source: Unpublished Machine Tabulation Sheets: IM 154.

TABLE XXII* (continued)

DOLLAR VALUE OF MICHIGAN IMPORTS OF METALS AND MANUFACTURES, EXCEPT MACHINERY OR VEHICLES (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Zinc and manufactures	7,280.3	6,246.1	3,576.0
Ores and scrap	8.9	1,189.4	31.6
Manufactures	7,271.4	5,056.7	3,544.4
Other nonferrous ores, metals and alloys, except precious	963.0	1,507.6	1,807.8
Precious metals, jewelry and plated ware	42.1	85.7	49.7
Others	307.5	450.1	915.4
Total	100,887.9	120,535.8	171,221.2

*Source: Unpublished Machine Tabulation Sheets: IM 154.

be seen from the table, that had considerable value were steel mill products and manufactures, iron ore and concentrates, and iron and steel advanced manufactures.

Thus, speaking for the metals and manufactures classification as a whole, several observations are in order. The imported value of the products in the category made it not only Michigan's second ranking import classification, but also made it a strong second. The classification showed the greatest absolute value increase of any of the eleven commodity classifications. The classification accounted for most of the total increase in value in Michigan's import trade during the 1951-53-53 period. The main import products of the classification were nickel and nickel manufactures; iron and steel semimanufactures; aluminum and aluminum manufactures; copper and copper manufactures; ferroalloys; and zinc and zinc manufactures. In addition, one further point is worthy of note; except for the import of nickel manufactures and zinc manufactures, the major portion of the trade consisted of raw or semiprocessed metals. Thus showing that Michigan, being a highly industralized state, is bringing in raw and semiprocessed materials and fabricating them into finished goods, either for foreign export or for domestic consumption.

Michigan's Imports of Machinery and Vehicles. The import value of the machinery and vehicles classification, though not comparable in importance to its counterpart on the export side, was, nevertheless, of substantial magnitude during the 1951-52-53 era. In terms of total import value, the classification had dollar amounts of 99.1 million in 1951, 115.8 million in 1952, and a decline to 82.9 million in 1953. The value of the import products

in this category consistently ranked third.

The main import product of the machinery and vehicles category was agricultural machinery and implements. This product, as is observable from Table XXIII, covers all types of agricultural implements and parts; harvesting and haying implements and parts; and trucks, including garden tractors. The total value of Michigan's imports of agricultural machinery and implements was $83.1 million in 1951, $82.0 million in 1952, and $56.2 million in 1953.[25]

Another important grouping within the machinery and vehicles category was motor vehicles and parts, except agricultural. Imports of motor vehicles consist of new and used complete autos, automobile bodies, trucks, busses, truck and bus bodies and chassis, and parts, except tires, inner tubes and parts of glass. The values of this grouping for the respective years were $10.6 million, $22.5 million, and $15.2 million. Thus, this grouping showed a considerable fluctuation in value during the three year period.

Two other groupings within the machinery and vehicles classification had substantial import values during the period. These groupings were: electrical machinery and apparatus; and other machinery with the exception of electrical apparatus. These two groupings had values in each of the years under study of over $1.2 million.

What, then, can we say in summary about the machinery and vehicles

---

[25] For the specific yearly values of the items mentioned in this paragraph, see Table XXIII, p. 114 of this study. In addition, for further details on the agricultural machinery and implements grouping, see Canada country study, pp. 140-142 of this study.

TABLE XXIII*

DOLLAR VALUE OF MICHIGAN IMPORTS OF
MACHINERY AND VEHICLES
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Electrical machinery and apparatus	1,221.3	2,120.9	4,068.9
Engines, turbines, and parts (NES)	307.8	217.1	329.1
Other machinery, except agricultural	4,583.3	8,948.5	7,051.7
Agricultural machinery and implements	83,139.6	81,998.2	56,155.8
Plows and cultivators (not parts)	7,897.8	6,901.1	3,634.4
Tractors (not parts)	5,620.9	4,720.0	2,523.4
Combines (not parts)	32,754.6	31,559.6	22,340.1
Headers, harvesters, and reapers (not parts)	2,614.2	2,802.2	1,855.2
Harrows, tooth or disk	1,363.5	1,201.7	1,199.6
Drills and planters (includes seeders)	11,999.5	11,282.3	5,570.2
Mowers (except lawn mowers)	1,164.1	1,289.1	803.1
Tractors (parts)	8,239.1	6,615.0	5,225.4
Combines (parts)	3,247.0	4,222.3	2,413.6
Headers, etc. (parts)	617.1	589.4	219.5
Plows, cultivators, etc. (parts)	4,490.1	5,212.7	3,839.5
Vehicles, except agricultural	10,636.2	22,520.3	15,248.7
Parts of, except tires and inner tubes	7,638.4	7,467.3	5,074.7
Vehicles, and chassis of same	411.9	1,165.8	678.8
Total	99,888.2	115,805.0	82,854.2

*Source: Unpublished Machine Tabulation Sheets: IM 154.

classification. First, though not measuring up to the dollar value of its export counterpart, the value of the classification, nevertheless, was of considerable magnitude and importance. And, second, the classification consisted largely of one product, namely, agricultural machinery and implements.

Michigan's Imports of Chemicals and Related Products. The chemicals and related products classification, though not one of the larger ones in regard to total import value, was, however, the classification whose value showed the greatest percentage increase. In glancing at Table XXIV, one sees that the value of the products of this category increased from a mere $11.6 million in 1951, to $30.2 million in 1953. In percentage terms, the value of the products of the classification rose from 2.3 percent of the total in 1951 to 4.7 percent in 1953. In addition, the value of the classification rose in rank from eighth to sixth during the same period.[26]

The main reason for the accelerated increase in the dollar value of the chemicals and related products classification was due largely to the augmentation in the imported value of two product groupings within it. These two product groupings were explosives and ammunition, and industrial chemicals. In addition, the nitrogenous fertilizer materials grouping also showed an increase.[27]

---

[26]See Table IV, page 64 of this dissertation.

[27]For the yearly values and thus the growth of these items, see Table XXIV, p. 116, of this dissertation.

TABLE XXIV*

DOLLAR VALUE OF MICHIGAN IMPORTS OF
CHEMICALS AND RELATED PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Coal tar products	1,070.0	1,549.1	355.3
Medicinal and pharmaceutical preparations	7.9	11.2	233.6
Industrial chemicals	4,870.2	5,673.1	9,357.8
Pigments, paints, and varnishes	319.4	295.4	173.5
Fertilizer and fertilizer materials	5,271.8	5,889.4	6,094.0
Nitrogenous fertilizer materials	5,064.9	5,716.7	5,831.9
Phosphate fertilizer materials	6.9	---	1.0
Potash fertilizer materials	---	---	---
Explosives, fireworks, and ammunitions	88.5	3,436.5	14,054.2
Soap and toilet preparations	8.9	5.1	4.9
Total	11,636.6	16,859.8	30,273.3

*Source: Unpublished Machine Tabulation Sheets: IM 154.

In 1953, of the three groupings mentioned above, explosives and ammunition had the greatest import value with $14.1 million, followed by industrial chemicals with $9.4 million and nitrogenous fertilizer materials with $5.8 million.[28]

Michigan's Imports of Miscellaneous Products. The miscellaneous category, as with its export counterpart, was one of the most difficult of the eleven commodity classifications to analyze; the reason being simply that there are so many groupings included within it. In toto, the value of the category was one of the smallest. The total value of the products of the classification did show considerable growth over the period, however. From a dollar value of $12.7 million in 1951, the value of the classification rose to $19.7 million in 1953.

The two main products within the miscellaneous category were musical instruments and parts, and books, maps, pictures and other printed material.[29]

Three other groupings: clocks, watches and parts; scientific and professional instruments and parts; and toys, athletic and sporting goods also had total import values worthy of note.

In the chapter to follow we will examine Michigan's trade with the various countries of the world. Moreover, at the end of chapter five we

---

[28] The nitrogenous fertilizer materials coming into Michigan consisted of ammonium sulphate, ammonium nitrate and mixtures, and calcium cyanamide or lime nitrogen. See Our 100 Leading Imports in 1949, Foreign Commerce Department, Chamber of Commerce of the United States, Washington 6, D. C., October 1950, p. 31.

[29] See Table XXV for the respective yearly values.

TABLE XXV*

DOLLAR VALUE OF MICHIGAN IMPORTS OF
MISCELLANEOUS PRODUCTS
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Photographic materials	11.5	51.0	226.6
Scientific and professional instruments, apparatus, and supplies (NES)	26.9	40.1	57.3
Musical instruments, parts and accessories	844.4	663.7	801.5
Toys, athletic and sporting goods	45.3	198.8	625.5
Firearms and parts	3.0	157.8	2,679.0
Books, maps, pictures and other printed material	374.4	428.7	518.3
Clocks, watches, clockwork mechanisms and parts	87.8	105.6	270.2
Others	11,274.5	13,821.2	14,480.8
Total	12,667.8	15,466.9	19,659.2

*Source: Unpublished Machine Tabulation Sheets: IM 154.

will make some summary statements on Michigan's trade which will be based on the material in chapter four as well as from the information in chapter five.

CHAPTER V

MICHIGAN EXPORTS AND IMPORTS BY COUNTRY OF DESTINATION AND COUNTRY OF ORIGIN

Having examined Michigan's overall commodity export and import trade, we will now develop a more extensive analysis of Michigan's trade with various countries of the world. A brief description of Michigan's export and import position will be presented, followed by an analysis of the trade of each foreign country with Michigan. This approach has the advantage of providing a broad view of Michigan's foreign trade relations before introducing details of its trade with individual countries.

The most important segment of Michigan's foreign trade, as will be documented in the following sections, is with Canada. Canada's leading role in Michigan trade is evident in both imports and exports. Therefore, the Canadian trade of Michigan receives first consideration.

A. Michigan's Export Trade by Countries, General. The most significant factor in regard to Michigan's export trade is that by far the greatest part of it takes place between Michigan and Canada. Even a cursory examination of Table XXVI makes this fact apparent. Michigan's export trade with Canada was valued at $938.0 million out of a total export trade of $971.3 million in 1951. In 1952, Canada's portion of Michigan's export trade was $958.4 million of the $978.2 million total, while in 1953, Canada amounted for $1,024.4 million of the $1,068.2 million total. The absolute dollar amounts of exports from Michigan going to countries other than Canada varied considerably during the three year period, 1951-52-53, under study. The

TABLE XXVI

DOLLAR VALUE OF MICHIGAN EXPORTS BY COUNTRY
(IN THOUSANDS OF DOLLARS)

Country	1951	1952	1953
Canada	938,039.6	958,414.7	1,024,360.4
Great Britain	20,128.6	5,723.6	5,505.1
Belgium-Luxembourg	5,180.6	4,429.3	4,195.5
Sweden	1,550.2	1,190.3	3,021.4
Finland	323.9	677.9	2,059.0
France	578.0	1,786.8	1,818.1
Netherlands	555.5	904.3	1,497.1
Venezuela	45.2	.9	950.6
Switzerland	866.2	478.4	823.8
Western Germany	235.7	568.1	649.7
Denmark	61.4	20.5	374.0
Japan	3.4	104.8	343.3
Colombia	2.9	644.8	333.5
Norway	418.2	327.5	276.2
Australia	428.4	131.4	251.3
French Morocco	111.0	537.2	221.9
New Zealand	754.8	81.0	169.6
Italy	91.8	893.1	158.7
Cuba	.1	1.9	140.4
Algeria	---	67.7	104.6
Spain	---	37.3	102.3
Ireland	698.6	294.7	84.8
Union of South Africa	68.7	44.4	210.9
Austria	45.7	40.6	22.2
Tangiers	5.4	104.4	19.3
British Guiana	468.5	94.8	10.4
Brazil	59.3	2.4	3.2
Dominican Republic	4.6	203.5	---

*Source: Unpublished Machine Tabulation Sheets: EM 563.

TABLE XXVI (continued)

DOLLAR VALUE OF MICHIGAN EXPORTS BY COUNTRY
(IN THOUSANDS OF DOLLARS)

Country	1951	1952	1953
Egypt	.1	98.9	---
Mexico	194.8	51.7	---
India	218.1	26.3	---
Others	187.6	228.7	480.9
Total	971,326.9	978,211.9	1,068,168.9

*Source: Unpublished Machine Tabulation Sheets: EM 563.

exports from Michigan to countries other than Canada were valued at $33.3 million in 1951; in 1952, they dropped to $19.8 million;[1] while in 1953, they amounted to approximately $24.0 million.[2]

Though countries other than Canada had only a small portion of the total trade with Michigan, nevertheless, the absolute amounts of some of these countries were substantial. Several of them, namely, Great Britain, Sweden, and Belgium-Luxembourg had trade valued at more than a million dollars in all three years considered. Other countries which received sizeable quantities of goods from the Michigan district during the 1951-52-53 period, as Table XXVI illustrates, were France, Netherlands, Norway, Western Germany, Switzerland, Finland, Italy, Ireland, Australia, New Zealand, and French Morocco.

B. Michigan's Import Trade by Countries, General. Michigan's import trade, though being considerably smaller in value and different in composition, reveals the same major characteristics in regard to overall country analyses as does its exports. The main characteristic of the trade again being the disproportionately large share coming from Canada as contrasted to that emanating from the rest of the world. Of the $562.1 million of imports coming into Michigan in 1951, $545.9 came from Canada, leaving only $16.2

---

[1]The main reason for the decline in trade was due almost exclusively to the falling off of the export of lard and dairy products to Great Britain after 1951. See Great Britain country study, p. 147 of this dissertation.

[2]This figure is not $43.8 million, the difference between exports to all countries and the exports to Canada, because approximately $20.0 million of exports in 1953 were not assigned to any country under a new method of handling export shipments valued at less than $500. The present investigator estimates that very little of this $20.0 million would be assignable to countries other than Canada.

million from all other countries combined. In 1952, the respective import figures were $18.0 million from countries other than Canada, and $594.4 million from Canada. In 1953, when the all-time high in the value of Michigan imports was reached ($643.5 million), $607.6 came from Canada while $35.9 million came from the rest of the world.

The above statistics (Table XXVII) reveal that in addition to the always dominant Canadian-Michigan trade, there was a dramatic growth in Michigan's import trade from the rest of the world. In fact, this non-Canadian trade jumped almost 100 percent from 1952 to 1953 as contrasted with a nominal growth of 2.2 percent in imports from Canada.[3]

Michigan imported goods in fairly substantial amounts from countries other than Canada during the period: Sweden, Norway, Denmark, Great Britain, the Netherlands, Belgium-Luxembourg, France, Western Germany, Switzerland, Finland, Spain, Italy, Cuba, India, Japan, New Zealand, Australia, Liberia, and Belgian Congo. Of these import originating countries Sweden, Great Britain, the Netherlands, Belgium-Luxembourg, France, and Italy are distinguished for having exports to Michigan which averaged $1.0 million or more per year for the 1951-53 period under study.

Against this backdrop of general information, the relevant import and export activities of Michigan and each country with which it trades will now occupy the center stage in succession for detailed observation. The first country whose trade relations with Michigan will be examined is that best customer and supplier, Canada.

---

[3]See individual country studies which follow for an analysis of the reasons for this impressive growth.

TABLE XXVII

DOLLAR VALUE OF MICHIGAN IMPORTS BY COUNTRY
(IN THOUSANDS OF DOLLARS)

Country	1951	1952	1953
Canada	545,876.2	594,403.4	607,625.6
Netherlands	672.6	1,010.6	9,690.4
Great Britain	4,082.6	6,478.8	6,812.3
Belgium-Luxembourg	2,133.9	1,061.6	4,092.9
France	587.9	1,269.7	3,602.9
Sweden	1,419.4	1,741.3	2,579.8
Western Germany	1,941.3	933.6	1,518.6
Italy	710.2	1,158.8	1,023.7
Norway	312.4	478.7	1,000.9
Spain	762.7	899.3	980.9
Cuba	77.0	62.7	657.2
Denmark	47.2	130.7	594.1
Finland	899.8	244.5	524.2
Liberia	38.8	538.0	507.5
Switzerland	169.5	237.5	422.2
Japan	143.8	96.0	357.8
India	178.5	82.6	317.1
Belgian Congo	242.3	153.9	262.9
Union of South Africa	130.5	70.9	21.8
Australia	254.1	187.8	204.2
New Zealand	317.3	263.1	158.0
Czechoslovakia	---	---	112.9
British Malaya	14.6	148.2	56.3
Mexico	67.8	69.5	34.7

*Source: Unpublished Machine Tabulation Sheets: IM 154.

TABLE XXVII (continued)

DOLLAR VALUE OF MICHIGAN IMPORTS BY COUNTRY
(IN THOUSANDS OF DOLLARS)

Country	1951	1952	1953
Austria	22.5	15.5	19.3
Brazil	536.7	56.7	1.6
Venezuela	8.8	4.4	.6
Ceylon	134.7	33.8	---
Others	352.0	564.1	353.6
Total	562,135.1	612, 95.7	643,534.0

*Source: Unpublished Machine Tabulation Sheets: IM 154.

C. Country Studies. In this portion of the study we will take up, in order, Michigan's trade with the following countries: Canada, Great Britain, Belgium-Luxembourg, Sweden, France, the Netherlands, Switzerland, West Germany, Norway, Italy, Finland, Australia, New Zealand, Spain, Denmark, Ireland, Austria, Czechoslovakia, Cuba, Mexico, Dominican Republic, Brazil, Venezuela, British Guiana, Colombia, Japan, India, Ceylon, British Malaya, Liberia, Belgian Congo, French Morocco, Union of South Africa, Algeria, Tangiers, and Egypt.

Michigan's Exports to Canada. Canada was without a close rival as Michigan's leading target for export shipments during the 1951-52-53 period. From an already impressive value of $938.0 million exported to Canada in 1951, the value of the trade rose in 1952 to $958.4 million, while by 1953, it had reached the astronomical figure of $1,024.4 million.[4]

Of the goods in the eleven export categories into which Michigan shipments are classified, the category of goods which led all others in Canadian trade was machinery and vehicles. Machinery and vehicles exports had values of $434.5 million, $479.6 million, and $542.6 million, respectively, for the years 1951, 1952, and 1953. Two other product classifications which had substantial dollar export values, though not rivaling machinery and vehicles, were nonmetallic minerals and metals and manufactures. Goods in these two export groups had values which averaged very close to $100.0 million per year for the three year period.

---

[4]To this total should be added a very substantial portion of the $20.0 million dollars of exports which, while not allocated to any country because the shipments were valued at less than $500, were exported primarily to Canada.

TABLE XXVIII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO CANADA
BY COMMODITY CLASSIFICATIONS
(IN MILLIONS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	10.8	4.4	6.9
Inedible animals and animal products	12.6	7.5	6.7
Vegetable food products and beverages	54.1	65.0	64.0
Inedible vegetable products	22.7	25.5	21.3
Textile fibers and manufactures	90.4	58.1	47.2
Wood and paper	22.7	21.9	22.9
Nonmetallic minerals	106.7	98.8	93.6
Metals and manufactures	103.8	106.4	98.0
Machinery and vehicles	434.5	479.6	542.6
Chemicals and related products	51.2	60.6	65.2
Miscellaneous products	28.7	30.6	55.9
Total	938.0	958.4	1,024.4

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

Other product classifications which had significant export values for the three year period were: chemicals and related products; vegetable food products and beverages; textile fibers and manufactures; and miscellaneous (Table XXVIII). The products in the miscellaneous classification showed the greatest increases dollar- and percentage-wise of these four mentioned product types, while textile fibers and manufactures showed, conversely, the greatest relative and absolute declines.

To see the trade picture between Michigan and Canada more clearly, however, it is necessary to abandon the very general method of looking at the trade between the two areas in terms of categories in favor of the microscopic method of looking at the trade in terms of products or items. Thus we shall examine the hundred or so items which make up, for the most part, the export trade between Canada and Michigan.

The leading export item, as Table XXIX verifies, is automotive equipment. Michigan's famed automotive products completely dominate the Michigan-Canadian export trade. Analysis of the components included within "automotive equipment" discloses that the total value consists largely of the sub-items, passenger cars and chassis, and parts for autos, trucks, and busses. Of these two components the parts for autos, trucks, and busses group is much the more important, accounting for at least $150.0 million in export value for each of the three years between 1951 and 1953. Undoubtedly, a large part of these exports went to American owned automobile plants located in Canada.

Raw cotton, the second largest export item to Canada, has been decreasing significantly in value in recent years (Table XXIX). Cotton is

TABLE XXIX*

DOLLAR VALUE OF MICHIGAN EXPORTS TO CANADA
BY SPECIAL COMMODITIES
(IN MILLIONS OF DOLLARS)

Special Commodity	1951	1952	1953
Automotive equipment	182.6	195.8	233.3
Motor trucks and truck chassis including trucks and trailors	6.1	5.3	5.4
Passenger cars and chassis	23.0	25.6	43.6
Parts for autos, trucks, and busses	150.0	160.2	178.4
Others	3.5	4.7	5.9
Raw cotton, except linters	80.1	48.4	38.3
Construction, excavating and mining machinery	27.7	39.2	37.6
Power driven metal-working machinery	15.3	23.8	32.4
Wheel type tractors, parts and accessories	33.8	27.7	26.7
Electric refrigerators and parts	14.2	23.1	23.2
Bituminous coal	29.1	25.0	22.1
Internal combustion engines	21.9	20.5	19.4
Crude petroleum	30.5	22.5	18.3
Tracklaying tractors, parts and accessories	12.5	13.8	15.7
Electrical appliances	8.0	9.8	15.4
Subtropical fruits	14.1	14.2	14.6
Fresh vegetables (not frozen)	10.5	15.0	12.6
Glass and products	4.3	6.4	11.4
Air conditioning and refrigeration equipment	3.7	6.5	10.5
Organic chemicals, not of coal tar origin	7.5	9.8	10.0
Sawmill products	10.1	10.4	9.7
Fresh fruits other than subtropical	6.6	9.3	9.5
Parts and attachments (NEC) specially fabricated for agricultural machines and outfits	9.6	9.4	9.3
Other electrical apparatus	5.3	7.5	8.4
Synthetic gums and resins	5.3	5.6	7.9
Hardware	2.5	7.2	7.7
Vegetable oils	6.4	8.2	7.6
Periodicals, current	6.9	7.2	7.4
Refined oils	4.9	7.0	7.1
Motors, starters and controllers	8.4	7.1	7.0
Chemical pigments	6.8	6.3	6.7
Iron ore	8.5	8.0	6.7

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XXIX*(continued)

DOLLAR VALUE OF MICHIGAN EXPORTS TO CANADA
BY SPECIAL COMMODITIES
(IN MILLIONS OF DOLLARS)

Special Commodity	1951	1952	1953
Central heating equipment, except electrical	4.5	4.8	6.6
Coal tar products	5.2	6.0	6.1
Railway cars and accessories	2.5	3.5	5.6
Telegraph and telephone apparatus	4.2	4.7	5.3
Chemical specialty compounds	2.7	3.3	4.9
Petroleum coke	6.2	5.2	4.9
Medicinal and pharmaceutical preparations	5.1	4.9	4.7
Tubular products and fittings	5.9	4.6	4.4
Ball and roller bearings, and balls and rollers	5.4	6.0	4.4
Hides and skins, raw, except fur	5.3	3.7	4.2
Harvesting machinery (not parts)	na	4.6	4.2
Accounting, bookkeeping and calculating machines	2.7	4.1	4.1
Meat and meat products	6.8	1.6	4.0
Castings and forgings	3.7	6.0	3.9
Power transmission systems, mechanical hydraulic (except vehicular)	na	4.5	3.9
Tools	3.7	4.5	3.8
Coke, except petroleum coke	4.2	4.2	3.6
Iron and steel bars and rods	4.2	5.5	3.3
Alcohols	1.7	5.4	3.2
Woodworking machines and parts	na	2.4	2.9
Books and pamphlets	2.5	3.1	2.9
Nickel (not manufactures)	1.0	1.6	2.9
Iron or steel body valves and parts for steam, water, oil and gas	2.0	3.5	2.7
Printing and bookbinding machinery	2.6	1.3	2.7
Sodium compounds	.9	1.6	2.6
Aluminum	4.0	2.6	2.4
Transmission and distributor apparatus	2.1	2.0	2.4
Portable electric tools	.9	1.4	2.4
Potassic fertilizer materials	2.4	2.5	2.4
Phonographs and phonograph parts	1.9	1.3	2.4

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XXIX* (continued)

DOLLAR VALUE OF MICHIGAN EXPORTS TO CANADA
BY SPECIAL COMMODITIES
(IN MILLIONS OF DOLLARS)

Special Commodity	1951	1952	1953
Steam engines, boilers and accessories	2.5	1.5	2.3
Cultivating implements	2.7	2.5	2.3
Industrial manufacturing and service industries machines and parts	6.7	2.4	2.1
Tires, tire casings and inner tubes	.8	2.7	1.9
Structural iron and steel	3.5	1.9	1.9
Steel ingots, blooms, billets, slabs, sheet bars and tin plate bars	2.4	3.8	1.8
Agricultural machinery and outfits (NEC)	2.1	1.9	1.8
Cash registers	1.6	.7	1.7
Copper ore, concentrates and primary forms	.4	1.1	1.6
Bottling machinery and parts	na	.5	1.6
Manufactures plastic products (NEC), not specially fabricated for machines or equipment	na	1.2	1.6
Nitrogenous fertilizer materials	1.3	1.3	1.6
Abrasives and abrasive products	1.7	1.7	1.6
Soybean oil-coke meal	1.1	.3	1.4
Naval stores, gums and resins	1.8	1.3	1.3
Lawn mowers	.3	.7	1.1
Iron and steel scrap	1.2	2.2	1.0
Hops	.8	.6	1.0
Furs and manufactures	1.0	1.2	.9
Furniture	.6	.8	.9
Zinc	1.2	1.0	.9
Clocks, watches and parts	.5	.6	.8
Tin cans	.7	1.0	.8
Asbestos and asbestos manufactures	.6	.9	.8
Corn, except seed	2.0	2.5	.8
Paddy, or rough rice	.4	1.0	.8
Grass, field, and garden seeds	2.0	1.5	.7
Salt	1.0	1.1	.7
Chains, sprockets and others	.8	.9	.7

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because or rounding.

TABLE XXIX* (continued)

DOLLAR VALUE OF MICHIGAN EXPORTS TO CANADA
BY SPECIAL COMMODITIES
(IN MILLIONS OF DOLLARS)

Special Commodity	1951	1952	1953
Firefighting equipment (except automotive fire engines, trailors, and parts)	.5	.7	.6
Sewing machines, shoe machines and parts	1.0	1.0	.6
Sulfur	.8	2.0	.6
Newspapers, current	.3	.3	.3
Cycles and parts	.2	.4	.3
Commercial and civilian aircraft	.2	.1	.3
Cotton pulp	1.3	.5	.3
Dairy products	.6	.3	.3
Others	220.0	207.2	232.4
Total	938.0	958.4	1,024.4

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

exported by Michigan in large quantities, even though it is not grown or processed in the state. Other products which Michigan exports in large quantities, although not produced within the state, are: bituminous coal with an export value of over $20.0 million in each of the three years considered; crude petroleum which averaged approximately $25.0 million per year during the same period; and subtropical fruits which averaged slightly more than $14.0 million per year.

Despite these exceptions, the items which Michigan exported to Canada in sizeable quantities are largely those which are manufactured, grown, or processed within the state. The validity of this generalization is proved by the leading export item to Canada, automotive equipment. Further evidence is provided by an examination of the remainder of the export items. Among the top ten Michigan exports to Canada during 1953 are, in addition to automotive equipment, such Michigan-produced goods as the following: construction, excavating, and mining equipment; power driven metal working machinery; wheel type tractors, parts and accessories; electric refrigerators and parts; internal combustion engines; and tracklaying tractors, parts and accessories. Each of the above mentioned items had an export value of over $15.0 million for 1953. And with the exception of tracklaying tractors in 1951 and 1952, and electric refrigerators and parts in 1951, all of the above listed items had an export value exceeding $15.0 million for all of the three years considered.[5]

A closer examination of Table XXIX further emphasizes the importance

---

[5]See Table XXIX, pp. 130-133 of this study for the specific export amounts to Canada for the respective years.

of goods manufactured or processed in Michigan which are exported to Canada. Mention of additional Michigan-produced goods will suffice to establish the point. Excellent examples of Michigan products exported to Canada are: air conditioning and refrigeration equipment; organic chemicals not of coal tar origin; glass and glass products; and sawmill products. All of the above listed items had export values in 1953 of around $10.0 million. Others, nearly all of which averaged $5.0 million per year for the three year period, were: parts and attachments specially fabricated for agricultural machinery; other electrical apparatus; hardware; vegetable oils; current periodicals; motors, starters and controllers; chemical pigments; iron ore; central heating equipment, except electrical; coal tar products; railway cars and accessories; telegraph and telephone apparatus; and chemical specialty compounds.

Export items which showed the greatest fluctuation during the three year period have been selected for further examination. Raw cotton registered the greatest decline, both absolute and relative, of the major export commodities during the three year period. This item dropped from a value of $80.1 million in 1951 to $38.3 million in 1953, a decline of 52 percent.[6]

---

[6]During the same period, 1951-52-53, Canada's total imports of cotton from the United States dropped from $86.9 million in 1951 to $52.4 million in 1952 and down to $40.2 million in 1953. Thus Michigan maintained, approximately, its same proportion of the total United States-Canadian cotton trade during all three years. Likewise, the total export of cotton by the United States showed a decline during the same period of approximately the same proportions. Total United States cotton exports dropped from a value of $1,138.4 million in 1951 to $862.2 million in 1952 to $517.0 million in 1953. See United States Exports of Domestic and Foreign Merchandise, Report No. FT410, Part I, Department of Commerce, Bureau of the Census, Foreign Trade Division, Washington, D. C., April 1951-52-53. For 1951, see pp. 51-52, for 1952, see p. 56, and for 1953, see p. 59.

Other major export items showing a substantial decline during the same period were: wheel type tractors, parts, and accessories; bituminous coal; crude petroleum; and meat and meat products. In not one of the latter cases, however, was either the relative or absolute decline anywhere near the proportion reached by cotton. Further items which showed precipitous declines during the three year period, though of less significance from a dollar point of view than those already mentioned, were: industrial manufacturing and service industries machines and parts; structural iron and steel; aluminum; corn; grass, field, and garden seed; and cotton pulp (Table XXIX).

The major items showing the greatest gains in export dollar value during the three year period, 1951-53, were: power driven metal-working machinery; electric refrigerators and parts; electrical appliances; glass and products; air conditioning and refrigeration equipment; and hardware.[7] Additional Michigan export items, though of less importance, which showed tremendous dollar value gains, were: railway cars and accessories; chemical specialty compounds; accounting, bookkeeping and calculating machines; alcohols; sodium compounds; and portable electric tools.

Michigan's export trade with Canada may be described succinctly in a few summary statements. First, Canada almost completly dominates this trade. Second, this export trade was of constantly growing dollar value during the three year period. Third, though there are several major items which are not Michigan produced or processed, the trade consists largely of

---

[7]See Table XXIX, pp. 130-133 of this study for absolute increase of the above mentioned products.

items grown or fabricated in Michigan. And, fourth, the major part of Michigan's export trade to Canada is comprised of vehicles and machinery.[8]

Michigan's Imports from Canada. Michigan's import structure was dominated by its trade with Canada to the same extent as its export structure during the 1951-53 period. The composition of its import structure differed perceptibly from its export counterpart, however. The leader of the import trade was wood and wood and paper products, whereas machinery and vehicles had been the front runner for exports. In addition, such categories of products as nonmetallic minerals and textile fibers and manufactures, which were high on the export list, were considerably lower on the import side.

Wood and paper products, as mentioned above, were the leading goods which Michigan imported from Canada during the three year period under study. These products were followed, in order, for most of the three years in question by: metals and manufactures; machinery and vehicles; nonmetallic minerals; vegetable food products and beverages; chemicals and related products; edible animals and animal products; miscellaneous products, textile fibers and manufactures; inedible vegetable products; and inedible animals and animal products.[9]

---

[8]Strangely enough, the major declines in export value during the 1951-53 period were felt by the items which were not Michigan products, namely, cotton, bituminous coal, and crude petroleum. See Table XXIX, pp. 130-133 of this study.

[9]In the individual years the exception to these were: in 1953, the value of the products in the miscellaneous category exceeded the value of vegetable food products and beverages; in 1952, the value of vegetable products exceeded the value of textile fibers and manufactures; and in 1951, the value of inedible animals and animal products surpassed the value of inedible vegetable products, while in the same year the value of edible animals

TABLE XXX*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM CANADA
BY COMMODITY CLASSIFICATIONS
(IN MILLIONS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	15.2	14.6	14.3
Inedible animals and animal products	5.4	1.6	3.6
Vegetable food products and beverages	24.2	26.8	28.5
Inedible vegetable products	4.6	8.2	5.7
Textile fibers and manufactures	6.4	7.0	5.9
Wood and paper	244.0	246.0	239.4
Nonmetallic minerals	28.5	31.1	30.1
Metals and manufactures	96.9	117.9	153.3
Machinery and vehicles	97.8	110.6	78.8
Chemicals and related products	10.8	15.9	29.9
Miscellaneous products	11.8	14.4	18.1
Total	545.9	594.4	607.6

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

With this general background on the Michigan-Canadian import trade, the specific items which make up the trade will now be examined.

The largest individual item in the Canadian-Michigan trade is standard newsprint.[10] The imported value of this product considerably exceeded that of any other item. The significance of standard newsprint in Michigan's import pattern is evident when its respective import value is compared with the value of all goods imported by the state from Canada. Michigan's imports of standard newsprint from Canada in 1951 were valued at $114.9 million out of a total import trade with the country for that year of $545.9 million. In 1952, the value of the newsprint trade was $127.4 million out of a $594.4 total. And, in 1953, Michigan imported, out of a total trade of $607.6 million, $130.6 million of standard newsprint.

Wood pulp, a product closely allied to newsprint, was the second most important trade item between Michigan and Canada. The greatest bulk of this wood pulp is consumed in the manufacturing of paper and paperboard. The respective 1951 to 1953 import values for wood pulp were $81.4 million, $70.5 million, and $61.5 million.

Nickel and nickel manufactures was the third ranking product which Michigan imported from Canada.[11] The Canadian-Michigan import trade in this

---

and animal products outdistanced the value of chemicals and related products as well as the value of the products in the miscellaneous category. See Table XXX, p. 138 of this study.

[10] Standard newsprint is the most important of the printing papers made with various proportions of ground wood and unbleached chemical wood pulp.

[11] These nickel manufactures consist mainly of nickel in pigs, ingots, and slots.

TABLE XXXI*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM CANADA
BY SPECIAL COMMODITIES
(IN MILLIONS OF DOLLARS)

Special Commodity	1951	1952	1953
Standard newsprint paper	114.9	127.4	130.6
Paper base stocks (wood pulp)	81.4	70.5	61.5
Nickel manufactures	29.6	34.8	41.4
Crude aluminum	18.9	16.3	39.4
Other nonmetallic minerals and manufactures	27.1	29.6	28.4
Iron and steel semimanufactures	10.0	20.1	28.0
Combines and other harvesters	38.2	39.0	26.7
Whiskey	10.1	19.1	20.8
Sawed boards (lumber)	19.6	17.8	19.5
Vehicles and parts, except agricultural	10.1	26.8	14.5
Explosives, fireworks, and ammunition	---	3.4	14.0
Copper ore and concentrates	5.6	8.1	10.1
Industrial chemicals	4.8	5.6	9.3
Tractors and parts	13.6	11.0	7.6
Plows and cultivators	12.8	12.1	7.4
Pulpwood	7.2	8.9	7.3
Drills, planters, and harrows	13.4	12.5	6.8
Ferroalloys, ores and metals (NEC)	10.7	8.1	6.6
Fresh or frozen fish	6.7	6.9	6.3
Nitrogenous fertilizer materials	5.1	5.7	5.8
Other machinery, except agricultural	3.4	5.1	5.7
Prepared or preserved pork	1.4	3.3	4.5
Binding twine	4.1	4.1	4.3
Rubber and allied gums and manufactures	3.5	7.0	4.3
Zinc manufactures	7.3	5.1	3.4
Steel mill products manufactures	.7	.6	3.1
Firearms and parts	---	.2	2.7
Fruits and preparations	2.7	2.1	2.5
Grains and preparations	2.1	2.2	2.4
Electrical machinery and apparatus	1.2	1.9	2.4
Aluminum manufactures	1.6	2.4	2.3
Logs	2.2	1.8	2.2
Vegetables and preparations	2.9	2.9	1.5

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE XXXI* (continued)

DOLLAR VALUE OF MICHIGAN IMPORTS FROM CANADA
BY SPECIAL COMMODITIES
(IN MILLIONS OF DOLLARS)

Special Commodity	1951	1952	1953
Brass and bronze manufactures	1.2	3.7	1.5
Bailer twine	3.2	2.4	1.4
Malt liquors	.3	.5	1.1
Aluminum scrap	.2	.4	1.1
Lead ore and bullion	---	---	.9
Mowers	1.2	1.3	.8
Glass and glass products	.1	.1	.6
Cattle	3.4	.2	.6
Fish, pickled and salted	.7	.7	.6
Coal and related fuels	.8	.6	.5
Petroleum products	.4	.7	.5
Toys, athletic and sporting goods	---	.1	.5
Hides, skins, except furs	2.1	.7	.5
Books, maps, pictures and other printed material	.3	.3	.4
Engines, turbines and parts (NEC)	.3	.2	.3
Iron and steel advanced manufactures	.2	.2	.3
Copper manufactures	.7	3.6	.3
Fodders and feeds (NEC)	1.0	.2	.3
Musical instruments and parts, and accessories	.4	.2	.3
Fresh, chilled or frozen pork	.2	.1	.3
Leather, rawhide, parchment manufactures	.2	.3	.3
Shellfish and products	.2	.2	.2
Leather	.4	.1	.2
Smoked or kippered fish	.3	.3	.2
Coal tar products	.4	.7	.2
Medicinal and pharmaceutical preparations	---	---	.2
Pigments, paints and varnishes	.3	.3	.2
Lead manufactures	---	.3	.1
Dairy products	.1	1.2	.1
Hogs	---	---	.1
Wrapping paper	.1	---	.1

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE XXXI* (continued)

DOLLAR VALUE OF MICHIGAN IMPORTS FROM CANADA
BY SPECIAL COMMODITIES
(IN MILLIONS OF DOLLARS)

Special Commodity	1951	1952	1953
Iron ore and concentrates	.1	.4	.1
Animal hair	.2	.1	.1
Others	54.0	51.9	59.4
Total	545.9	594.4	607.6

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

grouping totalled $29.6 million in 1951, $34.8 million in 1952, and $41.4 million in 1953. The principal reason for Michigan's large nickel import traffic with Canada is that the state is almost wholly dependent upon Canada for its nickel requirements. Alloys containing nickel are used in nearly all types of machinery, in transport and communication equipment, and in many other items which Michigan produces.

The dollar value of Michigan's imports of crude aluminum was almost as great as the state's imports of Canadian nickel and ranked third in the state's imports from Canada (Table XXXI). Aluminum, the most important commercial light metal, enters into the manufacturing of numerous Michigan products. And, though Michigan as well as the remainder of the United States is able to get most of their aluminum domestically, a sizeable portion of it is imported from Canada.

Iron and steel semimanufactures, combines and harvesters, whiskey, lumber, and other nonmetallic minerals and manufactures were additional items which Michigan imported from Canada in amounts of $15.0 million or more for each of the years considered.

Items which Michigan imported from Canada in 1953 in excess of $10.0 million but less than $15.0 million were: vehicles and parts; explosives, fireworks, and ammunition; and copper ore and concentrates.[12]

Moreover, such products as industrial chemicals; tractors and parts; plows and cultivators; pulpwood, drills, planters, and harrows; ferroalloys; fresh or frozen fish; nitrogenous fertilizer materials; and other machinery

---

[12] See Table XXXI, pp. 140-142 for yearly values of these items.

were imported in values of over $5.0 million for 1953. Still other items such as prepared and preserved pork; binder twine; rubber and allied gums and manufactures; zinc manufactures; steel mill products; firearms and parts; grains and preparations; electrical machinery and apparatus; aluminum manufactures; logs; vegetable preparations (mainly turnips and rutabagas); fruits and preparations (mainly berries and maple sugar and sirup); brass and bronze manufactures; bailer twine; malt liquors; and aluminum scrap had values which were more than $1.0 million in 1953.

Several import products registered a significant change in dollar value over the three year period, though as Table XXXI reveals, most of the items maintained relatively stable import values over the three years. Those items which showed the greatest increase in dollar value were: crude aluminum; iron and steel semimanufactures; whiskey; newsprint; copper ore and concentrates; and industrial chemicals. Products showing the greatest dollar percentage gains were: explosives, fireworks, and ammunition; iron and steel semimanufactures; crude aluminum; whiskey; industrial chemicals; copper ore and concentrates; and nickel manufactures. The greatest dollar and percentage losses were made by wood pulp, agricultural implements, ferroalloys, and zinc manufactures.

The main features of Michigan's import trade with Canada may be described by three remarks. First, Canada, as with exports, completely dominates Michigan's trade with foreign countries. Second, though there are hundreds of items which Michigan imports from Canada, the bulk of the trade consists of two groupings, nonferrous metals, and paper and paper base stocks. And, third, most of Michigan's merchandise imports from Canada consist chiefly

of commodities in an unfinished form and thus necessitate further manufacture.

Michigan's Exports to Great Britain. Great Britain was the second largest recipient of Michigan exports during the period under study. Michigan exported $20.1 million worth of goods to Britain in 1951, $5.7 million in 1952, and $5.5 million in 1953 (Table XXXII).[13] The leading category of products which Michigan exported to Britain was machinery and vehicles in 1952 and 1953. In 1951, however, the edible animals and animal products classification had by far the greatest export value. The next problem is to isolate and examine the various items which made up the product category classifications.

The leading items Michigan exported to Britain in 1951 were: lard; dairy products; and accounting, bookkeeping, and calculating machines. In addition, paper binding boards; porcelain; power driven metal-working machinery; nondescriptive bookkeeping and accounting machinery; and internal combustion engines were products which Michigan exported to Great Britain in sizeable amounts in 1951.

In 1952, the leading exported items were: power driven metal-working machinery; accounting, bookkeeping and calculating machines; steel ingots and blooms; porcelain; and lard.

The leading products exported by Michigan to Great Britain in 1953

---

[13] The downswing in the value of Michigan's exports to Great Britain from 1951 to 1953 reflected two things: (1) an improving international agricultural supply situation; and (2) a continuing dollar problem. Most of this reduction was attributable to the import restrictions imposed late in 1951 and early in 1952.

TABLE XXXII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO GREAT BRITAIN BY COMMODITY CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	16,263.9	194.3	117.7
Inedible animals and animal products	---	---	15.1
Vegetable food products and beverages	---	---	---
Inedible vegetable products	.1	---	16.5
Textile fibers and manufactures	---	.3	.1
Wood and paper	155.1	---	3.1
Nonmetallic minerals	426.0	448.0	400.7
Metals and manufactures	134.0	1,024.1	34.0
Machinery and vehicles	3,016.1	4,040.7	4,841.5
Chemicals and related products	76.3	13.0	69.0
Miscellaneous products	56.2	3.7	6.5
Total	20,128.6	5,723.6	5,505.1

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XXXIII *

DOLLAR VALUE OF MICHIGAN EXPORTS TO GREAT BRITAIN BY SPECIAL COMMODITIES (IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Power driven metal-working machinery	571.2	2,089.8	3,294.0
Accounting, bookkeeping and calculating machines	2,029.9	1,857.5	1,438.5
Porcelain, electrical, dry process	342.1	437.5	395.4
Oleo stock, edible	---	---	110.6
Synthetic gums and resins	---	---	60.7
Automotive equipment	---	18.7	48.7
Passenger cars and chassis	---	2.2	37.5
Parts for autos, trucks, or busses	---	16.5	12.2
Construction, mining, and excavating equipment	60.1	8.4	36.5
Grass, field and garden seed	---	---	11.0
Steel ingots and blooms	---	947.4	---
Lard	8,692.1	194.3	---
Tin ore and tin alloy scrap	57.7	64.3	---
Paper converting machines and parts	---	30.0	---
Electrical apparatus	---	13.3	---
Dairy products	7,503.7	---	---
Bending boards, paper, except wet	151.3	---	---
Bookkeeping and accounting machines, nondescriptive	121.0	---	---
Internal combustion engines	96.7	1.2	---
Nonmetallic mineral products	73.4	---	---
Sewing machines	64.0	---	---
Meat and meat products	48.0	---	---
Tracklaying tractors and parts and accessories	43.5	4.2	---
Sodium compounds	38.4	---	---
Coal tar products	32.2	---	---
Industrial machinery and parts	31.0	---	---
Printed matter (NEC)	29.2	1.4	---

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XXXIII* (continued)

DOLLAR VALUE OF MICHIGAN EXPORTS TO GREAT BRITAIN BY SPECIAL COMMODITIES (IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Printed matter lithographic	26.5	---	---
Others	685.8	55.6	109.7
Total	20,128.6	5,723.6	5,505.1

*Source: Unpublished Machine Tabulation Sheets:EM 563. Figures will not necessarily add to totals because of rounding.

were: power driven metal-working machinery; accounting, bookkeeping and calculating machines; porcelain; and oleo stock.[14]

The evidence indicates that Great Britain, though relatively insignificant compared to Canada, was the second largest recipient of Michigan exports. Moreover, while Great Britain continued to be the second largest Michigan export target, over the three year period, the value of exports from Michigan to Great Britain fell off very noticeably after 1951. The chief cause for the decline in the trade was the tremendous drop in the value of lard and dairy products exports (Table XXXIII). In general, the lower level of British demand for Michigan lard and dairy products was due to two primary factors that became operative upon the collapse of the post-Korean raw material boom and with the growth of free-world defense mobilization: (1) a continuing dollar problem which caused Great Britain to limit imports of United States products; and (2) an improvement in the foreign supply situation of a number of agricultural products (notably fats and oils and dairy products) which made it possible for them to purchase more of their requirements in non-dollar areas and in Canada and to depend more on domestic production.[15]

Michigan's Imports from Great Britain. Michigan's imports from Great Britain, the value of which was second only to Canada for the three year period under study, consisted largely of five classifications. These

---

[14]See Table XXXIII, pp. 147-148 of this study for 1951 to 1953 values of products exported from Michigan to Britain.

[15]United States Foreign Agricultural Trade, Office of Foreign Agricultural Relations, United States Department of Agriculture, Washington, D. C., December 1952, pp. 6 and 39.

TABLE XXXIV*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM GREAT BRITAIN BY COMMODITY CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	7.0	3.3	18.3
Inedible animals and animal products	171.9	78.8	70.4
Vegetable food products and beverages	723.7	647.4	866.3
Inedible vegetable products	25.0	64.0	62.3
Textile fibers and manufactures	440.8	293.0	370.2
Wood and paper	9.4	6.1	2.2
Nonmetallic minerals	399.7	809.1	845.8
Metals and manufactures	334.5	106.1	1,722.6
Machinery and vehicles	1,796.8	4,106.7	2,651.0
Chemicals and related products	82.8	222.0	71.3
Miscellaneous products	91.0	142.3	125.9
Total	4,082.6	6,478.8	6,812.3

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

classifications were: machinery and vehicles; vegetable food products and beverages; nonmetallic minerals; textile fibers and manufactures; and, especially in 1953, metals and manufactures. The leading classification of products was machinery and vehicles in all three years under consideration. This classification was followed, except in 1953, by the vegetable food products and beverages category.[16]

An analysis of the individual items that made up Michigan's import trade from Great Britain points up several outstanding features. The main products which made up the trade in most of the years considered were: scotch whiskey; machinery other than agricultural; nonmetallic minerals and manufactures; precious and semiprecious stones, including industrial diamonds; vehicles other than agricultural; and agricultural machinery and implements (mainly tractors). Several other products showed substantial values for one of the three years considered. This fact was especially true in 1953 when the two leading import items were: electrical machinery; and iron and steel semimanufactures (Table XXXV). Michigan's importation of these two items in 1953 reflected the very high level of the state's business activity during most of 1953 and the rising ability of British industry to gain a share in the United States market. Great Britain's exports of these two items increased tremendously to Canada in 1953, too. In fact, in these two products Canada's imports from Great Britain increased more than those from Michigan, indicating an improvement of the competitive position of Great Britain.

---

[16] The respective values of the various categories of products can be seen in Table XXXIV, p. 150 of this study.

TABLE XXXV*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM GREAT BRITAIN BY SPECIAL COMMODITIES (IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Electrical machinery and apparatus	43.6	132.6	1,598.8
Iron and steel semimanufactures	107.8	13.7	1,066.7
Scotch whiskey	406.6	626.8	823.1
Other machinery, except agricultural	970.2	3,154.6	602.8
Other nonmetallic minerals and manufactures	225.4	459.9	386.4
Aluminum manufactures	14.0	5.2	371.5
Precious and semiprecious stones, and imitations, and industrial diamonds	170.8	277.8	272.6
Vehicles, except agricultural	563.6	349.1	267.6
Agricultural machinery and implements	218.9	470.2	187.6
Tractors and parts	196.6	375.6	135.6
Glass and glass products	3.2	63.5	184.5
Steel mill products-manufactures	163.4	26.1	126.3
Clay and products	109.4	125.6	94.5
Books, maps, pictures and other printed material	35.3	51.1	77.6
Brass and bronze manufactures	6.3	11.8	61.1
Manufactured flax, hemp, and ramie	159.8	49.1	57.9
Iron and steel advanced manufactures	19.7	20.6	51.6
Leather, rawhide and parchment manufactures	81.6	46.9	49.9
Others	783.0	594.2	531.8
Total	4,082.6	6,478.8	6,812.3

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

Thus, Michigan's import trade with Great Britain can be described briefly in two statements. First, the value of the trade showed considerable growth over the three year period. And, second, the trade consisted largely of the importation by Michigan of machinery and scotch whiskey, except in 1953, when a considerable dollar amount of iron and steel semimanufactures was imported.

Michigan's Exports to Belgium-Luxembourg.[17] The grouping Belgium-Luxembourg was the third ranking area to which Michigan exported goods during the period under study. The values of Michigan's exports to Belgium-Luxembourg were $5.2 million in 1951, $4.4 million in 1952, and a further decline to $4.2 million in 1953.

Michigan's export trade with the Belgium-Luxembourg area, like its export trade with so many of the countries, revealed that the commerce consisted mainly of one classification of products. In most export cases the classification was machinery and vehicles; Belgium-Luxembourg was no exception. As revealed by Table XXXVI, the exportation of machinery and vehicle products accounted for over 90 percent of the state's total exports to Belgium-Luxembourg in all years considered

An examination of the machinery and vehicles classification shows that automotive equipment was the dominant export item of the classification exported to Belgium-Luxembourg. In turn, the main constituent of the

---

[17]For purposes of custom district export and import statistics Belgium and Luxembourg have been combined into one area. Thus, for purposes of this study, Belgium and Luxembourg will be considered as one area rather than attempting to isolate them and determine what precisely went to one country or the other.

TABLE XXXVI*

DOLLAR VALUE OF MICHIGAN EXPORTS TO BELGIUM-LUXEMBOURG BY COMMODITY CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	323.1	273.1	120.2
Inedible animals and animal products	---	---	43.8
Vegetable food products and beverages	2.9	---	74.7
Inedible vegetable products	5.5	---	.4
Textile fibers and manufactures	13.4	.3	6.8
Wood and paper	3.3	4.5	---
Nonmetallic minerals	1.4	---	.8
Metals and manufactures	2.8	112.7	2.3
Machinery and vehicles	4,779.4	4,023.4	3,855.8
Chemicals and related products	48.7	7.3	67.6
Miscellaneous products	.2	8.0	22.9
Total	5,180.6	4,429.3	4,195.5

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XXXVII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO BELGIUM-LUXEMBROUG BY SPECIAL COMMODITIES (IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Automotive equipment	4,307.9	3,776.5	3,395.9
Motor trucks, and truck chassis, including trucks and tractors	806.6	1,303.5	610.8
Passenger cars and chassis	3,492.9	2,437.8	2,759.7
Parts for autos, trucks and busses	8.4	35.2	25.4
Accounting, bookkeeping and calculating machines	47.9	158.1	253.3
Air conditioning and refrigeration equipment	---	45.7	140.9
Meat and meat products	323.1	272.6	116.2
Beans, dry, white	---	---	63.2
Power driven metal-working machinery	47.9	---	30.2
Alcohols	---	---	24.8
Bookkeeping and accounting, descriptive or text writing	224.4	---	---
Adding machines, new except punched card	47.3	---	---
Bookkeeping and accounting machines, non-descriptive	47.1	---	---
Meat and other food grinding machines	25.5	---	---
Electric refrigerators and parts	---	26.1	---
Sheets, carbon, steel, black galvanized, hot rolled	---	108.2	---
Others	109.5	42.1	171.0
Total	5,180.6	4,429.3	4,195.5

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

automotive equipment grouping was passenger cars and chassis. There were, however, two other items in the machinery and vehicles classification which were exported to Belgium-Luxembourg in sizeable amounts, especially in 1953. These items were: accounting, bookkeeping, and calculating machines; and air conditioning and refrigeration equipment (Table XXXVII).

The edible animals and animal products classification was the only other product category which was exported in any amount; this was due to the considerable export of meat and meat products to the area.

Michigan's Imports from Belgium-Luxembourg. Michigan's imports from Belgium-Luxembourg were considerably more diverse than its exports to it. The chief import product classifications from 1951 to 1953 were metals and manufactures, and nonmetallic minerals. In addition, several of the other product classifications had import values of considerable sums (Table XXXVIII).

Belgium-Luxembourg ranked third in 1951, sixth in 1952, and fourth in 1953 in terms of the state's total import trade with countries of the world. In spite of its drop in rank however, Michigan's import trade from Belgium-Luxembourg showed a sizeable dollar growth from 1951 and 1952 to 1953; from $2.1 million in 1951 to $4.1 million by 1953.

Breaking down the product classifications, what were the main items of trade? One of the largest and most consistent items of import, as revealed by Table XXXIX, was structural iron and steel. The largest import item in 1952 was glass and glass products. Moreover, this item showed tremendous growth over the three year period under study. A third item which was imported in substantial amounts was iron and steel semimanufactures. This item, too, showed extensive growth, especially in 1953. The growth in the

TABLE XXXVIII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM BELGIUM-LUXEMBOURG BY COMMODITY CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	2.4	---	---
Inedible animals and animal products	29.2	2.2	2.0
Vegetable food products and beverages	1.3	4.0	2.4
Inedible vegetable products	---	2.1	2.0
Textile fibers and manufactures	57.6	74.7	24.3
Wood and paper	5.6	10.7	3.9
Nonmetallic minerals	562.8	290.0	1,525.7
Metals and manufactures	1,360.8	525.5	2,361.4
Machinery and vehicles	57.5	26.4	82.9
Chemicals and related products	50.9	110.1	43.6
Miscellaneous products	5.8	16.3	44.7
Total	2,133.9	1,061.6	4,092.9

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE XXXIX*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM BELGIUM-LUXEMBOURG BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Structural iron and steel	854.9	503.7	1,007.0
Glass and glass products	459.0	220.2	1,411.9
Iron and steel semimanufactures	491.5	6.4	1,345.4
Precious and semiprecious stones, including industrial diamonds	102.3	62.3	111.3
Machinery, other than vehicles and agricultural	57.5	26.4	63.7
Coal tar products	50.0	102.6	43.6
Vehicles, except agricultural	---	---	19.1
Hides and skins, raw, except furs	27.4	---	---
Others	90.4	140.0	90.9
Total	2,133.9	1,061.6	4,092.9

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

import value of both glass and glass products, and iron and steel semimanufactures by Michigan in 1953 again reflected the very high level of business activity in the state especially during the first half of the year and the rising ability of foreign industry to gain a share in the United States market.[18] Another product which was imported to some extent during the three year period was precious and semiprecious stones, including diamonds (Table XXXIX).[19]

Michigan's Exports to Sweden. Sweden was the fourth largest recipient of Michigan exports during the three years under study. Michigan's exports to Sweden were valued at $1.6 million in 1951, $1.2 million in 1952, and $3.0 million in 1953. The reason for the growth of the trade between the two areas was largely due to the increase in machinery and vehicle products exported. The products in the machinery and vehicles classification were, for all practical purposes, the only goods which were exported by Michigan to Sweden. Further examination of the trade, moreover, indicates that most of the intercourse consisted of only one item, passenger cars and chassis (Table XXXX).

Michigan's Imports from Sweden. Sweden, in addition to being the fourth largest recipient of Michigan exports, was also a country from which

---

[18] In 1953, the United States imports from Belgium-Luxembourg rose by 38 percent over what they had been in 1952. See Statistical Abstract of the United States: 1954, p. 925.

[19] Glass and glass products and precious and semiprecious stones are included in the nonmetallic minerals category. The other two items, structural iron and steel, and iron and steel semimanufactures, are in the metals and manufactures category of products.

TABLE XXXX*

DOLLAR VALUE OF MICHIGAN EXPORTS TO SWEDEN
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	13.0	4.2	.5
Textile fibers and manufactures	---	3.6	---
Wood and paper	.2	5.8	9.5
Nonmetallic minerals	2.8	.3	2.8
Metals and manufactures	.8	.7	3.8
Machinery and vehicles	1,408.9	1,160.7	2,984.3
Chemicals and related products	3.6	4.3	2.1
Miscellaneous products	120.9	4.1	18.3
Total	1,550.2	1,190.3	3,021.4

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XLI*

DOLLAR VALUE OF MICHIGAN EXPORTS TO SWEDEN
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Automotive equipment	1,294.6	1,098.9	2,923.3
Motor trucks and truck chassis	13.1	96.3	---
Passenger cars and chassis	850.2	568.0	2,458.6
Parts for autos, trucks, and busses	431.3	434.6	464.7
Electrical apparatus	---	.2	47.8
Dental supplies	---	2.4	10.0
Parts and accessories for wheel type tractors	27.7	8.9	9.8
Construction, excavating and mining equipment	.9	9.8	---
Internal combustion engines	22.8	---	---
Bookkeeping, accounting, non-descriptive machines	21.1	---	---
Bookkeeping and accounting, descriptive or text writing machines	18.3	---	---
Others	163.8	70.1	30.5
Total	1,550.2	1,190.3	3,021.4

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

Michigan imported goods of considerable value during the period under study. In the 1951-52-53 years, respectively, Michigan imported Swedish goods valued at $1.4 million, $1.7 million, and $2.6 million.

Wood and paper products were the leading items which Michigan imported from Sweden during the 1951 to 1953 period. This classification of products, like the machinery and vehicles classification in the export structure, was almost solely responsible for the magnitude, as well as the growth of import trade between the two areas. The wood and paper products classification, also like the machinery and vehicles classification on the export side, could be broken down to reveal the specific item or items which made up the bulk of the trade between Sweden and Michigan. In the case of the wood and paper products classification, the main items of the import trade were chemical and other wood pulp. The value of Michigan's importation of chemical and other wood pulp amounted to over 80 percent of the total value of the import trade between the two areas in all years considered. The additional 20 percent of the import trade between Sweden and Michigan consisted of two items, namely, nonferrous metals and machinery. In comparison with wood pulp, the latter mentioned items were relatively minor, however.

In summary, one could say that the growth, as well as the size of Michigan's import trade from Sweden was due to one item, wood pulp.

Michigan's Exports to France. France ranked eighth in 1951, fourth in 1952, and sixth in 1953, as a recipient of Michigan exports. The state's exports to France were valued at $.6 million in 1951, $1.8 million in 1952, and $1.8 million in 1953.

TABLE XLII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM SWEDEN
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	.3
Inedible animals and animal products	---	---	1.1
Vegetable food products and beverages	1.2	1.1	1.7
Inedible vegetable products	---	---	---
Textile fibers and manufactures	1.5	.8	.9
Wood and paper	1,160.2	1,470.7	2,226.4
Nonmetallic minerals	6.0	7.1	7.3
Metals and manufactures	161.1	137.8	183.6
Machinery and vehicles	65.7	109.5	121.7
Chemicals and related products	---	.1	4.0
Miscellaneous products	23.6	14.2	32.8
Total	1,419.4	1,741.3	2,579.8

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE XLIII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM SWEDEN
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Chemical wood pulp and other pulp	1,152.4	1,461.6	2,219.4
Nonferrous metals, except precious	98.2	105.2	120.1
Iron and steel semimanufactures	---	11.0	43.7
Machinery, other than agricultural and vehicles	65.1	102.6	111.5
Iron and steel advanced manufactures	62.6	21.4	19.7
Others	41.1	39.5	65.4
Total	1,419.4	1,741.3	2,579.8

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE XLIV*

DOLLAR VALUE OF MICHIGAN EXPORTS TO FRANCE
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	---	.9	3.6
Textile fibers and manufactures	1.2	2.2	---
Wood and paper	157.3	---	---
Nonmetallic minerals	---	---	3.3
Metals and manufactures	---	77.9	1.3
Machinery and vehicles	312.4	1,695.0	1,762.0
Chemicals and related products	106.8	1.8	34.4
Miscellaneous products	.3	8.9	13.4
Totals	578.0	1,786.8	1,818.1

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

Michigan's exports to France, as Table XLIV makes clear, consisted almost solely of products from the machinery and vehicles classification during the 1951 to 1953 period. In addition, a study of Table XLV reveals that the main items of the trade were: accounting, bookkeeping, and calculating machines; and automotive equipment. Of the two principal Michigan to France export items, however, the item, accounting, bookkeeping, and calculating machines had considerably more value significance to the state than did automotive equipment. In addition, it was the increase in the export value of office machines that accounted for the rise in the value of the state's exports to France during the three year period (Table XLV).

Michigan's Imports from France. Like its exports to France, Michigan's imports from there showed an increase in value during the 1951-52-53 study period. The value of Michigan's imports from France increased from $.6 million in 1951, to $1.3 million in 1952, up to $3.6 million in 1953.

Michigan's import trade from France differed from its export counterpart, however, in that the import trade consisted of more than one commodity category. Metals and manufactures was the leading product classification imported in all three years under consideration; in addition, however, Michigan imported from France sizeable amounts of products from the vegetable food products and beverages classification as well as from the machinery and vehicles classification.

The main import items of trade between the two areas, as Table XLVII makes clear were: iron and steel semimanufactures; structural iron and steel; vehicles; wines; and electrical and other types of machinery. These

TABLE XLV*

DOLLAR VALUE OF MICHIGAN EXPORTS TO FRANCE
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Accounting, bookkeeping, and calculating machines	20.4	875.7	1,072.5
Automotive equipment	15.0	506.1	459.1
Passenger cars and chassis	11.0	501.8	438.5
Parts for autos, trucks, and busses	4.0	4.3	20.6
Cash registers	---	24.8	92.6
Electric refrigerators and parts	27.4	.8	87.3
Sodium compounds	---	---	29.6
Construction, excavating and mining equipment	7.1	82.4	23.6
Power driven metal-working machinery	---	---	20.5
Aircraft, civilian	---	156.0	---
Sheets, carbon steel, black, ungalvanized, hot rolled	---	77.9	---
Paper, newsprint and groundwood	156.3	---	---
Bookkeeping and accounting machines, non-descriptive	120.2	---	---
Bookkeeping and accounting, descriptive or text writing	85.4	---	---
Adding machines, new, except punched card	27.0	---	---
Coal tar products	85.5	---	---
Others	33.7	63.1	32.9
Total	578.0	1,786.8	1,818.1

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XLVI*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM FRANCE
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	.2
Inedible animals and animal products	56.9	43.6	48.6
Vegetable food products and beverages	174.0	197.0	281.4
Inedible vegetable products	2.8	3.1	26.8
Textile fibers and manufactures	23.6	24.5	36.7
Wood and paper	6.5	7.5	11.3
Nonmetallic minerals	27.5	8.0	15.8
Metals and manufactures	242.4	514.2	2,488.5
Machinery and vehicles	20.7	261.6	567.4
Chemicals and related products	5.4	79.8	47.6
Miscellaneous products	28.1	30.2	78.5
Total	587.9	1,269.7	3,602.9

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE XLVII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM FRANCE
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Iron and steel semimanufactures	32.8	163.5	1,804.8
Structural iron and steel	116.7	248.8	650.4
Vehicles other than agricultural	3.7	252.3	345.6
Beverages	171.9	196.7	272.4
Wines	171.9	196.7	272.4
Machinery, except electrical	16.7	93.6	153.3
Electrical machinery and apparatus	.2	16.8	68.5
Musical instruments, parts and accessories	3.0	3.4	52.3
Leather, rawhide and parchment manufactures	34.2	32.9	28.3
Others	208.7	262.7	227.3
	587.9	1,269.7	3,602.9

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

import items were also the ones which evidenced the largest value increases over the 1951 to 1953 period. This was especially true of iron and steel semimanufactures whose import values rose from $32.8 thousand in 1951 to $1.8 million in 1953.

Michigan's Exports to the Netherlands. The value of Michigan's exports to the Netherlands, although not large, showed considerable growth over the three year period under study. The value of the trade grew from approximately $.6 million in 1951 to $1.5 million in 1953.

Michigan's exports to the Netherlands, like those to many of the areas, consisted largely of products included within the machinery and vehicles category. The main products which were shipped from the machinery and production classification during the 1951 to 1953 period were: automotive equipment in all three years; construction, excavating, and mining equipment in 1953; and wheel type tractors in 1953. In addition, though not products from the machinery and vehicles category, two other items from Michigan were exported to the Netherlands in sizeable amounts during the period. In 1953, Michigan exported hides and skins valued at $416.5 thousand, and in 1952, it shipped over $240.0 thousand worth of dry white beans to the Netherlands. Nevertheless, in spite of these latter mentioned items, the main components of the 1951-52-53 Michigan-Netherlands export trade were automotive equipment and other machinery.

Michigan's Imports from the Netherlands. Michigan imported more goods, value-wise, from the Netherlands than from any area with the exception of Canada in 1953. Michigan's imports from the Netherlands vaulted from a meager value of $672.6 thousand in 1951, when the value of the trade ranked ninth, to a value of $9.7 million in 1953.

TABLE XLVIII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO THE NETHERLANDS BY COMMODITY CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	7.5	61.0	12.8
Inedible animals and animal products	---	4.7	454.1
Vegetable food products and beverages	---	241.8	13.1
Inedible vegetable products	.3	10.6	13.6
Textile fibers and manufactures	46.6	80.5	44.3
Wood and paper	.7	---	---
Nonmetallic minerals	.5	---	---
Metals and manufactures	.2	77.6	.1
Machinery and vehicles	483.4	417.4	862.9
Chemicals and related products	14.5	8.3	73.9
Miscellaneous products	1.7	2.3	22.4
Total	555.5	904.3	1,497.1

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE XLIX*.

DOLLAR VALUE OF MICHIGAN EXPORTS TO THE NETHERLANDS BY SPECIAL COMMODITIES (IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Automotive equipment	410.2	359.8	448.1
Motor trucks and truck chassis	8.2	---	10.3
Passenger cars and chassis	187.4	117.8	136.0
Parts for autos, trucks and busses	214.6	242.0	301.8
Hides and skins, raw except fur	---	3.1	416.5
Construction, excavating and mining equipment	.3	---	100.8
Wrapping, packaging and filing machines and parts	---	---	84.5
Wheel type tractors	---	---	119.4
Coal tar products	---	---	39.0
Accounting, bookkeeping, and calculating machines	14.2	51.7	37.8
Internal combustion engines	3.9	1.3	31.8
Bookkeeping and accounting machines, non-descriptive	12.2	---	---
Bookkeeping and accounting machines, descriptive and text writing	29.3	---	---
Adding machines, new, except punched card	5.1	---	---
Air conditioning and refrigeration equipment	10.4	3.0	---
Lard	7.5	40.6	---
Sheets, carbon steel, black, ungalvanized, hot-rolled	---	77.1	---
Beans, dry, ripe, white	---	241.8	---
Meat and meat products	---	20.3	---
Others	62.7	105.6	219.2
Total	555.5	904.3	1,497.1

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE L*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM THE NETHERLANDS BY COMMODITY CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	86.3	84.7	100.0
Inedible animals and animal products	.8	1.4	9.4
Vegetable food products and beverages	18.5	32.6	47.1
Inedible vegetable products	304.4	358.7	234.9
Textile fibers and manufactures	7.4	6.9	47.4
Wood and paper	3.8	4.2	4.0
Nonmetallic minerals	61.4	13.7	8.9
Metals and manufactures	5.7	15.5	9,103.0
Machinery and vehicles	2.5	16.1	11.6
Chemicals and related products	114.8	409.5	83.2
Miscellaneous products	67.0	67.3	30.9
Total	672.6	1,010.6	9,690.4

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LI*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM THE NETHERLANDS BY SPECIAL COMMODITIES (IN THOUSANDS OF DOLLARS)

Special Commodities	1951	1952	1953
Iron and steel semimanufactures	---	---	8,945.7
Iron and steel advanced manufactures	.9	2.3	117.3
Coal tar products	71.6	384.0	65.9
Prepared or preserved pork	---	---	63.9
Bailer twine	---	1.0	33.3
Pickled and salted fish	72.0	75.9	29.8
Steel mill products and manufactures	2.3	8.5	23.8
Dairy products	10.9	8.3	16.1
Industrial chemicals	40.8	23.9	15.0
Musical instruments, parts and accessories	37.3	42.5	12.8
	672.6	1,010.6	9,690.4

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

The reason for the spectacular increase in the value of goods imported from the Netherlands was due to the state's importation in 1953 of a considerable amount of Dutch iron and steel semimanufactures (mainly steel plate). It is to be noted that the importation of this item occurred only in 1953 of the three years considered. The tremendous importation of Dutch iron and steel semimanufactures into the state was due to the high level of business activity in the state in 1953 and also the rising ability of the Netherland's industry to gain a share in the United States market.[20] Prior to 1953, coal tar products, pickled and salted fish, industrial chemicals, and inedible vegetable products were the main Dutch products imported directly by Michigan (Table LI).

Michigan's Exports to Switzerland. Michigan's exports to Switzerland from 1951 to 1953, in addition to being of a rather small dollar value, $.9 million in 1951, $.5 million in 1952, and $.8 million in 1953, consisted predominately of products included within the machinery and vehicles export classification. The main items which Michigan exported to Switzerland were: automotive equipment; and accounting, bookkeeping, and calculating machines. The value of both of these export items fluctuated considerably, however, during the three year period in question (Table LIII). The largest

---

[20] In 1952, the Netherlands exports of iron and steel semimanufactures to the United States totalled $1.6 million whereas in 1953 they totalled $15.7 million. Moreover, the value of the United States total imports of iron and steel semimanufactures in 1952 was $64.7 million contrasted with a total import figure for the same item of $132.7 million in 1953. This, then, gives us a further clue for the tremendous increases in Michigan's importation of iron and steel semimanufactures from the Western European countries in 1953. See United States Imports of Foreign Merchandise, Report No. FT 110, Department of Commerce, Bureau of the Census, Foreign Trade Division, Washington, D. C., 1951-52-53.

TABLE LII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO SWITZERLAND
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	7.8	---	1.4
Inedible animals and animal products	.1	---	5.7
Vegetable food products and beverages	.3	.3	4.0
Inedible vegetable products	47.4	.3	.1
Textile fibers and manufactures	.3	.6	---
Wood and paper	.3	3.4	---
Nonmetallic minerals	.6	.1	---
Metals and manufactures	27.0	.2	2.1
Machinery and vehicles	751.6	430.2	731.2
Chemicals and related products	17.6	41.2	69.0
Miscellaneous products	13.7	1.9	10.3
Total	866.2	478.4	823.8

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LIII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO SWITZERLAND
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Automotive equipment	432.3	16.2	360.0
Motors, truck and truck chassis	206.5	1.9	91.4
Passenger cars and chassis	224.6	11.0	238.8
Parts for autos, trucks, and busses	1.2	3.3	29.8
Accounting, bookkeeping, and calculating machines	12.5	253.9	246.1
Coal tar products	---	---	35.6
Construction, excavating and mining equipment	104.5	109.3	30.6
Internal combustion engines	.7	15.1	27.0
Alcohols	---	---	25.9
Power transmission systems, mechanical and hydraulic and parts	---	6.7	20.1
Electric refrigerators and parts	11.3	4.9	20.0
Bookkeeping and accounting machines, non-descriptive	58.0	---	---
Bookkeeping and accounting machines, descriptive or text writing	94.7	---	---
Others	152.2	72.3	58.5
Total	866.2	478.4	823.8

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

fluctuation, however, occurred in the item passenger cars and chassis and was due largely to a general decline in automobile exports in 1952, as well as a specific decline in automobile exports to Switzerland.[21] Undoubtedly, a large part of this decline in exports of automobiles was due to the steel strike in June and July of 1952, as well as the shortages, and government regulations which prevailed over the automobile industry throughout the year.

Michigan's Imports from Switzerland. Michigan's imports from Switzerland were of even less dollar significance than the state's exports to Switzerland during the 1951-52-53 period under observation. Inasmuch as the total import trade itself between the two areas was of a minor dollar value, $169.5 thousand in 1951, $237.5 thousand in 1952, and $422.2 thousand in 1953, there were no product classifications or items which had a very significant dollar figure. In fact, clocks, watches, and parts provided the only item with an import value of over $100.0 thousand in any of the years considered.

Michigan's Exports to West Germany. The value of Michigan's exports to West Germany increased from $235.7 thousand in 1951, to $568.1 thousand

---

[21]The total export of passenger cars and chassis to Switzerland from the United States was valued at $8.5 million in 1951, $4.3 million in 1952, and $6.0 million in 1953. Moreover, the total passenger cars and chassis exports from the United States in 1951 totalled $340.0 million compared to $244.0 million in 1952, and $276.0 million in 1953. See United States Exports of Domestic and Foreign Merchandise, Report No. FT410, Part II. Department of Commerce, Bureau of the Census, Foreign Trade Division, Washington, D. C., April 1951-52-53. For 1951, see p. 119, for 1952, see p. 143, and for 1953, see p. 144.

TABLE LIV*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM SWITZERLAND
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	.6	17.5	31.0
Inedible animals and animal products	1.1	1.5	---
Vegetable food products and beverages	1.3	.3	1.3
Inedible vegetable products	.5	.6	2.2
Textile fibers and manufactures	45.3	26.0	43.4
Wood and paper	1.0	.9	2.8
Nonmetallic minerals	54.7	54.3	3.2
Metals and manufactures	4.1	3.7	11.1
Machinery and vehicles	27.7	23.7	107.0
Chemicals and related products	.4	40.8	12.0
Miscellaneous products	32.9	68.1	208.2
Total	169.5	237.5	422.2

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LV*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM SWITZERLAND
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Clocks, watches, clockwork mechanism, and parts	21.0	51.4	186.2
Machinery, except agricultural	24.9	17.5	88.7
Dairy products	.6	17.5	31.0
Precious and semiprecious stones, including industrial diamonds	54.0	54.1	3.1
Coal tar products	---	40.8	12.0
Others	69.0	56.2	101.2
Total	169.5	237.5	422.2

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

in 1952, and up to $649.7 thousand in 1953.

Products included within the machinery and vehicles export classification were the main Michigan items of export to West Germany during the three year period. These items, for the most part, consisted of accounting, bookkeeping, and calculating machines, except in 1951, when some automotive equipment products, as well as construction, mining, and excavating machinery were shipped.

Michigan also exported products to West Germany from two export product classifications other than the machinery and vehicles grouping. The export of products other than those included in the machinery and vehicles classification occurred in only one of the three years under consideration, however. In 1953, approximately $263.0 thousand worth of inedible tallow, a product included in the inedible animals and animal products classification, was shipped to West Germany, whereas in 1952, almost $300.0 thousand worth of relief or charity clothing, an item included within the miscellaneous classification, was exported to the area governed by Chancellor Adenauer.

Michigan's Imports from West Germany. Michigan's imports from West Germany were more than double the value of the state's exports to it during the period in question. The respective values of the import trade for the three years were $1.9 million, $.9 million, and $1.5 million.

The key product classifications of Michigan's imports from West Germany were, as Table LVIII brings out, metals and manufactures, nonmetallic minerals, machinery and vehicles, and miscellaneous products.

The metals and manufactures product classification had the greatest

TABLE LVI*

DOLLAR VALUE OF MICHIGAN EXPORTS TO WEST GERMANY
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	36.4	23.6
Inedible animals and animal products	---	---	262.6
Vegetable food products and beverages	1.4	---	---
Inedible vegetable products	19.7	---	---
Textile fibers and manufactures	1.4	1.5	5.3
Wood and paper	7.3	---	---
Nonmetallic minerals	---	---	---
Metals and manufactures	.2	10.1	---
Machinery and vehicles	177.3	216.0	242.9
Chemicals and related products	20.0	9.9	29.6
Miscellaneous products	8.4	294.3	85.8
Total	235.7	568.1	649.7

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LVII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO WEST GERMANY
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Tallow, inedible	---	---	210.5
Accounting, bookkeeping and calculating machines	3.6	125.5	208.2
Relief or charity clothing, except newly government agency	8.4	293.8	53.3
Hides and skins, raw, except furs	---	---	47.1
Synthetic gums and resins	---	---	24.6
Automotive equipment	48.0	9.2	22.2
Passenger cars and chassis	48.0	8.4	22.2
Meat and meat products	---	7.7	15.1
Lard	---	28.7	8.5
Construction, mining, and excavating equipment	67.4	53.7	6.2
Power driven metal-working machinery	---	26.8	2.4
Rubber scrap	19.6	---	---
Bookkeeping and accounting machines, non-descriptive	49.0	---	---
Bookkeeping and accounting machines, descriptive or text writing	6.4	---	---
Coal tar products	16.1	---	---
Others	17.2	30.4	51.6
Total	235.7	568.1	649.7

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LVIII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM WEST GERMANY BY COMMODITY CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	15.3	10.5	19.7
Vegetable food products and beverages	41.9	54.1	85.5
Inedible vegetable products	2.2	30.5	16.8
Textile fibers and manufactures	9.5	5.6	9.6
Wood and paper	5.6	8.4	15.4
Nonmetallic minerals	133.1	115.6	161.6
Metals and manufactures	1,096.4	413.5	382.8
Machinery and vehicles	97.5	125.8	364.0
Chemicals and related products	460.3	41.0	96.0
Miscellaneous products	79.6	128.6	267.1
Totals	1,941.3	933.6	1,518.6

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

dollar value over the three year period, as well as the value which fluctuated the most. The main products imported from this classification during the 1951 to 1953 period were iron and steel semimanufactures, and structural iron and steel (Table LVIX).

The second largest product classification which Michigan imported from the West German area was machinery and vehicles. The imports from this classification, as Table LVIX makes visible, consisted mainly of machinery other than agricultural and vehicles.

The miscellaneous import products classification was the third ranking category of products which Michigan imported from Germany. Such items as photographic materials, scientific and professional instruments, clocks, watches, and parts, and toys were the main products of import from the catchall miscellaneous classification.

The last of the main product classifications which Michigan imported from West Germany was nonmetallic minerals. The state's imports of nonmetallic mineral products consisted largely of West German glass and glass products, and clay and clay products (Table LVIX).

Michigan's Exports to Norway. Norway was a relatively minor procurer of exports from Michigan during the three years under investigation. During the entire 1951 to 1953 period this Scandinavian country ranked approximately thirteenth among the countries of the world as a customer of Michigan goods. The value of the state's exports to Norway were $418.0 thousand in 1951, $328.0 thousand in 1952, and $276.0 thousand in 1953. Thus it becomes evident that the shipments of goods by Michigan to Norway was not only small, but that the value of these shipments decreased during the three year period.

TABLE LVIX*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM WEST GERMANY BY SPECIAL COMMODITIES (IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Other machinery, except agricultural	83.2	63.3	307.2
Photographic materials	---	37.9	210.3
Iron and steel semimanufactures	615.9	15.2	119.1
Iron and steel advanced manufactures	36.9	49.3	102.9
Other nonmetallic minerals and manufactures	73.2	67.8	104.9
Clay	73.2	66.8	89.0
Beverages	41.9	54.1	85.5
Malt liquors	34.8	45.7	64.5
Structural iron and steel	398.8	286.3	57.3
Nonferrous metals, except precious	28.8	13.5	82.3
Glass and glass products	52.6	45.1	54.8
Toys, athletic and sporting goods	24.3	28.3	48.8
Scientific and professional instruments	11.2	4.8	37.3
Clocks, watches, clockwork mechanism and parts	26.4	31.2	36.0
Coal tar products	455.9	37.5	36.0
Industrial chemicals	4.2	---	33.5
Medicinal and pharmaceutical preparations	---	---	34.4
Vehicles, except agricultural	4.2	11.0	27.4
Precious metals, jewelry and plated ware	10.8	48.8	25.4
Electrical machinery and apparatus	1.7	51.5	21.2
Others	72.1	88.0	12.8
Others	1,941.3	933.6	1,518.6

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LX*

DOLLAR VALUE OF MICHIGAN EXPORTS TO NORWAY
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	.5	---	---
Textile fibers and manufactures	---	.2	1.4
Wood and paper	.6	---	3.8
Nonmetallic minerals	---	.5	---
Metals and manufactures	23.5	---	---
Machinery and vehicles	377.7	321.0	258.2
Chemicals and related products	14.6	1.4	2.4
Miscellaneous products	1.3	4.1	10.4
Total	418.2	327.5	276.2

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

The principal products shipped to Norway from Michigan were included within the export classification, machinery and vehicles category. The main product from the machinery and vehicles classification which was exported to Norway was automotive equipment, made up largely of passenger cars and chassis. However, the main reason for the decline in the value of the state's export trade to Norway was the decrease in the state's shipment of motor trucks and truck chassis to them from 1951 to 1953.

The only other item, also a machinery and vehicle classification product, which Norway purchased to any extent from Michigan, was accounting, bookkeeping, and calculating machines.

Michigan's Imports from Norway. The value of Michigan's imports from Norway, although not so large as in 1951 and 1952, had reached the $1.0 million mark by the year's end in 1953 (Table LXII).

Products contained within the edible animals and animal products, and metals and manufactures classification made up Michigan's chief items of import from Norway. The principal Norwegian items of import by Michigan from the edible animals classification were: fish and fish products; and edible animal and fish oils and greases. From Norway's metals and manufactures product classification, the Wolverine State imported mostly nickel, except in 1952, when a substantial amount of zinc was imported.

One other Norwegian item, though not included within the two previously mentioned product classifications, which Michigan imported to a considerable degree in 1953, was chemical wood pulp. The imported value of this item from Norway in 1951 and 1952, however, was practically negligible (Table LXIII).

TABLE LXI*

DOLLAR VALUE OF MICHIGAN EXPORTS TO NORWAY
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Automotive equipment	339.7	229.4	229.2
Motor trucks and truck chassis	170.0	24.1	35.4
Passenger cars and chassis	123.1	178.5	158.4
Parts for autos, trucks, and busses	46.6	20.5	12.3
Others	---	6.3	---
Accounting, bookkeeping and calculating machines	2.0	58.8	17.0
Electric refrigerators and parts	9.6	6.1	10.9
Air conditioning and refrigeration equipment	4.5	9.1	11.0
Construction, mining and excavating equipment	13.5	11.2	---
Brass and bronze manufactures	23.2	---	---
Sodium hydroxide	14.6	---	---
Others	11.1	12.9	10.7
	418.2	327.5	276.2

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LXII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM NORWAY
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	121.9	117.8	185.4
Inedible animals and animal products	42.7	62.9	74.0
Vegetable food products and beverages	---	.2	9.4
Inedible vegetable products	1.7	---	.5
Textile fibers and manufactures	.8	1.2	3.5
Wood and paper	.4	47.4	261.9
Nonmetallic minerals	---	3.6	3.9
Metals and manufactures	144.9	244.9	444.7
Machinery and vehicles	---	---	16.1
Chemicals and related products	---	---	---
Miscellaneous products	---	.7	1.6
Total	312.4	478.7	1,000.9

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LXIII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM NORWAY
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Nonferrous metals, except precious	141.4	239.4	439.8
Nickel	141.2	239.1	288.1
Zinc manufactures	---	---	129.3
Aluminum, crude and scrap	---	---	21.9
Others	.2	.3	.5
Fish and fish products	121.9	117.5	177.2
In oil or in oil and other substance	84.2	68.2	127.9
In airtight containers weighing more than 15 pounds	32.1	34.0	43.0
Pickled and salted	1.5	7.1	6.3
Others	4.1	8.2	---
Chemical wood pulp	---	31.4	257.4
Animal and fish oils, and greases, edible	42.0	62.6	73.1
Others	7.1	27.8	53.4
Total	321.4	478.7	1,000.9

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

Thus, a summary of Michigan's import trade with Norway can be compressed into one statement by saying that the value of Michigan's import trade from Norway increased during the 1951-52-53 period largely as a result of the import growth of nickel, fish and fish products, and animal and fish oils, and greases, plus the fact that in 1953, a sizeable amount of Norwegian chemical wood pulp and zinc was imported by the state.

Michigan's Exports to Italy. Michigan's exports to Italy, except for 1952, were of rather insignificant dollar value. The value of the state's exports to Italy was $91.8 thousand in 1951, $893.1 thousand in 1952, and $158.7 thousand in 1953. As can be seen from Table LXV, the primary reasons for the increase in the value of the trade in 1952 were the increases in the state's exportation of rags, steel sheets, relief food, office machines, and organic chemicals to Italy. This increased importation of goods from Michigan on the part of Italy in 1952 was illustrative of the general import trade of Italy which showed a considerable increase in 1952 over 1951. Moreover, the most pronounced increase in Italy's imports from the rest of the world in 1952 was in the areas of cotton and woolen textiles and cast iron, pig iron and steel.[22] In addition to the erraticness of the state's exports to Italy during the three year period under study, another notable feature of the trade was the composition of it. Instead of exporting machinery and vehicle products as was the usual case, the state exported products from such classifications

---

[22]See Statistical Abstract: 1954, p. 926. See also Americana Annual: 1954, p. 368.

TABLE LXIV*

DOLLAR VALUE OF MICHIGAN EXPORTS TO ITALY
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	---	.3	---
Textile fibers and manufactures	91.8	371.1	39.9
Wood and paper	---	---	---
Nonmetallic minerals	---	---	---
Metals and manufactures	---	392.4	---
Machinery and vehicles	---	29.0	16.1
Chemicals and related products	---	46.4	98.6
Miscellaneous products	---	53.9	4.0
Total	91.8	893.1	158.7

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LXV*

DOLLAR VALUE OF MICHIGAN EXPORTS TO ITALY
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Wool rags	88.9	147.2	5.9
Cotton rags, except paper stock	1.0	58.8	11.2
Other rags	---	80.6	15.8
Alcohols	---	9.4	98.6
Accounting, bookkeeping and calculating machines	---	25.8	8.4
Power driven metal-working machinery	---	---	7.7
Canvas articles	---	57.3	1.0
Sheets, carbon steel, black, ungalvanized, cold rolled	---	392.4	---
Organic chemicals, not of coal tar origin	---	33.2	---
Relief or charity foods, except by government agencies	---	53.4	---
Others	1.9	35.0	10.1
	91.8	893.1	158.7

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

as: textile fibers and manufactures; chemical and related products; and metals and manufactures.

An examination of the export product classification reveals that the following items were the chief articles of export by Michigan to Italy. Except for alcohols in 1953, and steel sheets in 1952, wool, cotton, and other kinds of rags were the main items of exportation during the three year period under observation.[23]

Other products exported by Michigan to Italy in some magnitude, besides the three already mentioned were, especially in 1952, canvas articles, organic chemicals not of coal tar origin, office machines, and relief food.

Michigan's Imports from Italy. Italy was one of the largest exporters of merchandise to Michigan during the 1951 to 1953 period. The value of Michigan's imports from Italy was $710.2 thousand in 1951, $1.2 million in 1952, and $1.0 million in 1953. These respective values for the Michigan-Italy import trade allowed the trade to rank eighth in 1951, fifth in 1952, and eighth in 1953 among Michigan's import trade with countries of the world.

It will be noted, first of all, that the yearly values of the state's imports from Italy were much less erratic than Michigan's exports to it. A second point of note is that products from the miscellaneous classification were the leading items of import by Michigan from Italy. Products from several other product classifications, however, were also imported

---

[23]The exact export values of the respective items can be gotten from Table LXV, p. 194 of this dissertation.

TABLE LXVI*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM ITALY
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	14.4	4.3	4.9
Inedible animals and animal products	23.8	30.0	27.7
Vegetable food products and beverages	53.3	45.9	120.5
Inedible vegetable products	52.5	13.2	42.6
Textile fibers and manufactures	28.2	67.0	68.5
Wood and paper	27.9	40.3	33.4
Nonmetallic minerals	52.3	63.7	96.2
Metals and manufactures	19.4	25.3	30.5
Machinery and vehicles	5.4	423.6	93.1
Chemicals and related products	2.8	.5	3.4
Miscellaneous products	430.3	445.0	503.0
Total	710.2	1,158.8	1,023.7

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

in some amounts. This was especially true of goods from the vegetable food products and beverages classification as well as from the nonmetallic minerals and machinery and vehicles classification.

A breakdown of the import product classifications reveals that the main item which Michigan imported from Italy was musical instruments.[24] Other Italian items which Michigan imported in significant value during the three year period were: machinery, except agricultural;[25] wines; stone, lime, cement, and gypsum; clay and clay products; and wool and wool manufactures.

Michigan's Exports to Finland. Michigan's exports to Finland increased from a value of $323.9 thousand in 1951 to $2.1 million in 1953. Product-wise, Michigan's export trade with Finland consisted, like the Michigan trade with so many other countries, almost exclusively of machinery and vehicle products. Goods that Michigan exported to Finland from the machinery and vehicles product classification, as exhibited by Table LXVIII had values of $323.9 thousand in 1951, $677.8 thousand in 1952, and $2.0 million in 1953. Even the briefest examination of these machinery and vehicles classification figures will show that they are nearly synonomous with the figures for the Michigan-Finland export trade as a whole.

Breaking the above referred to machinery and vehicles export classification down, what kind of an export trade picture do we see between

---

[24] This, then, accounts for the value of the miscellaneous products classification.

[25] This was especially true in 1952. See Table LXVII of this dissertation.

TABLE LXVII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM ITALY
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Musical instruments, parts and accessories	403.2	408.0	404.5
Machinery, except agricultural	2.4	372.2	57.6
Wines	26.0	43.6	77.0
Stone, lime, cement, gypsum and gypsum products	16.3	22.6	64.1
Agricultural machinery and implements	2.9	3.1	30.6
Clay and products	27.4	32.3	26.3
Wood and manufactures	25.3	37.2	31.9
Leather, rawhide, and parchment manufactures	4.1	23.8	17.5
Nonferrous metals	13.1	10.8	16.8
Automobiles	---	47.8	3.9
Others	189.5	157.4	303.5
Total	710.2	1,158.8	1,023.7

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LXVIII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO FINLAND
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	---	---	---
Textile fibers and manufactures	---	---	---
Wood and paper	---	---	---
Nonmetallic minerals	---	---	---
Metals and manufactures	---	.1	.8
Machinery and vehicles	323.9	677.8	2,046.3
Chemicals and related products	---	---	8.4
Miscellaneous products	---	---	3.5
Total	323.9	677.9	2,059.0

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LXIX*

DOLLAR VALUE OF MICHIGAN EXPORTS TO FINLAND
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Automotive equipment	322.2	644.5	359.7
Motors, trucks and truck chassis	4.5	127.5	209.2
Passenger cars and chassis	317.2	445.8	144.2
Parts for autos, trucks, and busses	.5	71.2	6.3
Internal combustion engines	1.4	2.2	---
Accounting, bookkeeping and calculating machines	---	30.6	---
Commercial and civilian aircraft	---	---	1,676.9
Others	.3	.6	22.4
Total	323.9	677.9	2,059.0

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

Michigan and Finland? In 1951 and 1952, as Table LXIX reveals, the pattern of trade between the two areas was the familiar one of shipments by Michigan of automotive equipment to the country concerned. In 1951, however, in addition to the export shipments of automotive equipment, there were two shipments in February and May[26] of commercial aircraft. These aircraft shipments, then, in addition to making up the largest portion of the trade in 1953, accounted for the increase in the value of Michigan's exports to Finland from 1952 to 1953 (Table LXIX).

Michigan's Imports from Finland. Finland exported directly to Michigan $899.8 thousand worth of merchandise in 1951, $244.5 thousand in 1952, and $524.2 thousand in 1953. And, as Table LXXI reveals, this trade consisted almost totally of one product, chemical wood pulp. Michigan imported from Finland chemical wood pulp valued at $863.0 thousand in 1951, $240.0 thousand in 1952, and $487.1 thousand in 1953. The only other article besides wood pulp which Michigan imported from Finland during the 1951 to 1953 period was paper and paper manufactures in 1951 (Table LXXI).

Michigan's Exports to Australia. The value of Michigan's exports to Australia was $428.4 thousand in 1951, $131.4 thousand in 1952, and $251.2 thousand in 1953. Thus we see a substantial decline in Australia's imports from Michigan after 1951. This decline was probably due largely to the order issued on March 8, 1952, by the Australian government reducing imports by about 50 percent, the aim being to save between 500 and 600 Australian

---

[26]See Unpublished Machine Tabulation Sheet EM 563: U. S. Exports of Domestic and Foreign Merchandise, U. S. Customs District by Country of Destination by Commodity (Scehdule B Classification), for the months of February and May, 1953.

TABLE LXX*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM FINLAND
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	---	---	1.7
Vegetable food products and beverages	---	---	---
Inedible vegetable products	---	---	---
Textile fibers and manufactures	---	---	---
Wood and paper	899.1	241.1	513.7
Nonmetallic minerals	.6	1.6	3.5
Metals and manufactures	---	---	---
Machinery and vehicles	---	1.8	5.1
Chemicals and related products	---	---	---
Miscellaneous products	.2	---	.2
Total	899.8	244.5	524.2

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LXXI*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM FINLAND
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Chemical wood pulp	863.0	240.0	487.1
Paper and manufactures	34.6	1.1	.3
Others	2.2	3.4	36.8
Total	899.8	244.5	524.2

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LXXII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO AUSTRALIA
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	21.5	---	---
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	.4	1.9	---
Textile fibers and manufactures	---	---	---
Wood and paper	---	---	---
Nonmetallic minerals	.2	---	---
Metals and manufactures	.2	.6	.5
Machinery and vehicles	341.6	119.2	250.0
Chemicals and related products	64.2	9.4	---
Miscellaneous products	.2	.3	1.0
Total	428.4	131.4	251.3

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

pounds a year.[27]

The main and almost sole product classification of exports from Michigan to Australia during the 1951 to 1953 period was machinery and vehicles. Leading the list of Michigan items shipped to Australia were, as usual, office machines or machinery, and automotive equipment. Of the two items, however, office machines had a considerable edge over automotive equipment in value of exports from Michigan to Australia, especially in 1952 and 1953 (Table LXXIII).

Michigan's Imports from Australia. The yearly values of Michigan's imports from Australia, like the annual exports to it, were not of great magnitude during the three year period under observation. The value of Michigan's imports from Australia was $204.2 thousand in 1953, whereas it had been $187.8 thousand in 1952, and $254.1 thousand in 1951.

The state's imports from Australia consisted largely of two items, meat products, and wool and wool products, during the 1951 to 1953 period. Of the two items, Michigan imported a larger dollar value of wool and wool products than it did of meat products, except in 1952, when the imported

---

[27] All imports were placed in three categories: category A, imports during 1952 up to 60 percent of the orders placed in the year 1951; category B, only 20 percent of 1951 imports allowed; category C (plant and goods essential for development), to be dealt with administratively. See The Americana Annual 1953, Americana Corporation, New York, 1953, p. 54. Hereafter cited Americana Annual: 1953. Beginning July 1, 1953, Australia's trade policy was directed toward a relaxation again with an increasing of the percentages of the A and B categories which could be imported. See Americana Annual: 1954, p. 54.

TABLE LXXIII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO AUSTRALIA
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Accounting, bookkeeping and calculating machines	5.2	70.6	193.5
Automotive equipment	116.8	25.6	7.0
Parts for autos, trucks, and busses	4.9	---	7.0
Motors, trucks and truck chassis	52.3	---	---
Passenger cars and chassis	59.6	25.6	---
Cash registers	---	19.6	10.1
Bookkeeping and accounting machines, non-descriptive	123.6	---	---
Bookkeeping and accounting machines, descriptive and textwriting	7.3	---	---
Adding machines, new except punched card	16.2	---	---
Sodium compounds	16.6	---	---
Wheel type tractors	58.4	---	---
Medicinal and pharmaceutical preparations	32.4	9.1	---
Others	51.9	6.5	40.6
Total	428.4	131.4	251.3

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LXXIV*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM AUSTRALIA
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	26.7	87.2	71.0
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	1.2	.2	.8
Inedible vegetable products	---	9.8	18.2
Textile fibers and manufactures	223.6	86.6	111.7
Wood and paper	.2	---	.1
Nonmetallic minerals	.6	1.3	.4
Metals and manufactures	---	.6	.6
Machinery and vehicles	1.6	.9	1.3
Chemicals and related products	---	---	---
Miscellaneous products	---	1.1	---
Total	254.1	187.8	204.2

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LXXV*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM AUSTRALIA
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Meat products	26.7	87.2	71.0
Wool and wool products	223.6	86.6	111.7
Others	3.8	14.0	21.5
Total	254.1	187.8	204.2

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

values of both articles approximated $87.0 thousand.[28]

Michigan's Exports to New Zealand. The value of Michigan's exports to New Zealand, though of a sizeable amount in 1951, declined perceptibly during 1952 and 1953. From a value of $754.8 thousand in 1951, the value of Michigan's exports to New Zealand dropped below $100.0 thousand in 1952, and then rose, somewhat, to $169.6 thousand in 1953.

Machinery and vehicle products were the main articles that Michigan exported to New Zealand in all years considered; this was true no matter if the value of the trade was large or small. It should be pointed out, however, that the same machinery and vehicle products did not make up Michigan's exports to New Zealand in each of the years under study. In 1951, the heyday of Michigan's exports to New Zealand, $585.8 thousand worth of automotive equipment was shipped. During 1952 and 1953, however, Michigan's exports of automotive equipment to New Zealand was nonexistent.[29] On the other hand, the value of the state's exports of office machinery to New Zealand increased considerably from 1951 to 1953.

Michigan's Imports from New Zealand. Michigan's rather small import trade with New Zealand declined discernibly from 1951 to 1953. The value of Michigan's imports from this self-governing sovereign British state in the Pacific measured $317.3 thousand in 1951, compared to $263.1 thousand

---

[28]Meat products are included within the edible animals and animal products classification, whereas wool and wool products are contained within the textile fibers and manufactures class.

[29]The reason for the nonexistence of exports of automotive equipment from Michigan to New Zealand in 1952and 1953 was because of a governmental decree on the part of the New Zealand government imposing import controls on motor vehicles from all countries. This decree was put into effect very early in 1952. See Americana Annual: 1953, p. 509.

TABLE LXXVI*

DOLLAR VALUE OF MICHIGAN EXPORTS TO NEW ZEALAND
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	---	---	---
Inedible animals and animal products	---	---	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	---	---	---
Textile fibers and manufactures	---	---	---
Wood and paper	23.8	---	---
Nometallic minerals	---	---	---
Metals and manufactures	10.5	17.9	.3
Machinery and vehicles	720.6	63.1	169.2
Chemicals and related products	---	---	---
Miscellaneous products	---	---	.1
Total	754.8	81.0	169.6

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LXXVII*

DOLLAR VALUE OF MICHIGAN EXPORTS TO NEW ZEALAND
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Accounting, bookkeeping and calculating machines	7.3	62.1	159.8
Cash registers	---	.1	9.1
Automotive equipment	585.8	---	---
Motors, trucks and truck chassis	---	---	---
Passenger cars and chassis	529.3	---	---
Parts for autos, trucks, and busses	56.4	---	---
Bookkeeping and accounting machines, non-descriptive	54.0	---	---
Bookkeeping and accounting machines, descriptive and textwriting	3.6	---	---
Adding machines, new except punched	6.1	---	---
Industrial furnaces and ovens	53.0	---	---
Carbon steel sheets, black, ungalvanized, coal rolled	---	17.3	---
Others	45.1	1.5	.7
Total	754.8	81.0	169.6

*Source: Unpublished Machine Tabulation Sheets: EM 563. Figures will not necessarily add to totals because of rounding.

TABLE LXXVIII*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM NEW ZEALAND
BY COMMODITY CLASSIFICATION
(IN THOUSANDS OF DOLLARS)

Commodity	1951	1952	1953
Edible animals and animal products	259.8	62.0	153.3
Inedible animals and animal products	---	19.8	---
Vegetable food products and beverages	---	---	---
Inedible vegetable products	4.7	---	---
Textile fibers and manufactures	51.1	181.0	4.7
Wood and paper	---	---	---
Nonmetallic minerals	---	---	---
Metals and manufactures	---	---	---
Machinery and vehicles	---	---	---
Chemicals and related products	---	---	---
Miscellaneous products	1.7	.3	---
Total	317.3	263.1	158.0

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

TABLE LXXIX*

DOLLAR VALUE OF MICHIGAN IMPORTS FROM NEW ZEALAND
BY SPECIAL COMMODITIES
(IN THOUSANDS OF DOLLARS)

Special Commodity	1951	1952	1953
Meat products	259.8	62.0	153.3
Wool and wool products	51.1	181.0	4.7
Others	6.4	20.1	2.0
Total	317.3	263.1	158.0

*Source: Unpublished Machine Tabulation Sheets: IM 154. Figures will not necessarily add to totals because of rounding.

in 1952, and $158.0 thousand in 1953.

New Zealand exported largely two products to Michigan, meat products, and wool and wool products, during the 1951-52-53 period. In 1951, when the value of Michigan's imports from New Zealand was at its pinnacle, the state imported approximately $260.0 thousand worth of New Zealand meat products and $51.1 thousand worth of their wool and wool products. In 1952, however, Michigan's dollar value of imports of New Zealand wool and wool products increased to $181.0 thousand, while the dollar value of the state's imports of New Zealand's meat products decreased to $62.0 thousand. It will be noted that the decline in the state's import value of New Zealand's meat products from 1951 to 1952 was greater than the increase in the import value of their wool and wool products during the same period, thus accounting for the decline in the total value of the state's imports from New Zealand between 1951 and 1952. In 1953, the value of Michigan's imports of New Zealand meat products showed a rise from its 1952 figure, but this augmentation was not enough to compensate for the diminution in the state's import of New Zealand wool and wool products during the same period, and so the net effect once again was a smaller total Michigan-New Zealand import trade than that which had taken place between the two areas during the preceding year.

Michigan's Exports and Imports to and from Other Countries.[23] Michigan's exports to Spain were rather meager in the three year period under

---

[30]There were numerous other countries with which Michigan traded directly during the 1951 to 1953 period in addition to the eleven mentioned above. For various reasons, however, it was decided that these additional

study. The value of Michigan's exports to Spain was nil in 1951; in 1952, Michigan's exports to Franco-land were valued at $373.0 thousand; and in 1953, they were valued at $102.3 thousand. The main product which the state exported to Spain during all three years under study was power driven metal-working machinery.

Michigan's imports from Spain were much more significant, however, than the state's exports to it. The value of Michigan's imports from that nation amounted to between $750.0 thousand and $1.0 million in all of the years under consideration. The principal and almost exclusive product which Michigan imported from this country during the 1951 to 1953 period was fruits and preparations. The imported value of this item totalled $725.9 thousand in 1951, $886.0 thousand in 1952, and $934.2 thousand in 1953.

Michigan's import, as well as its export trade with Denmark, except for 1953, was too insignificant to mention. In 1953, however, the value of Michigan's exports to Denmark totalled $374.0 thousand while imports from the same country amounted to $594.1 thousand.[31]

Automotive equipment was the principal product exported by Michigan

---

countries would not be discussed in the same detail as the others, nor would tables pertaining to them be included in the thesis. The reasons for putting these countries in the category of others were: relatively small trade with Michigan both import- and export-wise; trade with Michigan insignificant except for one of the three years considered; or lack of significance to Michigan's trade in either the export or import area. Thus, if a country's trade with Michigan fits any of the above listed characteristics, that country's trade with Michigan will be treated here under "other countries."

[31]In 1951 and 1952, the dollar values of Michigan's exports from Denmark were $61.4 thousand and $20.5 thousand, respectively, whereas for the import trade during the same two years the values were $47.2 thousand and $130.7 thousand, respectively.

to Denmark in 1953. In fact, the value of Michigan's exportation of this one product to Denmark in 1953 totalled $351.3 thousand, or 94 percent of the total export trade.

Denmark's exports to Michigan in 1951 also consisted largely of one item. This item was Danish prepared or preserved pork valued at $373.4 thousand.

Michigan's direct trade with Ireland was the reverse of the state's trade with Spain and Denmark, in that its imports from Ireland were negligible, whereas the value of Michigan's exports to that country was of some importance.[32] The dollar value of Michigan's exports to Ireland was largest in 1951 when it amounted to nearly $700.0 thousand. In 1952, the value of the trade slacked off to $294.7 thousand, and by 1953, it had receded to $84.8 thousand. The main products which Michigan exported to Ireland during the three year period, in order of value magnitude, were: construction and mining equipment; automotive equipment; wheel type tractors; tracklaying tractors; and paper and pulp mill machinery and parts.

Michigan's exports to Austria, as well as the imports from it, were of relatively minor dollar value during the whole period under investigation. For Michigan's exports to Austria, the respective values were $45.7 thousand in 1951, $40.6 thousand in 1952, and $22.2 thousand in 1953. The respective values for the goods Michigan imported from Austria were $22.5 thousand in 1951, $15.5 thousand in 1952, and $19.3 thousand in 1953.

---

[32] The value of Michigan's imports from Ireland for 1951, 1952, and 1953 were, respectively, $11.1 thousand, $1.4 thousand, and $5.2 thousand.

Czechoslovakia was the only other European country not previously mentioned with which Michigan had direct trade. Michigan had no export trade with Czechoslovakia during the whole period under observation, and it was only in 1951 that the state imported anything from it. In that year, Michigan imported merchandise, namely, glass and glass products, and coal tar products, from Czechoslovakia valued at $112.9 thousand.[33]

In the Latin and South American area there were seven countries with which Michigan traded to some extent during the three year period. These countries were Cuba, Mexico, Dominican Republic, Brazil, Venezuela, British Guiana, and Colombia.

Michigan's trade with Cuba was of a mentionable proportion only during 1953 of the three years considered. In 1951 and 1952, Michigan's exports to Cuba were valued at less than $2.0 thousand in each year, while the value of imports, though somewhat more significant, was $77.0 thousand and $62.7 thousand in the respective years. In 1953, the value of the state's exports to Cuba was $140.4 thousand, while for imports it totalled $657.2 thousand. Michigan's exports to Cuba, though quite diverse, consisted mainly of electric refrigerators and parts, and wheat flour. These two articles made up nearly one-half of Michigan's total 1953 export trade with Cuba. As for the state's import trade with Cuba in 1953, it consisted mainly of the importation by Michigan of Cuban grown sugar.

---

[33]For 1951, Michigan's imports of Czechoslovakian coal tar products and glass and glass products were valued respectively at $85.1 thousand, and $26.1 thousand.

The value of Michigan's export trade with Mexico, though small in 1953, was of some magnitude in 1951 and 1952. In 1951, the state's exports to Mexico had a value of $194.8 thousand, while in 1952, they had a value of $51.7 thousand. The main products which were exported to Mexico in 1951 and 1952 were: fertilizer materials; chemical pigments; and automotive equipment. These three items made up approximately 50 percent of the export trade during 1951 and 1952.[34]

Michigan traded with the Dominican Republic in only one of the three years under observation, 1952; the entire trade consisted of a single shipment of construction, mining, and excavating equipment valued at $203.5 thousand to the Latin American republic.

The value of Michigan's trade with Brazil, like with so many other countries in the South and Latin American area, was significant in only one year; in Brazil's case the significant year was 1951. In that year, Michigan imported $536.7 thousand worth of Brazilian goods.[35] In 1952 and 1953, Michigan imported Brazilian goods valued respectively at $56.7 thousand and $1.6 thousand. The value of Michigan's exports to Brazil was $59.3 thousand in 1951, $2.4 thousand in 1952, and $3.2 thousand in 1953.

Venezuela was, like Brazil and others, a country with which Michigan

---

[34]Michigan's imports from Mexico totalled $67.8 thousand in 1951, $69.5 thousand in 1952, and $34.7 thousand in 1953.

[35]Of the $536.7 thousand worth of merchandise imported from Brazil in 1951, $509.0 thousand worth of it consisted of iron ore and concentrates. The remainder of the trade was precious and semiprecious stones, including industrial diamonds.

carried on significant trade during only one of the three years under consideration; in Venezuela's circumstance the year was 1953. In that year, Michigan exported $777.7 thousand worth of passenger cars and chassis, $41.2 thousand worth of automotive parts, and $37.8 thousand worth of motor trucks and truck chassis to Venezuela. Michigan's total exports to Venezuela in 1953 were valued at $950.6 thousand. Michigan's imports from Venezuela, on the other hand, were practically nonexistent in all three years under consideration.[36]

Another country with which Michigan traded in only one of the three years under study was British Guiana. Michigan's trade with British Guiana was of noteworthy size in 1951, and then only in regard to exports. Michigan exported $468.5 thousand worth of merchandise to British Guiana in 1951; the total trade consisted of construction, mining, and excavating equipment.[37]

Michigan's trade with Colombia during the three year period under observation consisted of a two year export trade. In 1952, Michigan exported goods worth $644.8 thousand to Colombia, and in 1953, $333.5 thousand. The total export trade for both 1952 and 1953 consisted of products from the

---

[36] The value of Michigan's imports from Venezuela for the 1951-52-53 period were, respectively, $8.8 thousand, $4.4 thousand, and $.6 thousand. The respective values for Michigan's exports to Venezuela in 1951 and 1952 were $45.2 thousand, and $.9 thousand.

[37] Michigan's imports from British Guiana were valued at $1.9 thousand, $2.8 thousand, and $2.1 thousand for the respective 1951-52-53 years. The respective 1952 and 1953 export figures were $94.8 thousand, and $10.4 thousand.

machinery and vehicles classification. The main product in turn which was exported to Colombia by Michigan was internal combustion engines. The export of this grouping was valued at $625.0 thousand in 1952, and $333.5 thousand in 1953.[38] Thus, with Colombia, we conclude the analysis of Michigan's trade with South and Latin American areas. The next area to be taken up in regard to Michigan's trade is the Asiatic area.

Michigan's trade with Japan was of a sporadic nature during the 1951-52-53 period. Michigan's exports to Japan during the period were respectively $3.4 thousand, $104.8 thousand, and $343.3 thousand. The principal product which Michigan exported in 1952 was jewelry with a value of $90.7 thousand. In 1953, the main articles which Michigan exported were: alcohols valued at $134.3 thousand; organic chemicals valued at $58.0 thousand; coal tar intermediaries with $45.0 thousand; chemical specialty compounds valued at $23.2 thousand; and hides and skins worth $18.4 thousand. Thus, in addition to the total export trade having a fluctuating value, the item which made up the trade had little consistency over the period.

The value of Michigan's imports from Japan totalled $143.8 thousand in 1951, $96.0 thousand in 1952, and $357.8 thousand in 1953. In 1951, the leading articles of import were crude aluminum, and brass and bronze manufactures. These items were valued respectively at $23.2 thousand and $22.6 thousand in 1951. Clay and clay products valued at $24.3 thousand

---

[38]Michigan's imports from Colombia were negligible in all three years considered. In the other export year, 1951, the value of goods exported by Michigan to Colombia was $2.9 thousand.

was the leading item of import in 1952. And in 1953, the leading import items were scrap aluminum, and nickel manufactures with respective values of $101.4 thousand, and $102.7 thousand. Therefore, it can be concluded that Michigan's imports from Japan, as well as the exports to it, were of a sporadic and inconsistent nature during the three year period under observation.

Michigan's trade with India was also of a sporadic nature over the 1951-52-53 period. Michigan's big export year was 1951 when goods valued at $218.1 thousand were shipped to India. In 1952, the trade dropped to $26.3 thousand, and by 1953, it had declined to nothing. The values of Michigan's imports from India fluctuated from $178.5 thousand in 1951, to $82.6 thousand in 1952, to $317.1 thousand in 1953.

The main article of the Michigan-India export trade in 1951, the only significant year, was automotive equipment. In that year, of the $218.1 thousand worth of Michigan merchandise shipped to India, $212.6 thousand of it consisted of automotive equipment. Michigan's imports from India during the three year period under study consisted mainly of inedible vegetable products. The value of Michigan's imports of products from this classification totalled $145.1 thousand in 1951, $55.1 thousand in 1952, and $220.7 thousand in 1953.[39]

---

[39]Unfortunately, the best breakdown of trade the investigator was able to get in the case of Michigan's imports from India was a category breakdown; the reason for this being that due to the tremendous number of import classifications set up by the Department of Commerce, it was impossible in a study of this type to get a breakdown of them all. Thus, it was the task of the present investigator to select those hundred or more items and groupings which were thought to describe best Michigan's trade. In the case of Michigan's imports from India, however, it so happened that none of the articles of trade fell into the hundred or more groupings which were set up.

Michigan's trade with Ceylon during the 1951-52-53 period consisted exclusively of an import nature. Moreover, it was only in 1951 that Michigan's imports from Ceylon were of any significance. In that year Ceylon shipped goods to Michigan valued at $134.7 thousand. Two items, rubber and nonmetallic minerals, made up the Ceylon trade in 1951; they had respective values of $56.0 thousand, and $78.0 thousand.

British Malaya was another area with which Michigan had import relations, but not export during the 1951 to 1953 era. The respective values for Michigan's imports from British Malaya during the three years under observation were $14.6 thousand, $148.2 thousand, and $56.3 thousand. The main product imported was rubber with a value totalling $13.6 thousand in 1951, $148.2 thousand in 1952, and $10.4 thousand in 1953. The only other British-Malayan item which Michigan imported in quantity was $46.0 thousand worth of tin in 1953.

In Michigan's trade with Africa, four areas come into focus. Importwise, the main African area with which Michigan traded was Liberia. In 1951, Michigan imported $38.8 thousand worth of products from Liberia. In 1952, the value of the Michigan-Liberia import trade rose to $538.0 thousand. And in 1953, the value of the trade was $507.5 thousand. Michigan's imports from Liberia consisted of one grouping of products, iron ore and concentrates. In all three years under consideration Michigan's imports in this grouping were synonomous with the total.[40] Moreover, the increase

---

[40] There were no Michigan exports to Liberia in any of the 1951 to 1953 years.

in Michigan's imports from Liberia from 1951 to 1952-1953 was due to the fact that in 1952 and 1953, Michigan, as well as the rest of the United States, was becoming more dependent upon foreign iron ore.

The African area of second ranking importance in Michigan's import picture during the 1951-52-53 period was the Belgian Congo. The respective values for Michigan's imports from this area, in thousands of dollars were $242.3 thousand, $153.9 thousand, and $262.9 thousand.

Moreover, Michigan's entire import trade with the Belgian Congo consisted of the state's importation of precious stones. Also, as with Liberia, the state carried on no export trade with the Belgian Congo.

French Morocco was the main African recipient of Michigan goods. Michigan exported goods to French Morocco valued at $111.0 thousand in 1951, $537.2 thousand in 1952, and $221.9 thousand in 1953. In 1951, the main Michigan item exported was automotive equipment with a value of $99.5 thousand, likewise in 1952, when the value of the grouping amounted to $492.1 thousand, and in 1953, when Michigan shipped automotive equipment valued at $206.6 thousand to French Morocco.

A comparison of the value of the state's exports of automotive equipment to French Morocco with Michigan's total exports to French Morocco shows that there were no other items exported to any significant degree. Michigan imports from French Morocco, except in 1952, when they had a value of $9.0 thousand, were nonexistent.

The Union of South Africa was another African country to which Michigan exported goods during the 1951-52-53 period. In addition, Michigan also had some import trade with this country. The respective values

of Michigan's yearly export trade with the Union of South Africa during the 1951 to 1953 period were $68.7 thousand, $44.4 thousand, and $210.9 thousand. The value of Michigan's imports from the Union of South Africa during the same period totalled $130.5 thousand in 1951, $70.9 thousand in 1952, and $21.8 thousand in 1953. On the import side, the main item which Michigan imported from this South African country in all three years was precious and semiprecious stones.

On the other hand, Michigan's principal products of export to the Union of South Africa during the 1951 to 1953 period were: accounting, bookkeeping, and calculating machines; and passenger cars and chassis.

Michigan's trade with Algeria was one way; it consisted only of exports to Algeria. The value of Michigan's exports to Algeria, though nonexistent in 1951, amounted to $67.7 thousand in 1952, and $104.6 thousand in 1953. For the most part, Michigan's exports to Algeria consisted of construction, excavating, and mining equipment, tracklaying tractors, and electric refrigerators and parts.

Michigan's trade with Tangiers was also an export trade. The export value of this trade in 1951 was only $5.4 thousand. In 1952, however, the value of Michigan's exports to Tangiers registered $104.4 thousand, whereas in 1953, it was down to $19.3 thousand. Thus, in only one of the years under study, 1952, was the trade of any significance. A breakdown of Michigan's exports to Tangiers in 1952, the only significant year, reveals that the trade consisted of one grouping, automotive equipment. In that year, Michigan exported passenger cars and chassis valued at $96.5 thousand to Tangiers.

The last African country whose trade with Michigan is examined is Egypt. Michigan's trade with Egypt was worthy of note only in 1952. In that year, Michigan exported merchandise with a total value of $98.9 thousand to the land of the Nile. This export trade consisted exclusively of medicinal and pharmaceutical supplies. In the other two export years, as well as all three import years, Michigan's trade with Egypt was negligible.

D. Summary of Chapters Four and Five. Michigan's trade with the rest of the world may be compressed tersely into a few summary statements. First, the foreign trade of the state is immense, approximating a billion dollars a year for exports and well over five hundred million dollars a year for imports. Second, Canada dominates the trade, export-wise, as well as import-wise. Third, the Michigan export trade to countries other than Canada declined from 1951 to 1953, with the decline due largely to the falling off of the state's exports of dairy products and lard to Great Britain. Fourth, the state's import trade from countries other than Canada increased during the three year period, with the increase due mainly to Michigan's increased importation of iron and steel semimanufactures from Western Europe. Fifth, the products which Michigan exports are chiefly Michigan produced and processed, namely, automotive equipment and machinery of all types; this is true whether the state was shipping to Canada or whether it was shipping to any other area of the world. And, sixth, the items which the state imports are largely articles in a raw or semi-processed form, and thus in need of further manufacture. It will be

recalled that the main items which the state imported were wood and paper, and metals and metal manufactures.[41]

Therefore, in conclusion, the present investigator would say that Michigan's foreign trade consists largely of the export of machinery and vehicles, and the import of paper and pulp, and metals and metal manufactures.

In the chapter to follow, on the basis of the findings in chapters two, three, four, and five, the significance of Michigan's foreign trade to the state's economy will be pointed out. Moreover, several public policy proposals will be suggested which, if followed, should benefit the state and its foreign trade.

---

[41] The one notable exception to this statement, the reader will recall, was Michigan's importation of Canadian agricultural machinery. This importation was due to the structure of the farm implement industry in which the major implement companies construct certain pieces of machinery in Canada and certain implements are built in the United States. Thus, many of the implements that Americans buy are built in Canada by American-Canadian firms. Likewise, many farm implements that Canadians buy are American built by American-Canadian firms.

CHAPTER VI

SIGNIFICANCE OF FOREIGN TRADE TO MICHIGAN AND SOME POLICY RECOMMENDATIONS

The purpose of this chapter is an attempt to point out the significance of Michigan's foreign trade to the state's economy. In addition, where germane, the writer will analyze some of the more important public policy questions pertaining to Michigan's foreign trade, and, where possible, recommend changes in present policy which would be advantageous for the state's economy. A third objective is to tie the material in chapter two, "A Brief Outline of Michigan's History, Resources, Products, and Activities," into a cohesive unit with the subject matter in chapters three, four and five dealing with the state's foreign trade.[1]

---

[1]Unfortunately, due to the diverse methods employed by various governmental agencies in collecting and reporting data, the writer is able to compare and link the materials in chapter two, three, four, and five in only a very general fashion. For example, the Annual Survey of Manufactures, which is available for the years between 1947 and 1952, does not have individual industry breakdowns. What the Annual Survey does have is sixteen large breakdowns, which do not, however, correspond to the eleven commodity classifications set up by the Foreign Trade Division of the Bureau of the Census. In fact, there is very little relationship between the two. In addition, the Annual Survey does not have production figures, but has, instead, "value added by manufacture" statistics. A second source which is available is the Census of Manufactures. In this source it is possible to get a tolerably good industry breakdown, but again there are several drawbacks to using these data. In the first place, they are 1947 data, whereas the export data used in the thesis are for the years 1951-52-53. The second drawback is that even in the Census of Manufactures, the data are not production data for the various industries, but, instead, are "value added by manufacture" data. Thus the only solution to the problem is to link chapters two and three, four and five together in a general fashion. By general, meaning something less specific than comparing 1952

I. SIGNIFICANCE OF FOREIGN TRADE TO MICHIGAN

A. Significance of Exports. As pointed out in chapter two, the leading Michigan minerals are iron ore, petroleum, salt, copper, limestone, and sand and gravel. Of these minerals, all but limestone, and sand and gravel are exported in their natural state.

In 1951, Michigan's output of iron ore was more than 13.5 million tons valued at over $78.1 million. In that same year, the state's export of iron ore was valued at $8.5 million. Moreover, the average export value for iron ore during the 1951 to 1953 period was $7.7 million. Thus it can be gathered from these data that a considerable portion of the state's production of iron ore is exported.

The state's second leading mineral, value-wise, is petroleum. Michigan's output of petroleum in 1951 totalled 13.9 million barrels valued at $37.9 million. During the period Michigan exported $30.5 million worth of crude petroleum. Undoubtedly, as pointed out in more detail in chapter four, all of the $30.5 million worth of petroleum exported from the state did not consist of Michigan produced oil. Nevertheless, it can be said with relative impunity that a considerable portion of the exported product emanated from the state's oil fields. The average value of the petroleum exported from Michigan during the 1951-52-53 period was $23.8 million.

---

export data with, say, 1952 production data. In other words, what will be done will be to point out the main industries in Michigan based on 1947 data, for the most part, and show how they are also, in most cases, the main export industries. Moreover, for such items as fruit, vegetables, livestock and livestock products, dairy and dairy products, and mineral products it is possible to compare actual 1951 production data with comparable export data for the state.

The value of Michigan's salt production in 1951 was $21.2 million. This dollar value from a production of 5.1 million tons made it the leading salt producting state in the nation. Also, in 1951, Michigan exported salt valued at $1.0 million to foreign countries, thereby meaning that approximately 5 percent of the salt produced in the state was exported. In 1952 and 1953, the export values for Michigan salt were $1.1 million and $.7 million, respectively.

A fourth mineral which Michigan produces and exports in sizeable quantity is copper. This metal had a production value for the state in 1951 of 49.3 million pounds and a dollar value of $12.1 million. During the same year, 1951, Michigan exported copper ore valued at $.4 million. In 1952 and 1953, however, Michigan's export of copper ore was valued at well over $1.0 million. The other two leading Michigan produced minerals, limestone, and sand and gravel, are not themselves exported in any quantity. Nevertheless, this is not to be construed as meaning that foreign trade is inconsequential to these two products. For example, both of these items are used in the formation of other products which are exported in considerable magnitude, such as steel and steel products, glass and glass products, and cement, among others.

Thus it could be concluded from the foregoing analysis that a considerable portion of Michigan's mineral products is exported either directly or indirectly to foreign countries. Let us see if this is true for the agricultural sector of Michigan's economy.

Michigan, as a leading agricultural state, is a large producer of a number of major export commodities. The Michigan produced agricultural

items which had the largest volume of exports during the 1951 to 1953 period were livestock and livestock products, dairy products, fresh vegetables, fresh fruits, and corn. These items had a total export value from Michigan in 1951 of $43.1 million.

The livestock and livestock products industry in Michigan, which had a total value of production of approximately $500.0 million in 1951, was one of the leading items of exports in that same year with an export value of $15.9 million. This meant that over 3 percent of the products of the livestock industry were exported in 1951. Moreover, if one compares the value of exports with the value of total sales in the livestock industry in 1951, one finds that over 5 percent of the total sales in the industry were made to foreign countries.

Another large area of export in 1951 was dairy products. Michigan, in 1951, produced dairy products valued at $202.3 million. In the same year, 1951, the state exported dairy products valued at $8.1 million, thus meaning that foreign countries took approximately 4 percent of all the dairy products produced in Michigan in 1951.

One of the largest items of export in the entire Michigan agricultural picture is fresh vegetables. This classification had a dollar value of exports in 1951 of $10.5 million. This compared with a total value of fresh vegetables sold for the state of $40.6 million during the same year.

Fresh fruits, other than subtropical fruits, is another item which Michigan produces and exports in tremendous quantities. In 1951, the harvest of fresh fruits in Michigan was valued at approximately $36.0 million.

During the same year, Michigan exported $6.6 million worth of that harvest. In 1952 and 1953, the respective export figures were $9.3 million and $9.5 million.

The dollar value of Michigan's corn production in 1951 was $120.8 million. The state's dollar exported value of this crop, also in 1951, was $2.0 million. Though this means that only about 1.7 percent of Michigan's corn crop is exported directly, it should not be forgotten that considerable Michigan corn is exported in the form of meat products.

Of the remaining major items in Michigan's agricultural structure, namely, wheat, oats, barley, rye, buckwheat, and soybeans, all had an export value of less than $1.0 million each for the year, 1951. This again, however, should not be construed as meaning foreign trade has no importance for these products.

Summarizing the role of exports in Michigan's agricultural picture, it can be stated rather convincingly that exports play a significant part. It is estimated that exports in this group produced in Michigan were valued somewhere in the neighborhood of $50.0 million in 1951.[2] This compares with an estimated value of agricultural production in the state of $781.0 million, and a value of all farm products sold in the state of approximately $475.0 million; this means that about 6.5 percent of the total agricultural production of the state was exported in 1951, and that of all Michigan's agricultural products sold on the market approximately 10 percent of them were sold out of the United States.

---

[2]See pp. 68, 70, and 72 of this study.

Manufacturing is the most important economic activity in Michigan. The state's "value added by manufacture" in 1947, when the last Census of Manufactures was taken, was about $5.1 billion. In 1952, according to the Annual Survey of Manufactures, the state's "value added by manufacture" was approximately $8.3 billion. Moreover, approximately one million people in the state are employed in manufacturing. What, then, is the importance of exports to the state's industrial might, and how are the individual manufacturing industries affected by exports? In answer to this question let us look first at those industries which we are best able to compare output data with export data.

The motor vehicle industry which employs nearly 400,000 workers, pays wages of well over $1.0 billion a year, and which had a "value added by manufacture" for 1947 of $1.9 billion, is also the leading export industry in Michigan. In 1951, the exports of this industry totalled $187.1 million, in 1952, $203.1 million, and in 1953, $243.1 million. Thus one sees that the state's largest and most productive industry is also the leading industry of export.

The chemicals and related products industry is another case in point of a Michigan industry excelling in both production and exports. In 1952, the chemicals and related products industry paid 36,652 persons $169.2 million and had a "value added by manufacture" of $411.1 million. In that same year the value of exports of the state in that same industry totalled $60.9 million. The average yearly export figure for the industry during the 1951-52 period was a comparable $59.5 million.

The refrigeration machinery industry is another major industry in Michigan which exports a substantial amount of its output. This industry in 1947 employed 18,212 men, paid them wages and salaries of $54.0 million, and had a "value added by manufacture" of $102.4 million. This same industry during the 1951-53 period exported products valued at $18.0 million, $29.7 million, and $34.2 million, respectively.

The Michigan hardware manufacturing industry which in 1947 employed 16,759 persons, paying them wages and salaries of over $50.0 million and having a "value added by manufacture" of $77.0 million is also a large exporter of goods. In 1951, this industry exported goods valued at $2.5 million; in 1952, its exports totalled $7.2 million; and in 1953, it exported hardware merchandise valued at $7.7 million.

The internal combustion engine industry, also one of Michigan's leading industries, in regard to number of employees, 14,356, wages paid, $50.5 million, and "value added by manufacture," $70.1, is likewise a leading export industry.[3] Its dollar value of exports average over $20.0 million per year for the entire 1951 to 1953 period. This industry, like those previously mentioned, shows once again that those industries which have the largest payrolls and employ large numbers of people are also able to export very effectively.

The power transmission equipment industry is another prime example of an important Michigan industry which had substantial exports. In 1947, this industry employed 6,091 persons, paid them wages and salaries of $19.5

---

[3]These data are for the year 1947.

million, and had a "value added by manufacture" of $31.2 million. The value of exports for this industry, though not available for 1951, in 1952, totalled $4.5 million, and for 1953, $3.9 million.

Another of the state's ranking industries which had substantial exports was the household furniture industry. This industry employed, in 1947, 12,874 employees, paid them wages and salaries of $35.1 million, and had a "value added by manufacture" of $49.3 million. In 1951, the household furniture industry exported $.6 million worth of goods; in 1952, it exported $.8 million; and in 1953, it shipped out merchandise valued at $.9 million.

An industry closely related to the furniture industry, sawmill products, also has a substantial value of exports every year. The exported value of the products from this industry totalled $10.1 million, $10.4 million, and $9.7 million for the 1951 to 1953 years, respectively. This industry, by way of comparison, employed 11,261 persons, paid them wages and salaries of $26.5 million, and had a "value added by manufacture" of $43.8 million in 1947.

Other major Michigan industries which have substantial amounts of exports, as a comparison of chapters two, three, four, and five of this thesis will bear out, but which do not lend themselves to an actual comparison of number of employees, wages, "value added by manufacture," and exports, due to the differences in classification of industries and products by the Census of Manufactures and the Foreign Trade Division of the Bureau of the Census are gray-iron foundries, cutting tools, metal stampings, steel works and rolling mills, fabricated wire products, heating and plumbing

equipment, machine tools, valves and fittings, tractors and farm machinery, screw machine products, motors and generators, special industry machines, general industrial machinery, pumps and compressors, woodworking machinery, and business machines. Moreover, there are, of course, many Michigan industries in addition to those mentioned above which produce export commodities.

In summary, then, Michigan's manufacturing industries which in 1952 employed 1.1 million persons, paid them $4.9 million, and had a "value added by manufacture" of $8.3 billion, exported goods valued at approximately $700.0 million for the same year. In addition, it should be pointed out that the major industries of the state, and also those which pay the highest wages, namely, motor vehicles and equipment, machinery other than electrical,[4] fabricated metal products,[5] and chemicals and related products,[6] are also the industries which have by far the greatest amount of exports.[7]

There are many types of firms, to be sure, which do not directly participate in foreign trade but which contributed heavily to it. These

---

[4]See p. 42 for what is included in this grouping.

[5]See p. 44 for what this grouping includes.

[6]See p. 41 for particular industries included within this grouping.

[7]A conservative estimate would be that these four areas exported goods valued at $500.0 million in 1952. For a discussion of the correlation between wage rates in export industries and wages of industries which have high tariff protection, see Michigan and Foreign Trade, Department of State pp. 3-4.

firms produce commodities necessary for the production of export goods. Among the products which would fall into this grouping are machinery parts, electric motors, special industry machinery, and various textiles, together with machinery employed in the manufacture of exports.

In addition to those Michigan industries producing goods for export, a large number of the state's service-producing industries also contribute to the total export value of the state's economy. Such Michigan establishments as railway companies, steamship lines, motor-transport concerns, warehouses, banks, insurance companies, customs brokers, freight forwarders, and companies engaged in harbor services, all profit in a substantial way from this foreign trade.

Thus several thousand Michigan workers in nonmanufacturing enterprises are directly dependent upon foreign trade for their livelihood. Included in this grouping are railroad engineers, brakemen, switchmen and mechanics, truck drivers, office workers, customs inspectors, warehouse employees, longshoremen, and sailors.

This survey and examination of Michigan's export trade during the period from 1951 to 1953 points up several important facts. First, the study indicates clearly the statistical difficulty in determining either Michigan's importance in United States foreign trade or the importance of foreign trade to Michigan's citizenry. Second, it indicates rather clearly the general magnitude of the trade. Third, the study shows the state's main items of export, both in a general way (commodity classification), as well as in a specific fashion (by items). Fourth, it shows the destination of exports. And, fifth, the study indicates the various sectors of the

economy which are wholly or in part dependent upon exports to foreign countries.

In summary, the evidence is sufficiently clear to indicate a strong concern on the part of the people of Michigan over the maintenance and expansion of foreign markets and the national policies which directly affect these markets.[8]

B. Significance of Imports. Nearly every important industry in Michigan, whether it be agricultural, mining, or manufacturing, is dependent upon imports for some part of its operations. Quantitatively, as pointed out in chapters three and four, the value of Michigan's imports during the 1951 to 1953 period averaged a little over $600.0 million a year. Breaking it down by individual years, one sees that in 1951, the state imported goods valued at $562.4 million; in 1952, the value of the imports totalled $612.4 million; and in 1953, the value of the state's merchandise imports reached $643.5 million.[9]

Imports, as well as exports, however, become much more significant when their qualitative, as well as quantitative aspects, are considered. With this in mind, let us review briefly the chief Michigan imports and see how they affected the Michigan economy.

In the first instance, Michigan is a large importer of food products and beverages. One of the main food items which Michigan imports is fish

---

[8]See J. Hunter and D. Moore, Michigan and Foreign Trade, p. 9, for a corroberation of this point.

[9]See p. 62 of this dissertation.

and fish products. Michigan imported this item to the extent of $7.5 million per year for each of the 1951 to 1953 years. Likewise, Michigan is a large importer of meat and meat products.[10] Other food products which Michigan imports in sizeable amounts are: turnips and rutabagas, and fresh vegetables; as well as fruits and preparations whose total dollar import value came chiefly from the importation of berries, and maple sugar and sirup. These latter mentioned food items had a yearly import value of approximately $1.0 million during the 1951-52-53 period.

The main beverage which Michigan imports is whiskey.[11] As indicated earlier this item had an average import value during the 1951 to 1953 period of $17.3 million.

In addition to the important food products which Michigan imports for its populous, most of the state's industrial groups were wholly or in part dependent upon imported products. This was especially true of the transportation equipment, machinery, primary metals industries, fabricated metal products, and electrical machinery industrial groups.[12] With this in

---

[10]It should be noted that Michigan is also a large exporter of meat and meat products. The meat and meat products imports, however, consist mainly of prepared or preserved pork. This means that though the state is primarily an exporter of meat and meat products, specialized foreign meat items have a ready market in Michigan; for example, Danish hams. See p. 216 of this dissertation.

[11]Naturally, the people of the state consume large quantities of foreign tea and coffee, but as is well known these beverages enter through the eastern, western, and southern United States seaports and thus do not enter into Michigan's import statistics.

[12]These five Michigan industrial groupings employed nearly three quarters of a million workers and had a "value added by manufacture" of $3.8 billion in 1947. It is naturally expected that these figures are much larger today.

mind, then, let us turn our attention to imported products which aid Michigan industries, or to put it another way, imports on which Michigan industry is dependent.

Rubber and allied gums and manufactures is certainly one of the imported products on which Michigan industry is dependent. Michigan imported this item to the extent of $3.7 million in 1951, $7.3 million in 1952, and $4.4 million in 1953. Nonmetallic minerals is another key import on which Michigan industry is dependent. The value of the importation of these minerals exceeded $30.0 million in all the three years considered.[13] Iron and steel semimanufactures is another of Michigan's significant imports. The value of the state's imports of this item totalled $11.2 million in 1951, $20.4 million in 1952, and $41.5 million in 1953. Aluminum is another essential import for Michigan. The average yearly import value of this item for the 1951-52-53 period was roughly $25.0 million. Nickel was, likewise, a key import for Michigan's industry. In 1951, the state imported $38.9 million worth of nickel, in 1952, $45.9 million, and in 1953, $53.4 million worth of the valuable metal. Other nonferrous metals and alloys essential to Michigan's economy, and which are imported in sizeable quantities, are copper, brass and bronze, lead, and zinc. These latter mentioned items had respective yearly dollar import averages for the 1951 to 1953 period of $9.6 million, $2.2 million, $.5 million, and $5.7 million. Another item of large import value which Michigan industry is

---

[13] In this classification were included such items as industrial diamonds, abrasives and abrasive products, asbestos and asbestos manufactures, and sulfur.

dependent on is sawmill products. The importation of this item by the state amounted to nearly $20.0 million per year in the three years considered.[14]

To demonstrate further the dependency of Michigan industry on imports one needs only to study the paper and allied products industries, as well as the printing and publishing industries. These industries, in addition to using many of the import items mentioned above, are heavily dependent upon the importation of foreign newsprint and wood pulp for their subsistence. To indicate the importance of these two imported products, let us review their yearly import values. In 1951, Michigan imported paper base stocks (chiefly chemical wood pulp) valued at $92.0 million. In 1952, the state's imported value of the product was $81.7 million. And in 1953, the state's imported value of this item exceeded $71.0 million. As was pointed out in chapter 4, chemical wood pulp is the second most important item in terms of dollar value brought into the state. The most important single item entering Michigan, value-wise, is newsprint. In 1951, the value of the state's importation of this item was $114.9 million, in 1952, it was $127.4 million, and in 1953, it totalled $130.6 million.[15]

In addition to the above mentioned imports which directly affect various industries, there can be added several additional imports not

---

[14]The main item of the sawmill products category, as pointed out in chapter 4, is sawed boards.

[15]It is probably appropriate to remark that newsprint and chemical wood pulp imports are not necessarily all consumed in Michigan.

directly assignable to any specific industrial area. These imports and their yearly average import values (1951 to 1953) are: twines, $5.9 million; wood manufactures, $11.5 million; unmanufactured wood, $3.6 million; manufactured steel mill products, $3.0 million; electrical machinery and implements, $73.8 million; vehicles other than agricultural, $16.1 million; and nitrogenous fertilizer materials, $15.5 million.

As with the examination of Michigan's export trade the examination of Michigan's import trade also points up several interesting phenomena. First, it indicates once again the statistical difficulties encountered when one tries to measure the magnitude and significance of a state's foreign trade. Second, it gives a picture of both the general magnitude of Michigan's import trade as well as the specific items which are imported into the state. Third, the study tells us where our imports are coming from. And, fourth, from the study it is possible to tell better what sectors of our economy are specifically affected by various imports.

In conclusion, we can say, with relative impunity, that the state's imports enable Michigan industries to produce goods at a lower cost than would be possible without the imports. In the absence of imports there would be four alternatives: first, some commodities would probably not be produced at all; second, some products could be produced at approximately the same cost but they would be of inferior quality; third, other products could be produced of the same quality but at a higher cost; and, fourth, it would be likely that some products would be produced in a poorer quality at a higher cost as expensive inferior domestic substitutes were employed in place of previously cheaper and better quality imports. To this

investigator the importance of this conclusion to the Michigan consumer, the Michigan laborer, and to the Michigan producer should be apparent. Moreover, the significance of the state's imports to the state's, as well as the nation's national defense program is obvious. It is likewise apparent, that with a few exceptions,[16] the prevailing tariff rates serve to reduce the amounts of goods which can be imported, thereby raising the costs of productions of the final products, and consequently to increase the price of final products to consumers.

It should be added that the above conclusions take on even more significance when one realizes that the benefit of exporting accrues mainly in the concurrent ability to import.

II. CONCLUSIONS AND POLICY RECOMMENDATIONS ON MICHIGAN'S FOREIGN TRADE

From what has been said in this thesis one has to conclude that Michigan is an active participant in foreign trade. Indeed, it appears to be a vigorous participation, if we measure the involvement by the dollar value of the state's imports and exports. Nevertheless, in spite of the magnitude of the trade there seems to be ample opportunity for improvement in the state's foreign trade. In other words, there are still many obstacles impeding the untrammeled flow of the state's trade.

---

[16] The exceptions noted above are the free duty status given to the import items, newsprint, wood pulp, and asbestos.

A. Impediments to Trade. Among the obstacles to the state's foreign trade are the following:[17] excessive tariff rates on many of the items which Michigan imports; antiquated customs rules and regulations; quota restrictions of various types; and the retardation of the construction of the St. Lawrence Seaway. Let us look at each of these enumerated obstacles to Michigan's trade.

First of all in regard to tariff rates it should be noted that the main items which Michigan imports, newsprint, and wood pulp, are imported duty free. Nevertheless, in spite of these free goods many of the state's main imports are brought into the state at a fairly high rate of duty. A listing of a few of the ad valorem rates will demonstrate this point. Nickel and alloys, the state's third most significant import product, have an ad valorem rate of 3.9 percent. Michigan's fourth ranking import, crude aluminum, metals and alloys, have an ad valorem rate of 14.3 percent. Zinc blocks, pigs, and slabs have a rate of 7.8 percent; tungsten ore and concentrates, 38.2 percent; manganese ore, 12.2 percent, lead pigs and bars, 8.5 percent; chemicals, various duties - few on the free list. Though, as pointed out earlier, this list is not complete, it is indicative of the point in question.[18]

---

[17]Though our illustrations of barriers to trade have been taken from practices that prevail in Michigan and the United States, it would be quite wrong to infer tha other countries do not engage in the same kind of activities. Nevertheless, if we are going to make any inroads into the unhealthy trade climate which pervades the world it seems as though one of the best starting places is at home.

[18]See Schedule A, Statistical Classification of Commodities Imported into the United States with Rates of Duty and Tariff Paragraphs, U. S. Department of Commerce, Bureau of the Census, Jan. 1, 1954. See also J. Hunter and D. Moore, Michigan and Foreign Trade, p. 17-18.

A second deterrent to trade is antiquated customs rules and procedures which apply to the state's trade. The best example of this is the policy whereby Michigan firms exporting a Michigan manufactured product abroad for some intermediate processing or completion, must pay duty on the entire value of the item returned to Michigan rather than merely on the value of the intermediate processing or manipulation done abroad. Also, under the present law, it is the practice for the customs officials to advise the importer what they consider the proper value of the merchandise to be long after the merchandise has been imported and sold for what the importer considered a reasonable profit. This practice is especially bad when the duty is a percentage of the total value. In fact, in many cases these arbitrary retroactive duties have more than wiped out the profit which the importer had made on the transaction.[19]

The third restriction on Michigan's foreign trade listed above was quota restrictions. There are two main types of quota restrictions which affect trade, import quotas and tariff quotas. Under the "import quotas", importers in the United States are allowed to import only a given amount of a particular product or commodity. The second type of quota, the tariff quota, esists when tariffs are reduced, but only for a specified quantity of imports, after which the old rate applies. And any amount may come in at the higher level. Quotas, of course, can be and usually are far more restrictive of trade than tariffs. The main items affecting Michigan's trade upon which there are quota restrictions are wheat, cattle, milk,

---

[19] _____, "Free Trade for the United States," Inside Michigan, Vol. 2, November 1952, p. 24.

butter, white potatoes, and fillet of fish.[20]

A further deterrent to trade is the retardation of the construction of the St. Lawrence Seaway.

Public attention was focused once again on the St. Lawrence Seaway when Congress passed the so-called St. Lawrence Seaway bill in May of 1954 after thirty years of hesitation. The present plan, in addition to the power project which will not be discussed here, calls for a navigable channel, twenty-seven feet deep from Lake Erie to Montreal. Thus, we see that the present bill would construct this channel only up to Toledo, not to Michigan ports. Therefore, it is important that Michigan citizens should not be content until companion legislation is passed to extend connecting channels up the Detroit, St. Clair, and St. Mary's rivers.

Why should Michigan's citizens be interested in the Seaway and its extension or why should construction of the Seaway not be retarded? One of the most important effects of the Seaway might be that many manufactures that use raw materials imported from areas other than Canada and who have always found it most economical to locate their plants on the coast, even though they distributed their products nationally, might now find it advantageous to set up branch plants in the Midwest. Moreover, the Seaway will admit bulky raw materials into the Great Lakes, especially the overseas iron ore on which this country is becoming increasingly dependent as the

---

[20]For a more detailed account of the quota problem see Lawrence Witt, "Our Agricultural and Trade Policies," Journal of Farm Economics, Vol. 32, May 1950, pp. 171-72.

high-grade deposits in the Mesabi run out. As David Luck said,

> The future of our steel-using industries is tied directly to economical steel supply, coming mainly from plants served through the lower lake ports which the authorized waterway will reach. Potential migration of the steel industry away from our region, with the imminent depletion of northern ore reserves, is no idle threat and all industry is increasingly dependent on imported raw materials. Hence the Seaway is needed assurance of our industrial future.[21]

In addition, the Seaway will open new world markets to products of the Midwest by reducing transportation cost between the Midwest and overseas points. In other words, our position as exporter is also at stake, and this can be remedied when vessels come up to Michigan docks to load. For example, the volume of automobiles now assembled in seaboard plants hints possible greater loss of Michigan's share of the industry unless a complete Seaway is realized. All in all, the extension of the Seaway to Michigan ports should cause a significant expansion in the total economic activity of the state, as well as to the entire Great Lakes area.

From what has been said in the preceding paragraphs it seems fair to conclude that for Michigan to have a freer or less trammeled trade it is necessary that we have a gradual lowering of tariffs on products

---

[21] David J. Luck, "The Seaway," Business Topics, Vol. 2, June 1954, p. 31. See also "St. Lawrence: Power for Two Nations and a Pathway for Ships," Business Week, June 12, 1954, pp. 134-150. Sell also Martin G. Glaeser, "The St. Lawrence Seaway and Power Project," Land Economics, Vol. 30, November 1954, pp. 290-300. Cf. also F. N. Menefee, "The St. Lawrence Seaway and Power Project," Michigan Business Review, Vol. 3, November 1951, pp. 7-11. Incidentally, all of the above listed articles or authors see the St. Lawrence project as an excellent source of power and a provision for cheap transportation which would be self-supporting and self-amortizing.

imported; that we have an elimination of quota restrictions; that we have some sweeping revisions in customs procedure; and that the extension of the St. Lawrence Seaway to encompass the qualified ports of Michigan be completed at an early date.

B. Gains to Michigan from Freer Trade. The final question to be answered, then, is if all of these policy recommendations were followed what would be the likely result for the state? In the first instance, as a result of the removal of the impediments to trade mentioned above, Michigan would realize some of the benefits of an increase in world output made possible by a more efficient use of the factors of production. With increased trade as a result of a lowering of trade barriers[22] (tariffs and quotas), the pattern of factor specialization would improve and total production would rise. As a result of the above, factor productivity would increase making the cost of our imports, in terms of the factors needed to produce the exports that had to be surrendered for them lower.

A second benefit which would accrue to Michigan from a less restricted foreign trade would be an increased stability in the demand for some of our exports. The reader will recall in our examination of Michigan exports to the various countries of the world that in several of these countries there were wide fluctuations in the demand for the state's goods. This instability has been, for the most part, the result of the periodic crises that have developed in the foreign Balance of Payments,

---

[22] Actually the passage of the Seaway bill and customs procedure simplication could be looked upon as lowering of trade barriers too.

especially in relation to the dollar. As we saw in our country studies, Great Britain, Australia, and New Zealand, among others, whenever they got into Balance of Payment difficulties they made severe cuts in their purchases of particular products from Michigan.[23] Such shifts in demand cause serious difficulties and they would be far less frequent if conditions permitted trade to flow more freely.

The third benefit accruing to Michigan from a healthier trade might be considered an outcropping of the first. Because of the increase and improvement in the state's trade with other countries there would very likely be an advance in the economies of the countries with which we trade. This would be especially true of Michigan's neighbor and best trade partner, Canada. As a country's development proceeds, and its productivity rises, it usually buys more and more from abroad. Therefore Canada, whose economy we assume would improve as a result of a healthier trade, would now be a larger demander of goods. Concomitantly, since Michigan is one of the leading exporters to Canada, the state could expect a significant share of the increased demand to be directed toward it. In return, Michigan should find it possible, due to the fact that foreign costs should decline as factor efficiency abroad increases, to take more imports. With the increase in trade the state should then enjoy real advantages.

A further point that needs elaboration here, however, is that with gains to be made by increased trade and economic development abroad there

---

[23]See especially pp. 149, 201, and 209 of this study.

there are also the possibilities of loss to ourselves in some areas. By this we mean that certain Michigan industries are going to be hurt by the competition which will come from industries developing in other countries as a result of our extended trade program. Development is not likely to proceed with an equally rapid improvement in the efficiency of all the industries of a country. Actually, efficiency may grow more rapidly not in an area's present export industries, but in others. To the extent that these other industries are competitive with our own we may be temporarily hurt. Goods in which we previously had a comparative advantage might now be at a disadvantage and vice versa, thus making a structural readjustment of our economy desirable. The old export industries would not continue to undersell those of other countries, or we would now pay more for our imports than before. Thus, if the economic development abroad turned out to be competitive we would be at a disadvantage for awhile until we had developed new industries which could compete.

It is by no means certain, however, in the case of Michigan that economic development abroad would be directed toward raising productivity in industries which are competitive with Michigan.[24] As is well known, countries enjoy different resources, different skills, and different proportions of productive factors. Thus it would not make sense for most countries to try to duplicate our industrial structure. What those countries should do instead is to concentrate on those industries in which

---

[24]This statement is based largely on the status of the Michigan-Canadian trade. The statement, however, would also hold for Michigan's trade with the rest of the world.

they hope to have a chance of securing a competitive advantage over other countries. Among the industries that would qualify under this heading would be most of those producing goods which Michigan is now importing. In other words, as we have established, Michigan is largely an importer of raw materials and semiprocessed manufactures, and these are items in which we are likely to remain at a disadvantage. More than likely, then, countries supplying raw materials and semiprocessed manufactures to Michigan would continue to do so and Michigan would continue to ship advanced manufactures to them. Naturally, Michigan would benefit from such a pattern of development since its imports would cost the state less per unit.

The final conclusion which will be set forth in this paper is that though the state is already enjoying an immense foreign trade the interest of the whole state of Michigan could be served best by the expansion and encouragement of an even larger trade.

One final word: if we think a healthy world trade worth while, it is not a job we can put off until we feel like doing something about it. If we can see a net gain to Michigan, the United States, and the rest of the world from our participation in a less fettered trade, then it is our responsibility to do something about it.

BIBLIOGRAPHY

A. GENERAL WORKS

Beasley, Norman, The Wolverine State, (Garden City, New York: Doubleday, Doran and Company, Inc., 1936).

Brainard, Harry G., International Economics and Public Policy, (New York: Henry Holt and Company, 1954).

Breswick, W. N., "Texas' Stake in Foreign Trade," Unpublished Ph.D. dissertation, University of Texas, 1953.

Callahan, Leo F., My Story of Michigan, (Hillsdale, Michigan: Hillsdale School Supply Company, 1951).

Davis, Darrel H., Geography of Michigan, (Philadelphia: John C. Winston Company, 1923).

Der Puy, W. A., The Nations Forest, (New York: The McMillan Company, 1938).

Emmons, William H., Gold Deposits of the World, (New York: McGraw-Hill Book Company, Inc., 1937).

Fanning, Leonard M., Our Oil Resources, (New York: McGraw-Hill Book Company, Inc., 1945).

Gates, William B., Michigan Copper and Boston Dollars, Cambridge, Mass.: Harvard University Press, 1951).

Hardy, Alfred C., World Shipping, (London: Penguin Books Ltd., 1943).

Hudgins, Bert, Michigan: Geographic Background in the Development of the Commonwealth (Detroit: Wayne University Press, 1948).

Larzelere, Claude S., The Story of Michigan, (Lansing, Mich.: Michigan School Service Company, 1936).

Leith, Charles K., Furness, J. W., and Lewis, Cleons, World Minerals and World Peace, (Washington: The Brookings Institution, 1943).

Lewis, Ferris E., My State and its Story, (Hillsdale, Michigan: Hillsdale School Supply Company, 1939).

McFadden, Clifford H., Kendall, Nery M., and Deosy, George F., Atlas of World Affairs, (New York: Thomas F. Crowell Company, 1946).

_____, Michigan, (New York: Oxford University Press, 1941).

_____, Michigan's Upper Peninsula (Lansing, Michigan: Ebasco Services Inc., 1953).

Newnom, C. L., Michigan's Thirty-Seven Million Acres of Diamonds, (Detroit: The Book of Michigan Company, 1927).

_____, Our 100 Leading Imports in 1949, (Washington: Chamber of Commerce of the United States, 1950).

Stull, DeForest, Geography of Michigan, (Boston: Allyn and Bacon Company, 1939).

Taylor, Henry C., and Taylor, Anne D., World Trade in Agricultural Products, (New York: The McMillan Company, 1943).

Tarshis, Lorie, International Trade and Finance, (New York: John Wiley and Sons, Inc., 1955).

_____, The Oil Producing Industry in your State, (Tulsa: The Independent Petroleum Association, 1950).

B. PERIODICAL ARTICLES AND PAMPHLETS

Alexander, H., "Bootstraps of Michigan," Nations Business, XXXVIII (1950) pp. 37-39.

Beegle, J. Allen, Population Distribution in Michigan, Michigan State College Experiment Station, Special Bulletin No. 342, East Lansing, Michigan, 1942.

Beegle, J. Allen, and Thaden, J. F., Population Change in Michigan with Special Reference to Rural-Urban Migration, 1940-50, Michigan State College Agricultural Experiment Station, Special Bulletin No. 387, East Lansing, Michigan, 1953.

Boyle, Russell J., "What the Soo Means to You," Michigan Tradesmen, July 1949, pp. 3-22.

Bundy, Alice, "Peppermint Industry in Indiana-Michigan," Journal of Geography, XXIX (1930) pp. 353-358.

Carmichael, J. H., "Air Transportation and the Future," Business Topics, 1(1953) pp. 1-3.

Charter, Melville, "Michigan, Mistress of the Lakes," The National Geographic Magazine, LIII(1928), pp. 269-325.

Cook, C. W., "The Influence of the Lumber Industry Upon the Salt Industry of Michigan," Journal of Geography, XV(1916) pp. 117-125.

Currie, Lauchlin, "Trade Policies After Victory," Foreign Commerce Weekly, XVII(1944) pp. 3-5.

Durand, Loyal, Jr., "The Grain Trade of the Great Lakes," Journal of Geography, XXIV(1925) pp. 260-267.

_____, "The Lower Peninsula of Michigan and the Western Michigan Dairy Region: A Segment of the American Dairy Region," Economic Geography, XXVII(1951) pp. 163-183.

Eisiln, Elizabeth, "Celery Growing in the United States," Journal of Geography, XXXVII(1938) pp. 32-36.

"Free Trade for the United States," Inside Michigan, II(1952) pp. 20-24, and 61.

Frost, Richard B., "Michigan - The World Trade State," Inside Michigan, I(1951) pp. 34-37.

Fuller, Earl G., "The Automobile Industry in Michigan," Michigan Historical Magazine, XII(1928) pp. 280-296.

Garrison, Anne C., "The Pharmaceutical Industry: Yesterday, Today and Tomorrow," Business Topics, II(1954) pp. 5-14.

Glaeser, Martin G., "The St. Lawrence Seaway and Power Project," Land Economics, XXX(1954) pp. 290-300.

Hudgins, Bert, "Evolution of Metropolitan Detroit," Economic Geography XXI(1945) pp. 206-220.

_____, "Bean Production in Michigan," Economic Geography, IX(1953) pp. 265-272.

Hunter, John M., "Michigan and Point Four," Business Topics, I(1953) pp. 8-14.

Hunter, John M., and Moore, Donald A., Michigan and Foreign Trade, Governmental Research Bureau, Michigan State College, East Lansing, Michigan, 1953.

Kahler, Ruel C., Basic Chemicals from Michigan, Business Topics, I(1953) pp. 23-32.

Kilpatrick, Carroll, "What Foreign Trade Means to Indiana," Harpers, CCVIII (1954) pp. 61-64.

Luck, David J., "The Iron Horse Carries On," Business Topics, I(1954) pp. 11-16.

Menefee, F. N., "The St. Lawrence Seaway and Power Project," Michigan Business Review, III(1941), pp. 7-11.

"Micromatic Hone," Fortune, XXXV(1947) pp. 86-89.

Miller, E. Willard, "Some Aspects of the United States Mineral Self Sufficiency," Economic Geography, XXIII(1947) pp. 77-84.

Straley, H. W., "Mineral Resources of the World," Economic Geography, XIII (1937) pp. 66-74.

Taylor, E.G.R., "Discussion on the Geographic Distribution of Industry," Geography Journal, XCII(1938) pp. 22-39.

Terpenning, Walter A., "Village and Open Country Communities," Michigan Historical Magazine, XVI(1932) pp. 384-397.

"The Seaway," Business Topics, II(1954) pp. 31-32.

Weeks, Jack, "Detroit: Hard Work and Super Production Make and Keep the City Great," Holiday, II(1947) pp. 18-28, and 117.

White, Arthur S., "Grand Rapids Furniture Centennial," Michigan History Magazine, XII(1928) pp. 267-279.

Whitaker, J. Russell, "The Relation of Agriculture to Mining in the Upper Peninsula of Michigan," Journal of Geography, XXV(1926) pp. 21-30.

Witt, Lawrence, "Agriculture and the Conditions of Postwar Trading," Journal of Farm Economics, XXXII(1950) pp. 814-825.

_____, "International Programs and Agricultural Policy," The Southern Economic Journal, XXI(1954) pp. 166-172.

_____, "Our Agricultural and Trade Policies," Journal of Farm Economics, XXXII(1950), pp. 159-175.

Wolfe, A. B., "Some Population Gradients in the United States," Geographical Review, XVIII(1928) pp. 291-301.

Wright, Alfred J., "Manufacturing Districts of the United States," Economic Geography, XIV(1938) pp. 195-200.

C. GOVERNMENT DOCUMENTS

Agricultural Statistics 1951, United States Department of Agriculture, Washington, D. C., 1951.

Annual Survey of Manufactures: 1952, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1953.

1950 Census of Agriculture: Michigan, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1952.

Census of Manufactures: 1947, Vol. 3, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1953.

Census of Population: 1950, Vol. 2, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1952.

Foreign Commerce and Navigation of the United States: 1941, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1944.

Foreign Trade Report No. EM-563: United States Exports of Domestic and Foreign Merchandise District of Exportation by Country of Destination by Commodity, Unpublished Machine Tabulation Sheets, United States Department of Commerce, Bureau of the Census, Washington, D. C., (Monthly 1951-52-53).

Foreign Trade Report No. IM-154: United States Imports for Immediate Consumption, United States Customs District by Commodity by Country of Origin, Unpublished Machine Tabulation Sheets, United States Department of Commerce, Bureau of the Census, Washington, D. C. (Monthly 1951-52-53).

Foreign Trade Statistics Notes, United States Department of Commerce, Bureau of the Census, Washington, D. C., (Monthly 1951-52-53).

Michigan Agricultural Statistics 1951, Michigan Department of Agriculture, Lansing, Michigan, 1952.

Michigan and Foreign Trade, Department of State, Washington D. C., 1951.

Mineral Industries of Michigan, Department of Conservation, Geological Survey Division, Lansing, Michigan, 1940.

Minerals Yearbook, Department of the Interior, Bureau of Mines, Washington, D. C., 1951-52-53.

Schedule A - Statistical Classification of Foreign Commodities Imported into the United States with Rates of Duty and Tariff Paragraphs, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1951-52-53.

Schedule B - Statistical Classification of Domestic and Foreign Commodities Exported from the United States, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1951-52-53.

Schedule C - Classification of Country Designation Used in Compiling the Foreign Trade Statistics, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1951-52-53.

Statistical Abstract of the United States, United States Department of Commerce, Washington, D. C., (1951-52-53-54).

Summary Report FT900, United States Foreign Trade, United States Department of Commerce, Bureau of the Census, Washington, D. C.,(Monthly).

Summary Report FT930, United States Foreign Trade, United States Department of Commerce, Bureau of the Census, Washington, D. C.,(Monthly).

Summary Report FT950, United States Foreign Trade, United States Department of Commerce, Bureau of the Census, Washington, D. C., (Monthly).

Summary Report FT970, United States Foreign Trade, United States Department of Commerce, Bureau of the Census, Washington, D. C., (Monthly).

Summary Report FT985, United States Foreign Trade, United States Department of Commerce, Bureau of the Census, Washington, D. C., (Monthly).

Survey of Current Business, United States Department of Commerce, Office of Business Economics, Washington, D. C., (Monthly).

United States Exports of Domestic and Foreign Merchandise, Report No. FT410, Parts I and II, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1951-52-53.

United States Foreign Agricultural Trade, Office of Foreign Agricultural Relations, United States Department of Agriculture, Washington, D. C., 1951-52-53.

United States Imports of Foreign Merchandise, Report No. FT110, United States Department of Commerce, Bureau of the Census, Washington, D. C., 1951-52-53.

D. ENCYCLOPEDIA AND YEARBOOK ARTICLES

The Americana Annual, 1951-55.

Brittanica Book of the Year, 1951-55.